# JOURNAL OF PUBLIC ADMINISTRATION, FINANCE AND LAW

## EDITORIAL BOARD

# CONTENTS

# *PUBLIC ADMINISTRATION*

# CONSIDERATIONS REGARDING THE MANAGERIAL FRAMEWORK IN ORDER TO GROUND THE STRATEGY IN A PUBLIC HOSPITAL

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**Abstract:** *Strategic management, able to lead a public Romanian hospital towards performance, implies a series of management decisions influenced by factors linked to both the internal and the external environment. The purpose of this study relates to the internal environment of organisations and aims to establish a framework for decision making strategy in the medium and long-term decision making process, taking into account the perceptions of the human resources in the hospital. The methodology used was the case study on a public hospital in Romania, and the technique was the content analysis of the employees' answers to the open questions pertaining to the direction of the strategy, to organisational values and strategic objectives, extracted from the questionnaire addressed to them by the hospital manager. The results of the analysis lead to a managerial framework for decision making with regards to the direction of the hospital strategy, for establishing the organisational cultural values - professionalism, collaboration, and the strategic objectives agreed upon by the hospital organisation – hospital accreditation, quality of the medical services, and modernisation. The PDCPA managerial framework is created by enriching the PDCA model that has been created following E. Deming's PDCA model, by including the Perception of Human Resources.*
**Keywords**: *hospital management, organisational values, quality management.*

## 1. INTRODUCTION

Nowadays, Romanian public hospitals experience difficult times caused either externally, by insufficient funding for the health system, or internally by the hospital management, with its various components. Approaching the quality management of hospital medical services is difficult, especially because of the complexity of interpersonal relations that occur in the process of these medical services. The most important resource of a hospital is without a doubt the human resource, whose perceptions will have to be taken into account in any specific economic research.

The strategy first appeared in the military field; thus, Sun Tzu's papers mention for the first time such terms as *the usefulness of planning and specific strategies*, also linked to the human resources of the army, in order for the purpose to be finally reached - victory in any battle (Hinţea, 2010). The functions of management described by Frederic W. Taylor (1856-1915) and then by Henri Fayol (1841-1925) relate to the prediction function, which *"is the main feature of strategic management"* (Petrescu et al., 2014). Later, Peter F. Drucker's works on *Efficiency* mention the phrase: "*the relevant question is not how to do things right, but how to find the right things to do and concentrate our resources and efforts upon them" – "doing the right things, not doing the things right"*

(Drucker, 1973). “Today's managers' decisions influence tomorrow's results” (Drucker, 1954). According to the *Business Dictionary, strategic management implies the systematic analysis of the factors associated to clients and competitors (the external environment) and of those that characterise the organisation itself (the internal environment) in order to insure the basis for supporting the best management practices.* Strategic management also means objectives, values, mission, and vision. Value is a “sustainable *element, a method of achievement, a final goal, an imperative nature, the idea behind what is personally or socially desirable, it is based on faith*”, or "*values are beliefs of maximum generality with motivational, evaluative, prescriptive, and prospective functions, which guide attitudes and actions*" (Baciu et al., 2009). After 1989, in Romania there were few concerns with improving the health system. In the first decade of the present century, consistent questions started to arise with regards to the Romanian health system, questions to which more or less satisfying answers have been searched and found. Hospital management in Romania was the subject for study of numerous researches, among whose pilot authors we mention: C.Vlădescu and D.Enăchescu with their book *Sănătatea publică și managementul sanitar* (*Public Health and the Sanitary System*, 2002) – the basic idea of this book being the very existence of professional management, also including quality management in Romanian hospitals. These efforts were continued by C. Angheluţă et al. with their research of decisions and processes in Romanian hospitals (2012). An important event is also the appearance of the 11 quality standards of hospital medical services, drawn by the National Hospital Accreditation Commission (CoNAS), the first standard dealing specifically with organisational management, under the title of “Strategic Organisational Management - SOM”. When analysing service performance, we have two perspectives: *risk* and *quality* (Bedrule-Grigoruţă et al., 2013). In this context, the hospital is considered "*a multi-service production structure*”. This paper suggests studying the influence of the perceptions of the employees in a Romanian public hospital on the management decisions concerning future strategies and the organisational culture, thus the foundation of this management decision in order to establish the organisational direction, objectives and values corresponding to the strategy of the hospital called in what follows SPB, for the period 2015-2020.

"Romanian Health" today calls "programs to improve the quality of health services to provide information about the quality of service and aim for continuous improvement of quality healthcare ... (Verboncu, Vladescu, 2015). These programs mean paying particular attention to patients, employees and health care provider - in this case the hospital. It is important to address the quality also in terms of human resources in the hospital.

According to Deming (1986), the quality should be the phrase "*customer needs, present and future*". Quality management principles, adapted from Deming, in his "14 points", are divided into three categories:

- constancy of purpose
- continuous improvement
- cooperation between departments functions.

Deming is also the one that took up and perfected in Japan the wheel system (spiral) in quality management with the following steps: Plan (planning) DO (execution, implementation) - Check (monitoring, control) - Act (improvement action), a system that was developed first by the statistical expert Walter A. Shewhart.

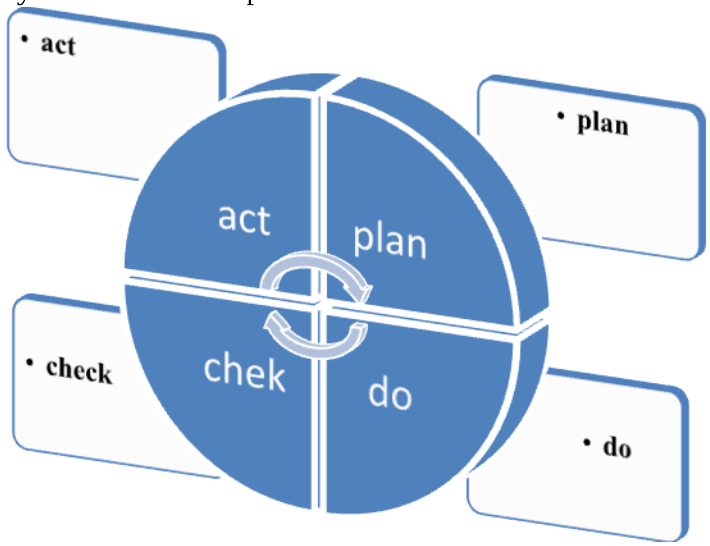


**Figure 1 Deming- Shewhart Cycle**

The correlation between patient satisfaction and employee satisfaction is revealed primarily through the time that employees of a hospital (doctors and nurses in particular) have at their disposal to achieve the objectives of patient care according to existing procedures established inside the quality management system (Janicijevic , K Seke, Djokovic, Filipovic, 2013).

The proposal of this paper is to study the influence employee perceptions of a public Romanian hospital on managerial decisions on future strategies and organizational culture and therefore substantiate the managerial decisions for setting the direction, goals and values appropriate for the organizational strategy of the hospital, hereinafter SPB., for the period 2015-2020.

The management of this hospital wanted to know if the direction and services of the hospital strategy are appropriate from the viewpoint of its employees and to establish the cultural values that characterise the organisation and which should be included in the quality policy of the hospital.

## DATA AND METHODS

### Data

S.P.B. is a single-specialty Romanian public hospital, located in the rural area of the North-East of Romania, with 311 beds and 180 employees. 80% of the employees have medical qualifications (they are doctors, medical attendants, nurses, etc.).

The starting points of the research are related to the fact that all the employees know the present strategy as well as the present strategic objectives. The research objectives are:

Knowing the direction of the hospital strategy for the period 2015-2020, through the employees' perception;

Identifying a set of organisational values recognised by the employees;

Establishing the strategic objectives specific to the hospital, for the period 2015-2020, recognised by the organisation.

The data was collected in the SPB hospital. 180 questionnaires have been distributed and 112 have been returned.

**Methodology**

In order to establish the future strategy of the hospital, an analysis has been made based on the employee satisfaction survey for the year 2014, completed by the present case study with the answers to a questionnaire with three open questions:

1. Do you consider that the hospital strategy has a correct direction (vision and mission)?
2. Which do you consider should be the cultural values of the organisation?
3. Which do you consider should be the main objectives of the hospital?

The case study is based on the following variables: strategy direction (vision and mission), strategic objectives, and organisational values – variables which depend on the employees' perception. The typology of the methodology is descriptive and explicative, and the period for which the study was applied is September 2014 - August 2015. For investigating the answers to the questionnaire, the content analysis has been used. There were no predefined, scale answers. Each employee has filled in the answers to the three questions on a piece of paper. In order to study these answers, we used the *content analysis* method. Each answer filled in by the employees on the papers was then read by two people in the hospital's management committee (one of them being the researcher), for a better accuracy of the analysis; non-verbal components have also been taken into account (writing, layout, etc.); the researcher's managerial experience was important in the performed analysis. Each feature and sub-feature of each question has been coded, and the data have been entered and processed in frequency tables. Although the respondent's function was requested on the response sheet, only two people actually mentioned it. For this reason, we considered that an analysis per staff category was not conclusive.

**Analysis of the Coded Data**

The answers were given as single words, rarely accompanied by minimum additions ("we should be more united"; "all employees should collaborate more, irrespective of their function"; "pink"; "we will still have a hard time", etc.). After analysing the answers to the first question, there resulted 10 coded subcategories and 113 items. One respondent answered "I do not know", another did not answer, and two others gave two answers each.

All the subcategories for *direction* have been coded using simple words: hospital accreditation, good, safety, wrong, very good, negative, uncertain, reorganisation, as can be seen in the table below (table 1.).

**Table 1 Coding of the subcategories for question 1**

| QUESTION 1 | | |
|---|---|---|
| HOSPITAL STRATEGY DIRECTION? | | |
| No. | Subcategory name | No. items |
| 1 | Hospital Accreditation | 2 |
| 2 | Good | 68 |
| 3 | Safety | 2 |
| 4 | Wrong | 2 |
| 5 | Very good | 17 |
| 6 | Negative | 6 |
| 7 | Uncertain | 11 |
| 8 | Reorganisation | 3 |
| 9 | I do not know | 1 |
| 10 | No answer | 1 |
| | Total no. items | 113 |

There resulted 25 subcategories for the second question and 239 answer items. To question 2, one respondent did not answer, 19 respondents provided a single answer, 57 respondents provided 2 answers each, and 35 respondents provided three answers each (table 2.).

**Table 2 Coding of the subcategories for question 2**

| QUESTION 2 | | |
|---|---|---|
| HOSPITAL VALUES? | | |
| No. | Subcategory name | No. items |
| 1 | Good communication | 24 |
| 2 | Understanding | 1 |
| 3 | Unity | 22 |
| 4 | Good collaboration | 30 |
| 5 | Team | 46 |
| 6 | Effectiveness | 2 |
| 7 | Politeness | 10 |
| 8 | Helpful | 5 |
| 9 | Punctuality | 1 |
| 10 | Professionalism | 49 |
| 11 | Responsibility | 10 |
| 12 | Correctness | 9 |
| 13 | Respect | 6 |
| 14 | Trust | 2 |
| 15 | Flexibility | 4 |
| 16 | Integrity | 1 |
| 17 | Organisation | 2 |
| 18 | Satisfaction | 2 |
| 19 | Competitiveness | 5 |
| 20 | Creativity | 2 |

| | | |
|---|---|---|
| 21 | Experience | 2 |
| 22 | With initiative | 1 |
| 23 | Active | 1 |
| 24 | Proud | 1 |
| 25 | No answer | 1 |
| | Total no. items | 239 |

The 24 grouped subcategories were: “good communication”, ‘understanding”, “unity”, “good collaboration”, “team”, “effectiveness”, “politeness”, “helpful”, “punctuality”, “professionalism”, “ responsibility”, “correctness”, “respect”, “trust”, “flexibility”, “integrity”, “organisation”, “satisfaction”, “competitiveness”, “creativity”, “experience”, “with initiative”, “active”, “pride”.

There resulted 9 subcategories for the third question and 114 answer items. For question 3, 2 respondents provided two answers each and 100 respondents provided three answers each (table 3.). The 9 grouped subcategories were: “hospital accreditation”, "service quality”, “good organisation”, “training the employees”, “performance”, “continuous improvement”, “hospital modernisation”, “reorientation”, “collaboration”.

**Table 3 Coding of the subcategories for question 3**

| QUESTION 3 | | |
|---|---|---|
| HOSPITAL'S MAIN OBJECTIVES? | | |
| No. | Subcategory name | No. items |
| 1 | Hospital Accreditation | 57 |
| 2 | Service quality | 21 |
| 3 | Good organisation | 6 |
| 4 | Training the employees | 9 |
| 5 | Performance | 5 |
| 6 | Continuous improvement | 2 |
| 7 | Hospital modernisation | 7 |
| 8 | Reorientation | 1 |
| 9 | Collaboration | 6 |
| | Total no. items | 114 |

It was necessary to perform a regrouping and recoding of the answer categories in order to reach considerable results for the objectives of the study.

The answers have been regrouped through the logical combination of the various answers; thus, for question 1, “Hospital accreditation”, “Good”, “Safety”, “Very good” have been regrouped with the recoding *Good orientation*; “Wrong”, “Negative”, “Uncertain”, “Reorganisation” have been regrouped with the recoding *Inappropriate direction*; similarly, for question 2, "understanding”, “unity”, “good communication”, “good collaboration”, “team”, “politeness”, “flexibility”, “helpful”, “correctness”, “satisfaction”, “pride” have been regrouped with the recoding C*ollaboration;* “effectiveness”, “punctuality”, “professionalism”, “responsibility”, “respect”, “trust”, “creativity”, “experience”, “with initiative”, “active”, “organisation”, “integrity” have been regrouped with the recoding *Professionalism;* for the third question, “good organisation”, “hospital accreditation”, “performance”, “collaboration” have been regrouped with the recoding *Hospital accreditation*; “service quality”, “employees' training”, “continuous improvement”, “hospital modernisation”, “reorientation” have been regrouped with the recoding *(Medical) service quality*.

## RESULTS ANALYSIS

After regrouping and recoding, the result reached was made up of two categories for each question. For the first question, we have the following categories: *Good direction* and *Inappropriate direction,* with the following number of corresponding answers: 89 for the first category and 24 for the second category - table 4.
79% of the respondents consider that the hospital strategy has a good direction.

**Table 4. Results for question 1**

| | REANALYSIS BY GROUPING QUESTION 1 HOSPITAL STRATEGY DIRECTION? | |
|---|---|---|
| No. | Category coding | No. items |
| 1 | GOOD DIRECTION | 89 |
| 2 | INAPPROPRIATE DIRECTION | 24 |
| | TOTAL | 113 |

For the second question, the remaining categories are: C*ollaboration* and *Professionalism,* with 154 answers for the first category and 85 for the second – table 5. These may become the hospital's organisational cultural values, after the results of this study are presented to the entire organisation.

**Table 5. Results for question 2**

| | REANALYSIS BY GROUPING QUESTION 2 HOSPITAL VALUES? | |
|---|---|---|
| No. | Category coding | No. items |
| 1 | COLLABORATION | 154 |
| 2 | PROFESSIONALISM | 85 |
| | TOTAL | 239 |

For the third question, the remaining categories are: *Hospital accreditation* and *Service quality*, with 74 answers for the first category and 40 for the second (table 6).

**Table 6. Results for question 3**

| | REANALYSIS BY GROUPING QUESTION 3 MAIN OBJECTIVES OF THE HOSPITAL? | |
|---|---|---|
| No. | Category coding | No. items |
| 1 | HOSPITAL ACCREDITATION | 74 |
| 2 | SERVICE QUALITY | 40 |
| | TOTAL | 114 |

## CONCLUSIONS

Analysing the selected factors, which influence the internal organizational environment, through the case study, the following conclusions resulted as an answer to the 3 objectives suggested in this research:

The direction (orientation) of the hospital strategy is good in the employees' perception, so the established vision and mission are correct, and the medical services development strategy can be continued and improved.

The organisational culture values selected by the employees and that the management decision factors should take into account are *Collaboration and Professionalism*.

The strategic objectives accepted by the human resources in the hospital are*: Hospital accreditation* and *Service quality*.

The management strategy established through the managerial decision for the hospital to perform, for the period 2015-2020, starting from organisational values, the organisational mission and vision, can have the following main components related to the internal environment:

Approaching quality management in compliance with the hospital accreditation standards, certified by the ANMCS (the National Health Quality Management Authority) and the other ISO standards: 9001, 14001, 18001, 27001, HACCP 22000.

Preparing the human resources through Continuous Medical Education, research and development, and through improving communication and teamwork.

By using E. Deming's PDCA (Plan-Do-Check-Act) model, we have developed and adopted a new PDCPA managerial framework (Plan-Do-Check-Perception of HR-Act) presented in figure 2.

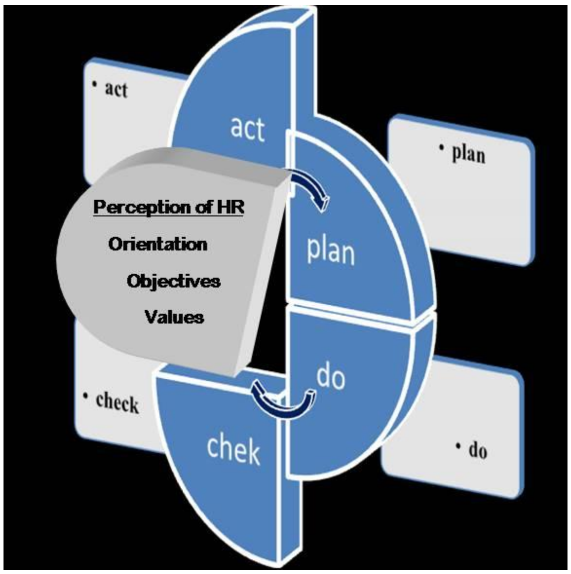


**Figure 2. Adaptation of E. Deming's PDCA model**

In the future, these analyses could be continued by other qualitative or quantitative researches, studying the depth of the above-mentioned issues. For objective 1, continuing the research could mean defining the *Good direction:* by adding new medical services? by developing the partners' network? by training human resources? and others. For objective 2, cultural values should be confirmed and reconfirmed, or periodically changed according to the development of the human resources in the hospital. The instruments used in the research could also differ: focus group per staff category and hospital section; questionnaires.

Another open path to future studies is using the contents analysis method through specialised software, allowing thus to verify the reliability of the conclusions by using specialised tests for quantitative studies.

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# ASSESSING THE REGIONAL DEVELOPMENT DEGREE - STEP THREE: ANALYSIS OF LOCAL DEVELOPMENT FIELDS

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**Abstract**: *The territory can be seen as a space power equated in modern societies with the state. From this perspective, the state is responsible for shaping the framework to ensure development of the territory, local development. The concept of local envisages territorial communities, including urban, regional, communities that have been in the spotlight the last few years to address the complex problems faced in different fields: economy, environment, spatial planning, governance, science and research, education and training, social development. Therefore, state governments and primarily local ones, should cooperate with each other and with civil society players that taking into account the legal, operational, institutional and inter-relational, to solve major problems in local communities, in terms of sustainable development, so with responsibility to present generations, but especially to future generations. This article aims to present two specific fields of local development in Romania, through development indicators: local governance and science and research field.*
**Keywords**: *local development, fields, governance, regulation, science, research*

## 1. GOVERNMENT AND REGULATIONS - LOCAL DEVELOPMENT FIELD

Lately, local development represents one of the most common used and debated concepts. The concept's timeliness is obvious both at theoretical level, where numerous studies and articles are published, and also in practice where various activities are included within the sphere of development and many initiatives are designed to support these trends[1].

*Grand Dictionnaire de la langue française* defines government as "the art or manner of governing to ensure economic, social and institutional development, sustainable, maintaining the balance between state, civil society and economic environment".

[1]Balogh Martin (2012) Non-governmental organizations – factors for local development, Transylvanian Review of Administrative Sciences, Special Issue, pp. 20

Government involves today a unique philosophy that seeks to transform the citizen into a major player in the development of the territory. The state is seen as an "ecosystem with a plurality of dimensions - social, environmental, urban, economic, political, cultural etc. and a plurality of interacting actors”.

The phrase government has many meanings. One can speak of a "world government" closely linked to the processes of globalization, or a "European Governance" which refers the reform of European institutions and the relations of local communities with these institutions. One can also speak of a "local government" to define territorial practices aimed at endogenous and exogenous development and mobilizing local development actors in agreement with the state or European policies.

From a development perspective, governance is a process of collective decision therefore it requires cooperation between institutions and different stakeholders who exercise their responsibilities and powers to achieve an overall strategy in the long term.

After the Second World War development has become an objective of each society[2]. Today the term is defined as a process that leads to increased welfare. Economic activity and material welfare are important, but the development is not confined to increasing gross national product. Education, health, culture and environment are equally important:

1.1. the number of public authorities within a region - this indicator analyzes the distribution of sources of authority in the regions;

1.2. the number of civil servants / local elected officials - this indicator aims to analyze the administrative capacity in terms of quantity - local human resources.

1.3. number of normative acts issued by the county authorities - this indicator aims to analyze the regulatory capacity of local public authorities.

1.4. financial resources transferred from the state budget to local communities - the indicator analyzes the dependence / autonomy degree of local authorities towards the state.

## 1.1. The number of public authorities within a region[3]

Within this indicator, we performed an analysis of the commune, town and city number of public authorities in the 8 regions of Romania. It appears (Chart no. 1) there are wide discrepancies in terms of number of communal public authorities: 32 in Bucharest- Ilfov region to 519 in South - Muntenia region. Even if we remove from the analysis Bucharest - Ilfov region, which is very specific, the difference between the region with the least communes (West-281) and the region with the most communes is a considerable one.

[2]The development is the unfolding and succession of processes and natural and / or social phenomena over time. Growth is development in the amplifier sense, the term is borrowed from biology and referring to the quantitative side (Ionaşcu G.(2003), Dezvoltarea şi reabilitarea aşezărilor umane din România (Development and rehabilitation of human settlements in Romania),Ed. Tempus, Bucureşti, p. 11, 12.

[3]Data were collected by consulting county councils websites, the decisions approving the organizational charts and lists of positions for 2015 and the decisions approving budgets and budget revisions for 2015.

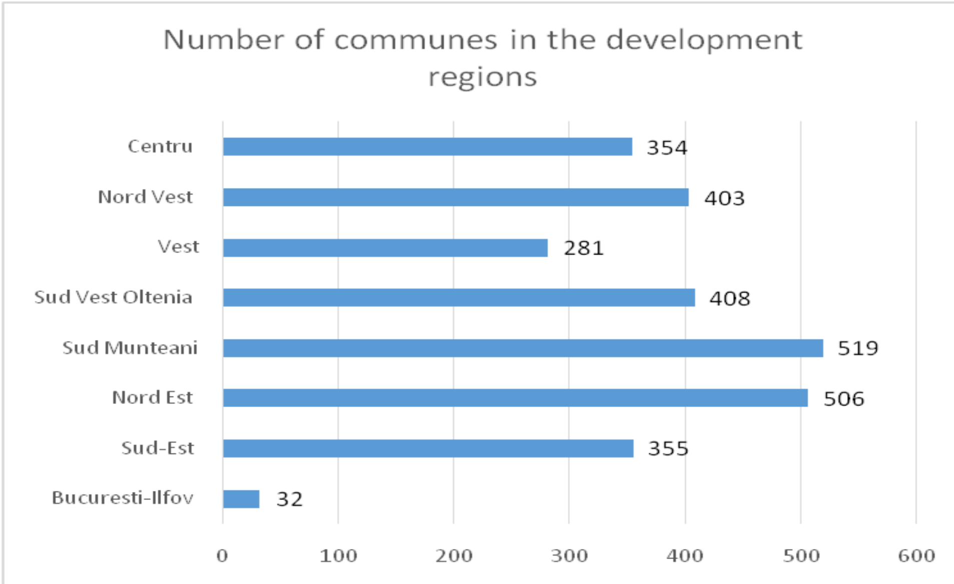


**Chart no.1**

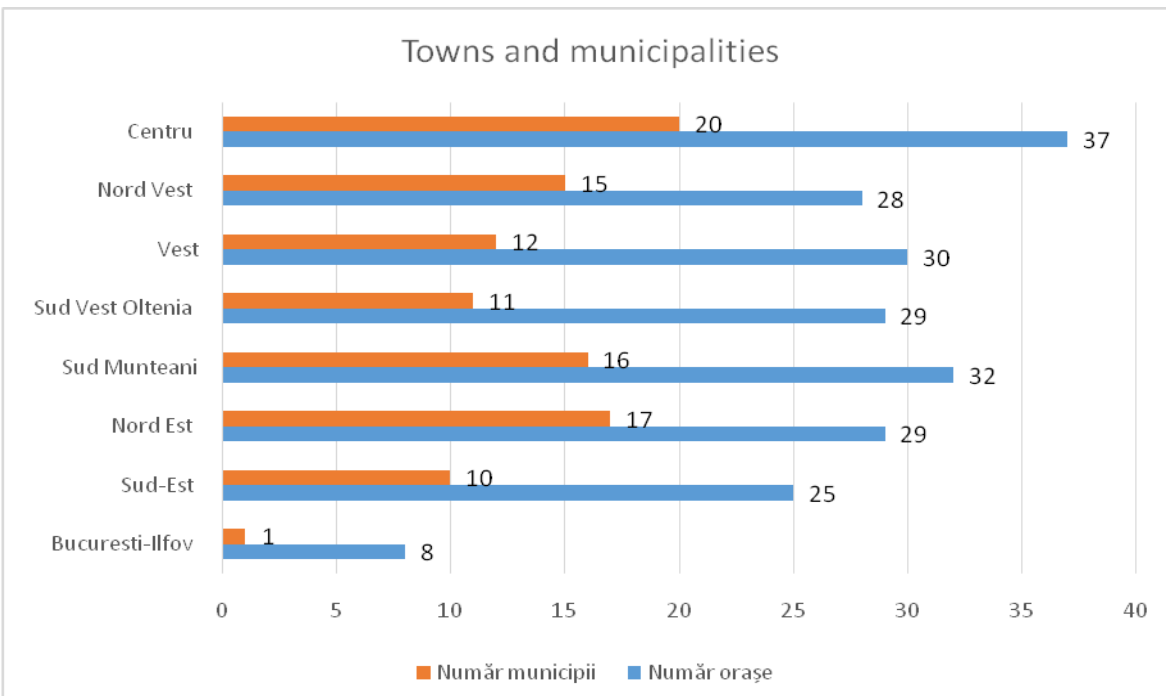


**Chart no.2**

Regarding the town and municipal authorities there is, except for Bucharest - Ilfov, some balance (Chart no. 2). Five of the Regions have a similar situation. The region with the highest rate of urbanization is the Center Region.

**1.2. The number of civil servants / local elected officials**

This indicator aims to analyze the administrative capacity in terms of quantity - human resources at local level. Thus, we analyzed the number of county councilors in each region and number of employees and civil servants at county councils in each region. For Bucharest, we took into account the number of local elected officials in the General Council.

This indicator shows that the extremities are West region (130 county councilors) and South Muntenia (226 county councilors). This indicator is directly proportional to the population of each region, given that there is a representation quota of the number of inhabitants.

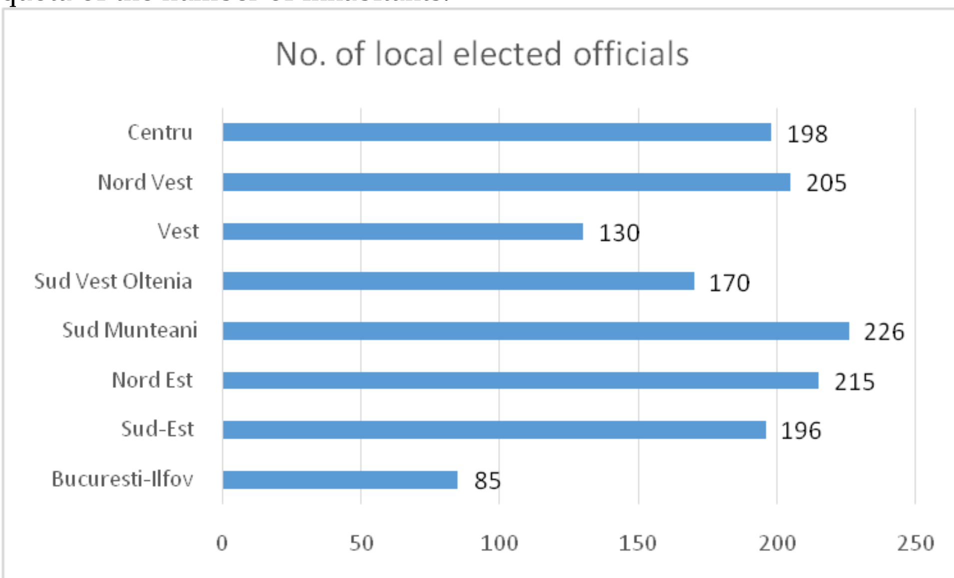


**Chart no.3**

In terms of number of employees and the number of civil servants from county councils, extremes are also represented by South - Muntenia and West, as in the case of county councilors, because the specialist apparatus at county council level is dimensioned also, relative to the population. We consider this criterion as being unrepresentative for the activity of the county.

The indicator is relevant from the perspective of the Romania's territorial-administrative regionalization, when future regional authorities should take over from the current staff in the county authorities. But simple sizing the counties' specialist apparatus in proportion to the population does not give us information about administrative capacity or administrative performance.

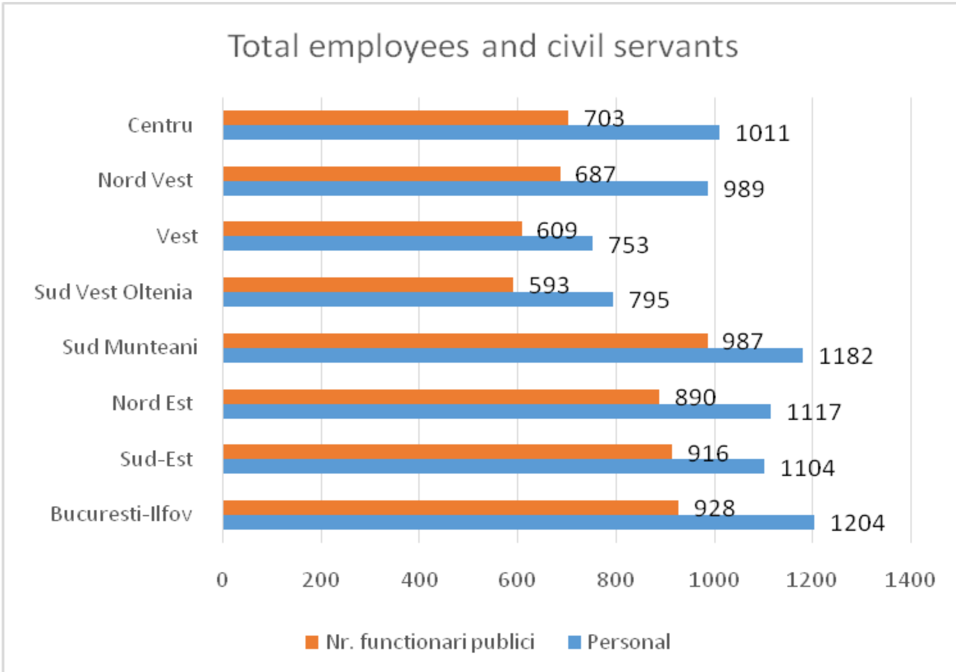


**Chart no.4**

### 1.3. The number of normative acts issued by the county authorities

This indicator aims to analyze the regulatory capacity of local authorities. Although the number of decisions of county councils is dependent upon the issue of local and synonymous categories of issues covered (e.g. the county budget) it can be seen that there are big differences between counties (Ilfov 131 decisions or Dâmbovița 438 decisions) and these differences are directly proportional to the differences between the number of county councilors of each region. Paradoxically, most decisions are in regions with most county councilors (Chart no.5).

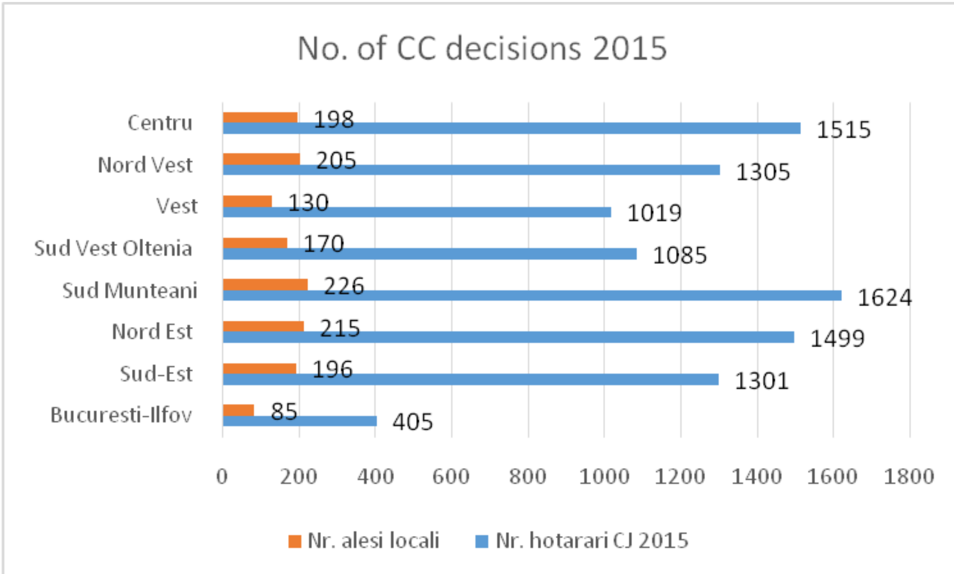


**Chart no.5**

### 1.4. Financial resources transferred from the state budget to local communities

The indicator analyzes the dependence / autonomy of local authorities towards the state. We analyzed grants from other levels of public administration in 2015 and the amounts received from the EU / other donors for payments made and pre-financing.

The poorest regions (North East) received the largest grants from other levels of government in 2015, natural process for supporting the elimination of development discrepancies.

A special case is represented by the amounts received from the EU / other donors' payments made and pre-financing. The difference between South Muntenia and Center is over 300%.

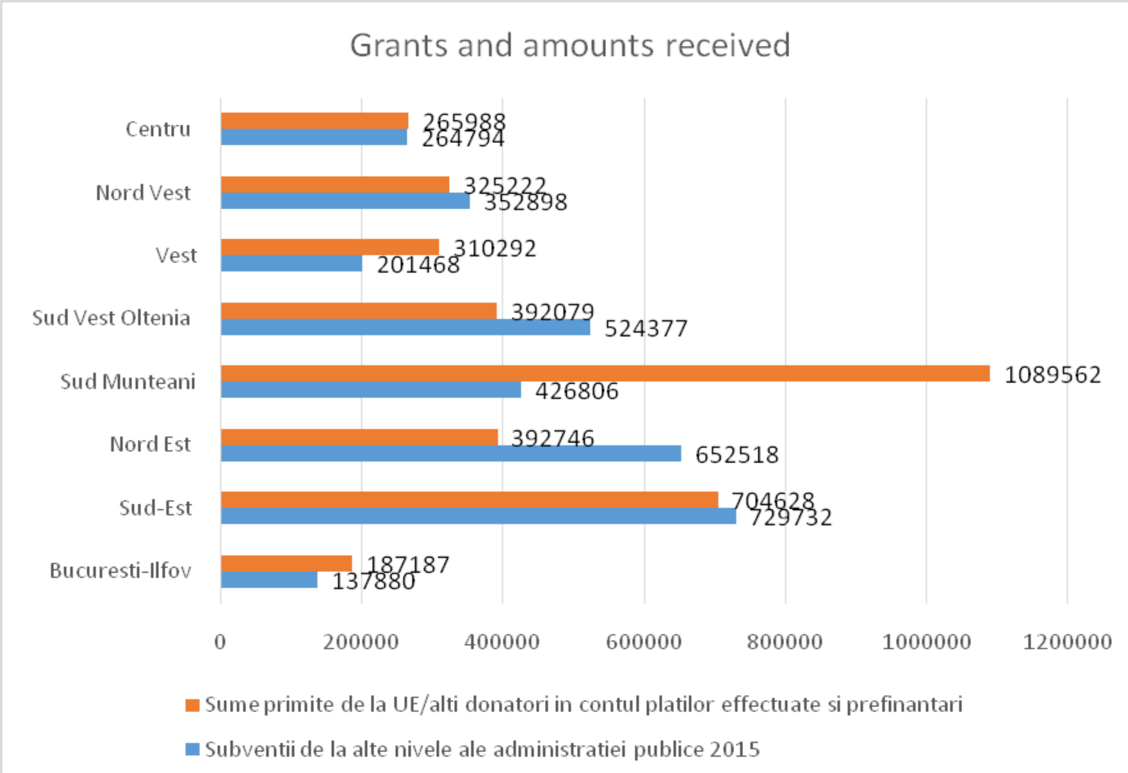


**Chart no.6**

## 2. SCIENCE AND RESEARCH - LOCAL DEVELOPMENT FIELD

Science and research should be the starting point for any development. This means harnessing local human potential as well as knowledge and existing information. Within each area of development research is needed to substantiate development programs promoted by each actor[4].

Research is the one determining the quality increase of administrative measures as well as for various activities undertaken by public authorities. Advances in science make much easier achieving the primary goal of public administration namely satisfying the general welfare. Also research in information technologies make easier the communication of authorities with citizens, improves citizens' access to public information.

The generation and exploitation of knowledge have become vital sources of global wealth growth. Knowledge is also central to determining competitiveness and as such states of the world, especially the developed ones, have engaged in a systematic generation, developing national systems and more sophisticated international interactions. In the knowledge triangle of education-research-innovation, the last item is most closely related to the impact on welfare and the most

[4]Dincă, D., Dumitrică, C. (2010), Dezvoltare şi planificare urbană' (Urban development and planning) Ed Pro Universitaria, Bucureşti

problematic in terms of the related policies. Innovation, process with many variables, is in the center of the cooperation between research and industry. In the last decade, developed countries have proposed intermediary entities or forms of interaction and collaboration through which to create bridges between the two sectors, allocating these entities increased public financial resources.

From the perspective of regional development, we are interested in:

- number of existing decentralized research entities in the region - this indicator reveals decentralized local research capacity;
- number of research institutions, including universities in the state system existing in the region - the indicator aims to analyze research capacity at regional level;
- number of existing researchers at regional level - this indicator analyzes regional research capacity in the human resources perspective.
- number of research projects aimed at local development -the indicator examines the extent to which local / regional development lies at the heart of research;
- number of partnerships between research institutions and public authorities - this indicator shows the degree of cooperation and integration of the research results in the development processes.

According to existing data in the Tempo Online INS database, the researchers' situation in 2014 was as follows:

| | |
|---|---|
| NORTH-WEST region | 2280 |
| Bihor | 59 |
| Bistriţa - Năsăud | 103 |
| Cluj | 2068 |
| Maramureş | 20 |
| Satu Mare | 7 |
| Sălaj | 23 |
| CENTER region | 1831 |
| Alba | 238 |
| Braşov | 917 |
| Covasna | 32 |
| Harghita | 4 |
| Mureş | 326 |
| Sibiu | 314 |
| NORTH-EAST region | 3332 |
| Bacau | 254 |
| Botoşani | 4 |
| Iaşi | 2572 |
| Neamţ | 83 |
| Suceava | 374 |

| | |
|---|---|
| Vaslui | 45 |
| SOUTH-EAST region | 1212 |
| Braila | 24 |
| Buzau | 32 |
| Constanta | 736 |
| Galati | 339 |
| Tulcea | 77 |
| Vrancea | 4 |
| SOUTH-MUNTENIA Region | 2160 |
| Argeş | 1711 |
| Călăraşi | 73 |
| Dâmboviţa | 154 |
| Giurgiu | 1 |
| Prahova | 207 |
| Teleorman | 14 |
| BUCHAREST– ILFOV region | 12469 |
| Ilfov | 2147 |
| Bucureşti municipality | 10322 |
| SOUTH-WEST OLTENIA region | 1625 |
| Dolj | 1474 |
| Gorj | 26 |
| Olt | 2 |
| Vâlcea | 123 |
| Regiunea VEST | 2626 |
| Arad | 686 |
| Caraş - Severin | 119 |
| Hunedoara | 226 |
| Timiş | 1595 |

Thus, the number of researchers, per regions is linked to the existence of university centers: Bucharest, Iași, Timișoara, Cluj Napoca.

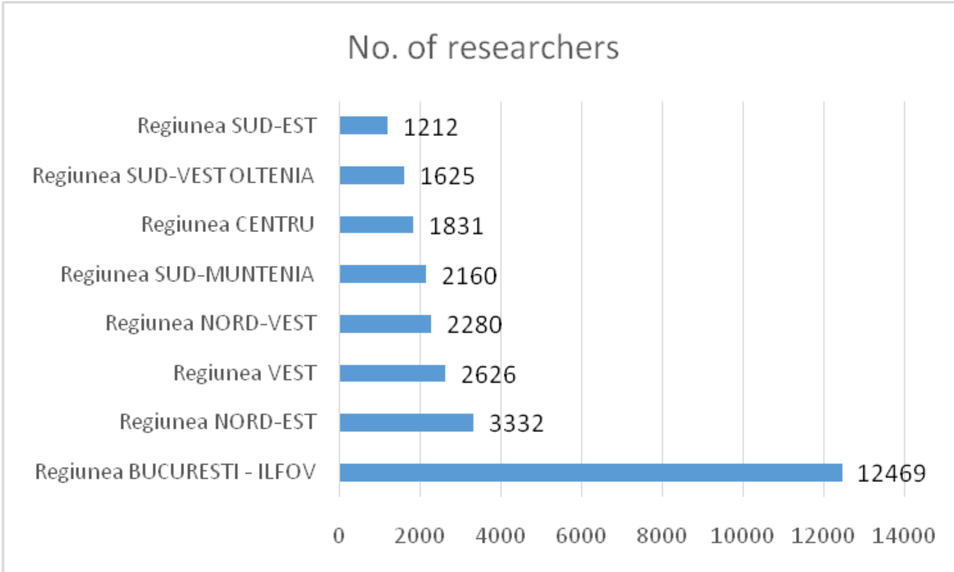


**Chart no.7**

Regarding research entities at the national level there is a decrease in the number of private entities (Chart no.8) in 2011-2014 and a slight increase in the nonprofit and governmental sector. Public research entities, however, do not operate in a decentralized system but possibly only deconcentrated, subordinated to central public authorities (E.g. Ministry of Agriculture and Rural Development) or universities. Basically, it works locally with decision-making and financial independence especially research entities in the private sector.

Regarding partnerships between public authorities and research entities, for 2016 we have identified five calls from local public authorities to conclude agreements for submission of applications for funding for institutional development projects.

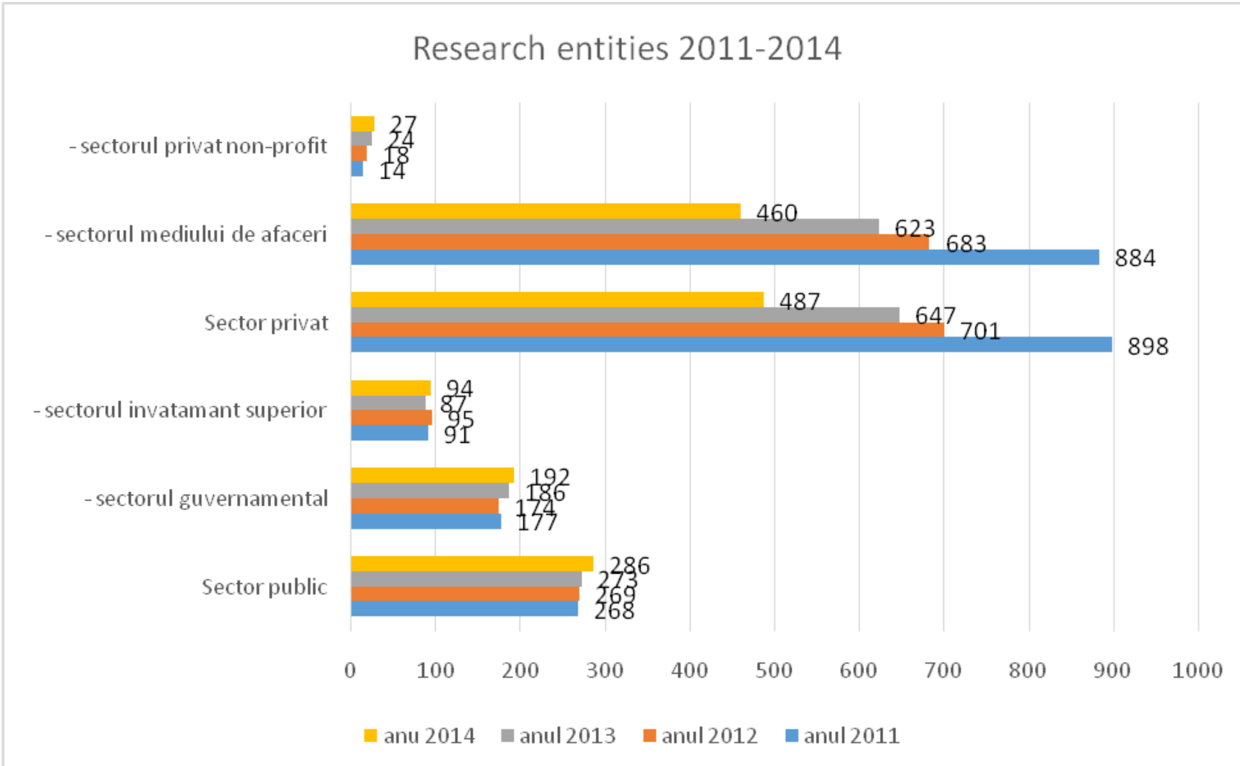


**Chart no.8**

## CONCLUSIONS

From the perspective of local government, there are several discrepancies among development regions, both in terms of quantity and quality of the administrative acts. This finding leads to the necessity of regional reorganization, possibly the administrative-territorial regionalization, but in a formula that does not take account of the eight regions that currently exist.

From the research perspective, we consider that in general there is not an appropriate communication and collaboration between research entities and county, town and communes public authorities, much less research undertaken jointly. We believe that the only permanent form of cooperation is the public procurement procedures undertaken by public authorities for accomplishing various studies (studies of opportunity, strategies, plans etc.), but overwhelmingly they are made by private entities. Public entities have not yet developed mechanisms for tenders and participation in competitions launched by local authorities.

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# IMPLICATIONS OF GOVERNMENT ON SUTAINABLE DEVELOPMENT

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**Abstract***: This paper aims to exemplifying the implications of governments on supporting sustainable development, emphasizing the correlation between government action and sustainable development, and also, the importance of interdependence between the aforementioned terms. In fact, by achieving the goal of sustainable development, we talk about economic growth and environmental protection, all having direct implications on the community. Through this analysis, by exemplifying government actions towards research development and innovation and promoting a tax system that meets the requirements of sustainable development, we want to build a research for community that emphasize the importance of good collaboration in the binomial: government, civil society . The results will suggest that the support of governments, investment in innovation, research and development, strengthen public finances, recreate circumstances for development that meets the needs of the present without compromising the ability of future generations. For our analysis, we retrieved data from the Eurostat for the period between 2008 and 2014, including the EU 28 member states.*
**Keywords***: governments, sustainable development, civil society.*
**JEL Classifications***: G28, Q01*

## 1. INTRODUCTION

Contemporaneity shows that the government is an important actor both in politics and in economic and social area. In the context of strengthening global efforts in solving the challenges of sustainable development, arises more often the issue of creating an economy based on knowledge and innovation and to consider the issues relating to sustainable consumption and production, social inclusion, public health or natural resources and climate change and energy (Cook et al., 2013). The global implications, with the competent entities and studies from this level (Aall, C. & Norland, I.T., 2005), we report an approach like "Millennium Development", the aim being to launch a development process that is based on the achievement of sustainable development (ONU).

Development is a complex process and cannot be ‘programmed’ through linear interventions (Easterly 2001), but we can say that government decisions play a essential role in critical periods of the economy and the way in which these decisions they find the incidence in practice, could determinate the future of an entire generation. From a theoretical point of view, in fact, in achieving the goal of society based on knowledge and innovation in wich the growing is done with care for future generations and create a favorable environment for sustainable development, an important role has both government and civil society (Arnăut, 2014).

A fruitful approach to understand the phenomenon may be to study its importance for the comunitiy, so we agree that, in other words, this fundamental objective of the EU, brings together several components of the economy, social policy, environmental policy, continue to improve the quality of life and welfare for present and future generations. To give meaning to the term, and to shouw the importance of this resersch, we also identified that the reality of contemporaneity, illustrate that we can not be safe, and we must confront with social, environmental, political and economic issues, and the most important decisions should refer to a correct approach of socio-economic challenges in order to face up to the globality challenges (Aall & Norland, 2005). In this context, we speak of inclusion strategies and working procedures who regards important issues such as: poverty and allocation of funds for education, economic development and technological innovation. Central objective pursued should be a balance between economic growth and social development, safeguarding environmental capacity to support human life on this planet, and to achieve this goal, besides the implication of international action, we believe that an important role is played by the Governments but also civil society.

The results of this research lead and providing a viable point of view for community, by the fact that the emphasize of binomial importance Government-Civil Society, highlights the current level of uncertainty about the future of economic and ecological development, answering this question: Sustainable development is a myth, truth or challenge? In fact, sustainable development need to goes beyond merely trying to achieve the Millennium Development Goals, but we could say that we are witnessing to the continued efforts of support sustainable development in defining and creating a matrix decision with finality achieve this goal.

This paper presents aspects of certainty in wath regards the importance of government action, showing that the overall objective of eradicating poverty is not only the competence of social entrepreneurs, but also the competence of governments and all civil society.

## 2. SUSTAINABLE DEVELOPMENT AND THE MILLENIUM DEVELOPMENT GOALS

In 1987, Gro Harlem Brundtland put forward the global objective of achieving sustainable development (SD). She had been tasked by the United Nations General Assembly (1983) to ‘make available a report on environment and the global problématique to the year 2000 and beyond, including proposed strategies for sustainable development’. Brundtland decided that the main goal for the proposed global efforts was to find a path of balanced social and economic development compatible with a notion of social equity across space and time (United Nations General Assembly 1987). In other words, as a minimum of requirements, it has imposed the need to provide a basic level of humanity, the foundations of subsistence allowing coexistence in dignity, with a balanced consumption and resource use (Dovers, 2005). Although it has been treated separately, the current approach reflects more directly the governmental interferences on the consolidation of studied phenomenon, since in 2000, during the largest assembly meeting of states" representatives, both poor and developed countries were adviced to implement new measures to eradicate poverty, promote human dignity and equality and take environmental protection actions.

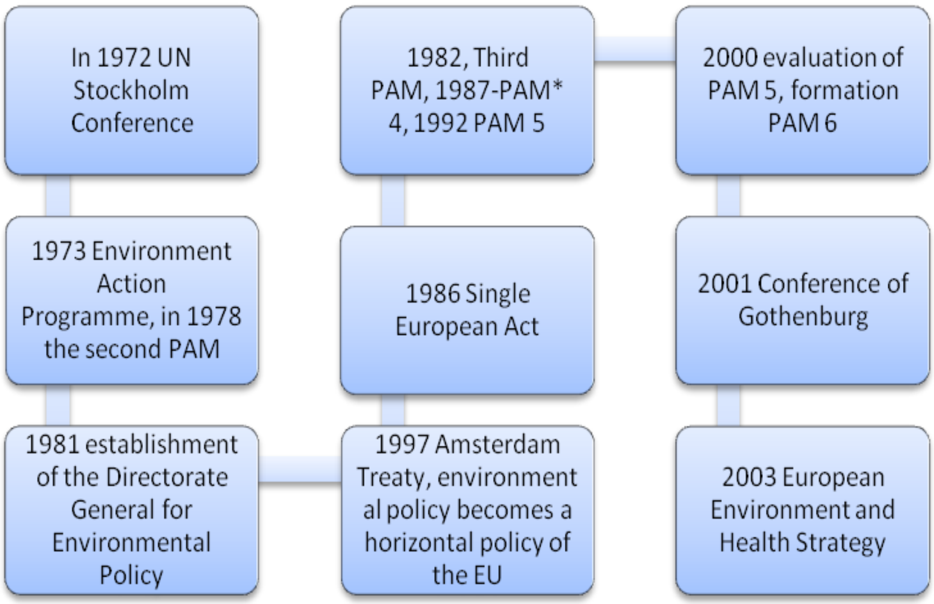


**Fig. 1. Evolution of the measures undertaken to strengthen the sustainable development concept**
*Source: own processing based on data from the European Commission-* PAM- Environmental Action Programme in present we have PAM 7*

To strengthen and to put on a solid basis the concept of sustainable development ONU, has defined a set of millennium development goals, based on a resolution adopted in 2000. For the purpose of providing clearer image of the measures taken to that date, according to fig. No.1, we relief the situation much more clearly.

Briefly, we can ascertain that sustainable development is a concept whose status allows an inter with vast areas and its genesis and the measures taken to strengthen the phenomenon, showing not only a concern to achieve the objectives in government strategies and especially a carefulness for life in the present and future. But the realization that decades of experimentation and large-scale efforts of multilateral development organizations have not revealed any replicable designs that would enable sustainable economic development on a truly global scale reflects Brundtland's (1987) concerns at the lack of a 'blueprint for sustainability', explain the usefulness of this research.

## 3. THE NEED FOR INNOVATIVE ACTIONS AND CONSOLIDATION OF A ENVIROMENT FOR FUTURE GENERATIONS

Started to the objective of this reserch, if we analyze the specialty literature, we will notice that in its efforts to achieve the goal of sustainable development, there is need to involve both from entrepreneurs, governments and the civil society as a whole. The study will highlight that there is a direct correlation between R & D spending, with the purpose of strengthening innovation, energy and climate change and eco-innovation. Also, even if our analysis is based on these two variables, based on studying international reports (http://ec.europa.eu/eurostat/data/database), we need to say that we identify a correlation between official assistance for development as a percentage of gross income and the generation of waste in each of the 28 EU Member States. Because the main beneficiaries of actions for sustainable development are even members of the community, relief figure below implications of sustainable development on the community.


**Fig.2. The implications of sustainable development on the community**
*Source: author's vision*

In light of the desire to redefine the identity of sustainable development, its importance, the pillars on which rests and also the extent to which government policy is able to promote and sustain balanced socio-economic development, environmental protection as an integral part of the development process, we emphasize coordinates from the EU 28 context, with analysis of both the R&D expenditure and the sums allocate for the official development assistance as a percentage of gross income.

Of course that we speak about sustainable development with implications for reducing environmental pollution, in which states have resorted to measures such as: green taxes, increasing the cost of gasoline, taxes for environmental protection, lowering taxes on some businesses and increase to more polluting sector, introduction of other taxes to create financial resources to be used for environmental purposes or implementation of fiscal environmental reform. To maintain constant budget revenues, we can even talk about a classification of economic and fiscal instruments established to protect the environment, established by the OECD. The reason that I chose to talk about these issues due to the fact that even in this way, we highlight the correlation between government and sustainable development, because the term environmental fiscal reforms (EFR) refers to a range of taxation and pricing measures that can raise fiscal revenues while furthering environmental goals.

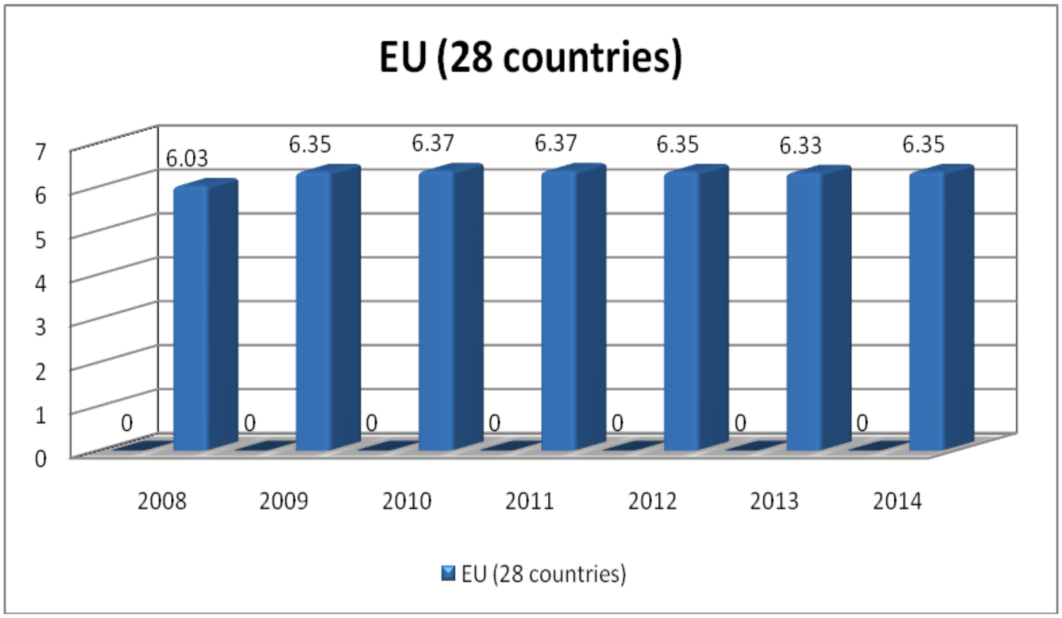


**Fig. no.3 Evolution of environmental taxes, the EU countries**
*Source: Processing the data provided by: http://ec.europa.eu/eurostat/.*

One of the key players in the regional economic sustainable development process is government with his levels (national, regional and local). In this context, authorities create the legal, fiscal, and regulatory environment that encourages job creation, competitiveness, economic growth, the improvement of quality of life. As we can see in the chart above, given that they are talking about long-term view, the measures taken, requires a particular approach, addressing the requirements for establishing a society in which environment and thus the necessary resources generations next are protected and economic development is done simultaneously with their judicious approach and a strategy to meet the goal of achieving sustainable development. In fact, the evolution of environmental taxes, related in fig. no.3, shows a growing concern as far as that goes environmental protection, with an upward trend. In case of tax burden high, also the degree and the economic development is slow but what is intended to highlight is that in other terms, with different coordinates, economic freedom and tax may constitute prerequisites for recovery and development sustainable. In this way, if we if talk of about a strategy based on economic freedom, with the tax instrument, we can talk about strengthening the foundation to achieve the goal of sustainable development (Marinescu & Staicu 2006). In fact, through taxation, can solve many of the problems related to environmental protection, knowing the fact that through the vision of citizens and researchers in the field, taxation can be a tool for achieving the targets whose utility depends very few opportunities (Leibfritz & Thornton, 1997).

In another context, if we discuss about taxation and sustainable development it is necessary to say that there is a need to reduce fiscal pressure stepped on the work, but also strengthen fiscal institutions in the field of control, strengthening the role of fiscal and budgetary policy (Arnăut, 2014). Even if fiscal policy objectives are grounded in base of provisions included in the Stability and Growth Pact, the coordinates economic policy will take account of the principles contained in the Broad Economic Policy Guidelines (Altar, 2012). We discuss in this way, not only about implications of international entities, but also the implications of civil society. A study realised by researchers from Bruxelles (Luff, 1996) pointing out that like any art, sustainable development, could benefit from the active involvement of citizens. Sustainable Development Strategy of the European Union, seen as the main political document for strategic decision making and integrated sustainable development, containing principles that reflect the process of governance in Europe and the connection between governance and sustainable development, is provided in the 1987 Brundtland report.

Basically, in fig no.3., wanted to flesh out that over the seven years of review, there have been efforts in wath regards the realization of a tax system that would support sustainable development, protecting the environment and relying economic development, but in base of initial hypothesis formulated, we continue research by highlighting the correlation originally specified.

## 4. THE ROLE OF GOVERNMENTS IN THE STRATEGIC DIRECTIONS OF SUSTAINABLE DEVELOPMENT

In 1987, the World Commission on Environment and Development (WCED) published a very important document, report 'Our Common Future (World Commission on Environment and Development (1987), Our Common Future), also known as "The report Brundtland " (Named after the former Norwegian prime minister Gro Harlem Brundtland who acted as chair of the WCED), the most popular definition of sustainable development is contained even in this report "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". In the context of discussing the role of governments in the strategic directions of sustainable development, we want to signal that the objectives set by the strategy of each country, is governed by the policies and tools, scenarios that take into account the implementation in practical situations the objectives originally set and with positive effects on supporting human resource policies, social policy, research or development environment. Thus, scenario development, can differentiate from one country to another may arise precisely because some factors such as geographical location, strong demand for consumer goods or presence of certain natural resources.

According to those mentioned, public expenditure for environmental protection, ecological policy of the state and mirror are made to maintain the ecological parameters in case of disruptions by the adverse effects that economic development could have on the natural environment (Calanter, 2011). Thus, the importance of sustainable development has made the phenomenon to be one with research time, the phenomenon being discussed since the early 70s and mentioned in "Limits of development", the Club of Rome, 1972), an opportunity to keep the same itinerary the trial respectively necessitated economic development to occur while preserving environmental parameters (Popa & all, 2014). Hence, we judge that given that fiscal policy takes into account the issues of correlation judicious budget revenues with expenditures, clearly that the implications of fiscal and budgetary responsibility over administrative activity taking place in the development of sustainable (Siteanu, & Filofteia 2011).

With the purpose of offering a viable perspective on the correlation Sustainable Development-Government, we provide an array of procedures that must be met in order to improve the quality of life both economically and socially and environmentally, highlighting and direct corellation between two variables important respectively variable government quantized sampled by R&D expenditure and innovation from the dependent variable UE 28 countries, and sustainable development, quantified by the amount of waste generated per country, eco-innovation, climate change and energy.

The empirical analysis will be performed based on simple linear regression and multiple between the dependent variable and independent variables set, and a correlation analysis and software econometric used will be Eviews Statistics and SPSS, which will help create an image as clearer on the relationships between different variables.To better understand the phenomenon and to find a valid answer to the question of this paper, the research analyzed a specific type of correlation, Pearson Correlation. The dependent variable will be Expenditure on R & D, innovation at EU level 28, and independent variables: the amount of waste generated per country, eco-innovation, climate change and energy. The data used for empirical analysis focuses on the period 2006-2014, on a yearly basis, they were obtained from Eurostat databases.

The equations for the two regressions are expressed by the following formulas:
If simple linear regression is necessary to identify a factorial econometric model of the form:

$$y = f(x) + u, \quad \text{where:}$$

y = the actual values of the dependent variables;
x = real values of the independent variables;
Method : Least Squares
u = residual variable representing other factors influences the variable y, the model and unspecified factors believed to be random, with insignificant influence on the variable y

To build a linear regression model we have defined government dependent variable (the result), in terms of the amount of expenditure on R & D and innovation, while eco-innovation, climate change and energy, we considered independent variables.
Residual = Expenditure on R & D, innovation UE 28 – (C_((1)) * Eco-inovation Index)
Method : Panel Least Squares
Residual = Expenditure on R & D, innovation UE 28 – (C_((1)) * Eco-inovation Index
+ C_((2)) * Greenhouse gas emissions

## 5. RESULTS

According indicator R-squared value variation of independent variables (eco-innovation, climate change and energy) are explained in a proportion of 38.7% of the variation in the dependent variable (Gov.) of simple linear regression model. Durbin-Watson test has a value of less than 2, which indicates that there isn't a serial correlation of errors, that this does not influence significant endorsement regression model results. Akaike and Schwarz tests are used to compare two or more models. But this work is not the case (lower values are preferred). As can be seen in the attached table probability T-test statistic is less than the benchmark (0.05) for variable GOV., which means that this ratio is considered statistically significant.

Dependent Variable: TOTAL_R_D_EXPENDITURE_CO
Method: Least Squares
Date: 10/31/16 Time: 10:33
Sample (adjusted): 1 288
Included observations: 288 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| ECO_INNOVATION_INDEX | 0.019241 | 0.001304 | 14.75628 | 0.0000 |
| GREENHOUSE_GAS_EMISSIO... | -0.000932 | 0.001308 | -0.712277 | 0.4769 |

| | | | |
|---|---|---|---|
| R-squared | 0.368023 | Mean dependent var | 1.608611 |
| Adjusted R-squared | 0.365813 | S.D. dependent var | 0.978669 |
| S.E. of regression | 0.779371 | Akaike info criterion | 2.346262 |
| Sum squared resid | 173.7220 | Schwarz criterion | 2.371699 |
| Log likelihood | -335.8617 | Hannan-Quinn criter. | 2.356456 |
| Durbin-Watson stat | 1.298988 | | |

**Fig. no.4 Regression estimation results of R & D spending growth, climate change and eco-innovation for EU 28 countries**
*Source: own processing with Eviews Estimations Statistics. tsdec320, tsdcc100, t2020_rt200.*

As can be seen in the attached table test T-Statistical probabilities are lower than the benchmark (0.05) variables eco innovation and climate change and energy, which means that these coefficients are considered significant in statistical terms. According to the graph below (fig. no.5), the distribution model variables has an average equal to 0, presents an asymmetry negative (coefficient of asymmetry Skewness is less than zero), which means that the influence of variables in time of a trend lowering and Kurtosis coefficient is greater than 3, which means that this distribution is leptokurtică. How Jarque-Bera test probability associated is lower than the reference level, it follows that the series is not normally distributed.

By exemplifying these results, we point out that the increased investment in R & D governments, we can turn with small steps toward achieving the goal of sustainable development. Of course that coordinates are many and the mall steps to sustainable development include a lot of other ideas, but this paper wanted to highlight the importance of researching the implications of governments in this direction, showing the clear binomial, Govern-civil society.

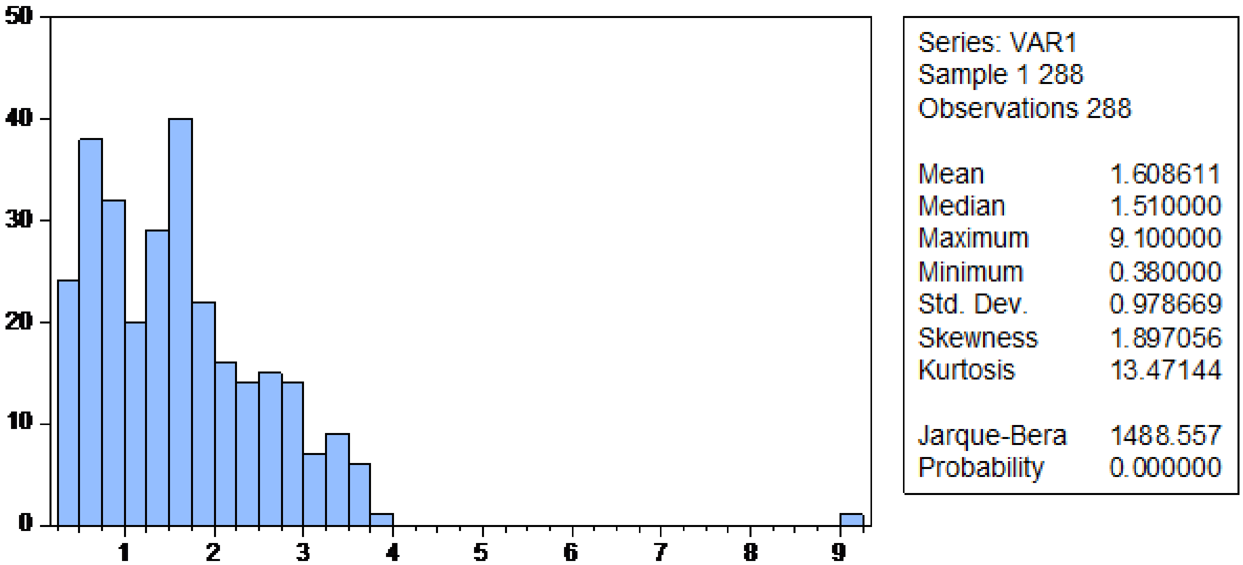


**Fig. no.5. Histogram- Normality Test**
Source: own processing with Eviews Estimations Statistics

| Correlations | | | | |
|---|---|---|---|---|
| | | Eco-innovation index | Greenhouse gas emissions intensity of energy consumption | Total R&D expenditure Code % of GDP |
| Eco-innovation index | Pearson Correlation | 1 | -.330** | .606** |
| | Sig. (2-tailed) | | .000 | .000 |
| | N | 288 | 288 | 288 |
| Greenhouse gas emissions intensity of energy consumption | Pearson Correlation | -.330** | 1 | -.337** |
| | Sig. (2-tailed) | .000 | | .000 |
| | N | 288 | 288 | 288 |
| Total R&D expenditure Code % of GDP | Pearson Correlation | .606** | -.337** | 1 |
| | Sig. (2-tailed) | .000 | .000 | |
| | N | 288 | 288 | 288 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | | |

*Source: Own processing on SPSS. tsdec320, tsdcc100, t2020_rt200.*

In the present situation, the Pearson coefficient of 0.606 indicates a strong correlation between the frequency and costs of research and development and innovation Eco-innovation. We can clearly see that there is a strong correlation between the two variables. We note that the correlation is significant at the 0.01 level, and also to the other two variables, -0.337 betwen total R&D expenditure % of GDP and Greenhouse gas emissions intensity of energy, and also, 0,330 between Eco-innovation index and Greenhouse gas emissions intensity of energy consumption. This think, validating this hypothesis initially formulated.

## 6. CONCLUSIONS

For the timeframe under analysis, the changes in R&D and innovation expenses, at the level of the state members of EU28, show the convergence of the economies towards environmental regulations and the attempt to achieve fiscal harmonisationon issues related to environmental protection. The empirical analysis is based on the regressions of the two indicators, namely, the government , expressed as R&D, innovation and development spendings and the sustainable development represented by eco-innovation indexand the intensity of greenhouse gas emissions. The results of the regression coefficient and the correlation analysis, show that both indicators are directly correlated, and an increase in the share of R&D and innovation expenditures should influence the evolution of the sustainable development in EU countries. The analysis performed proves a significant relationship between the two variables, namely the governments and sustainable development. For the future, the environmental laws should support the governmental role in this direction, empowering both the policymakers'approach and the civil society, as a whole, since we talk about a new important dimension called social responsibility.

We can easily notice that an essential condition to fulfill the objectives of sustainable development is the settelment of several principles that allow the incidence of an appropriate mix of macroeconomical policies that ensure the sustainability of material resources and energy. As a matter of fact, beside social demographic, technological and legal factors, the political factors play an important role. The governmental policies and strategies set priorities for local authorities. Technically speaking, the political dynamics of executive power can perturb the activities of local authorities and may prevent the settelment of a system, characterized by market economy and democratic policies. Therefore, the European Commission has competence in all areas related to services, including fiscality, as EU should maintain a sustainable and stable economic growth through a predictable tax system, to ensure the appropriate conditions for a development, that responds to all present needs, without harming the resources belonging to the next generations.

The current research could be extended by taking into account the status of healthy public finances and fiscal responsibility, reflecting that in the context of the consolidation of healthy public finances, one can truly refer to sustainable development and express concerns on social inclusion, demographic changes and public health. It is important to have in mind, that the correlation goes both ways.Even if it does not check the cause and effect relationship, sometimes the cause and effect can be identified through local reasoning, as it is the case of this research.

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# CULTISM AND EDUCATION IN NIGERIAN TERTIARY INSTITUTIONS: POLICY IMPLICATIONS

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**Abstract**: *The existence of cultism and cults in our universities poses continuous threat to life and peaceful co-existence.Unfortunately, in spite of the provision of five-year jail term for membership of campus cults, cultism continues to assume a major social menace and a serious obstacle to peace and harmony in many tertiary institutions in Nigeria. Whereas cult groups and activities were more purposefully oriented at the initial stage, they have become destructive and violent in the recent past, especially from the eighties. Admittedly, the menace has attracted the concern of all stakeholders within and outside the educational system, and its increasing negative impact on education evidently manifest in disruption of academic activities; programmes/calendars, insecurity on the campus, destruction of school infrastructural facilities, loss of lives, etc. More so, students who are members ofcult groups frequently have problems with their studies, as they have to abscond from school during period of cult clashes for their safety and incur extra year(s) for failure to write final exams as well as meet other requirements for graduation as a result of fear of being attacked by rival cult members. Meanwhile, reliable sources reveal that no less than 53 cult groups exist in the Nigerian higher educational system. This threatening and awful situation in Nigerian tertiary institutions forms the thrust of this paper. It further concludes that probable factors that motivate the emergence and sustenance of secret cults/cultism in the educational system are traceable to the general moral decadence in the society, the value system in the society, the learning environment and poor educational administration and management. The study finally offers policy recommendations thatprovision of enabling learning environment; more parental responsibility and training; collaborative efforts of tiers of government and stiffer sanctions; student orientation and re-orientationby stakeholders in the Education sector are key in curbing cultism rate in Nigerian tertiary institutions.*
**Keywords**: *Cultism, Education, Tertiary Institutions, Policy, Students*

## 1. INTRODUCTION

Before the mid-seventies, the offer of a university place in any Nigerian University to study for any degree was an honour. It was an achievement both for the prospective under graduate and his parents. Indeed, such feat was worthy of celebration as there were not many universities then, and it was only the best and the privileged few that were admitted into the few available places. That was in the days of the "Ivory Tower" concept of the Universities, when universities were repositories for high ideals and enviable academic traditions (Itedjere, 2006).

Today however, the story is different because cultism has invaded and has come to stay in tertiary institutions in Nigeria. Capturing the widening scope of the menace of cultism and its accompanying inimical effects, Eneji (1996) in Adewale (2005) asserts that cultism with its attendant violence, torture, suppression and unwarranted intimidation perpetrated by cult groups, has spread beyond institutions of higher learning to secondary schools in Nigeria. Admittedly, the quality of higher education and learning depends not only on the content of teaching and curricular but also on the life on campus. In many Nigerian Universities, criminality, unrest and insecurity seriously harm the study situation. In Nigerian universities, a specific form of such social problems is the presence of secret cults. According to Itedjere (2006), the phenomenon of secret cult is not necessarily new in the Nigerian society. What is new perhaps is their character and methods of operation. Their origins, activities and character are determined by the contemporary social problems and the prevailing social economic exigencies of the time.

Many students join cult groups not being aware of the negative effect of membership of cult on their learning. Also, many students perceive the impact of cultism on learning as high and some students perceive cult members as frequently having problems with their learning. Indeed, the existence of cult groups and its activities have been on the increase in our tertiary institutions leading to disruption of academic programmes and activities, loss of lives, insecurity and destruction of infrastructures. The activities of cult groups have also led to the killing of innocent students and staff in various tertiary institutions and in some cases, it has led to the closure of schools (Echekwube, 1999).

Meanwhile, Olabisi et.al, 2003 (as cited in Arijesuyo and Olusanya, 2011) maintain that despite Decree 47 of 1989 which provides for afive-year jail term for anyone belonging to campus cults, cultism continues to assumes a major social menace and a serious obstacle to peace and harmony in many tertiary institutions in Nigeria. According to them, although some university authorities through administrative panels of inquiries have suspended or rusticated some students for participation in cult-related activities and violence, on the whole, cults have waxed stronger, possibly because findings have shown that highly placed university staff and other prominent members of the society are known to belong to secret cults, and often serve as “god fathers” to these young cult members.

It is against this background that this paperengages the critical questions on the origin, perspectives and causes of cultism, evidences in Nigerian tertiary institutions, impact on learning and policy recommendations.

## 2. CONCEPTUAL CLARIFICATIONS

Echekwube (1999) traces the origin of the term cultism to the Latin word "*cultus*" which means worship and is actually associated with the worship of one God or Supreme Being. The word 'cultism' originated from the Latin word 'Occukre' which denotes something hidden, occultic, concealed, enigmatical, mysterious, mystical, etc. Orukpe (1998: 1) notes that “Cults are a group of people who shareand propagate peculiar secret beliefs divulged only to members”.

Advancing further, Lalich and Langone (2006) made the following remarks about the behaviour of cultists – the group displays excessively zealous and unquestionable commitment to its leader and regards his belief system, ideology and practices as the truth.Cultism is generally believed to be a deadly engagement in ritual practices.Subscribing to this view, Ajakaiye (2002:164-165) notes that:

*Cultism may be viewed as a system of beliefs binding together people of the same interest for the purpose of promoting and defending the common pursuit. The 1999 Constitution of the Federal Republic of Nigeria, in Section 318 (4), bans a secret society defined as a society or anassociation not being solely, a cultural or religious body that uses secret signs, oaths, rites or symbols:i. Whose meeting or other activities are held in secret; and ii. Whose members are under oath, obligation or other threat to promote theinterest of its members or to aid oneanother under all circumstanceswithout due regard to merit, fair play orjustice, to the detriment of the legitimateexpectation of those who are notmembers.*

X-raying the concept of education, Ukeje (1979) conceives education as a process, a product and a discipline. Meanwhile, Whitehead (1932) and Akinpelu (1981) maintain that education goes beyond knowledge acquisition to the application of such. According to Moore (1978), the concept may be seen as a process involving activities such as teaching, persuading, motivating, learning, and examining programmes in schools and college.

However, UNICEF (2000: 4) states that quality education involves “learners who are healthy, well-nourished and ready to participate and learn, and supported in learning by their families and communities; environments that are healthy, safe, protective and gender-sensitive, and provide adequate resources and facilities; content that is reflected in relevant curricula and materials for the acquisitionof basic skills, especially in the areas of literacy, numeracy and skills for life… outcomes that encompass knowledge, skills and attitudes, and are linked to national goals for education and positive participation in society.”

## 3. THEORETICAL FRAMEWORK OF ANALYSIS

The socialization theory, using the learning by imitation model of socialization, is used as the theoretical framework for analysis.

According to Eguavoen (2006), socialization is the process through which cultural values, norms; behaviours and skills characteristics of a society are transmitted to its young and potential members. This is the principal means by which any society preserves its rich cultural heritage and achieves basic social conformity which are important means for ensuring their survival. Aweriale (2005) explains that learning termed learning by imitation is also known as Bandura’s theory. Learning by imitation deals with learning by observation. This is a rapid form of learning by students and most behaviourare learnt by imitation.

The imitation model of socialization is one is which learners themselves learn roles, duties and other values by copying and approximating the expected standards of behaviour of their peers, and most importantly of those they wish to be like- significant others (Eguavoen, 2006). These significant others could be celebrities, actors, actresses, individuals within the neighbourhood or community, political figures, etc. Analytically, learning and cultism can be carried out though the agencies of socialization like the peer group and the school for example. The school, an agent of socialization teaches the child or even young adults quite a lot of experiences through learning. Teachers, non-academic staff and other various arrangements within the school setting assist to socialize the individual. The school as an agent socialization has both formal and informal aspects.

The peer group as agent socialization is very important is socializing the individual. It should be noted that it is not in all cases peer socialization is beneficial. It can be dysfunctional, especially in cases where values that contradict those previously taught are being propagated- cultism. The decisive role peer group influence plays in instilling social values seems to be in consonance with the maxim, "show me your friends and I will tell you who you are". This becomes imperative when viewed against the biblical injunction of I Corinthians 13:55(NIV) which states that "… *Bad company corrupts good character*".Indeed from observations and experiences, most people (ex-cultists) confessed that it was their peers (friends/roommates) that lured then to join secret cults (Echekwube, 1999).

Drawing on the above, learning in various educational institutions becomes important in the acquisition and utilization of knowledge for the transformation of the individual and the society. Such learning can take place through the agent of socialization- the school, whether formally or informally. Again, learning in such institutions can be impeded by cultism, which develops out of the process of socialization. Cultism does not exist in a vacuum but comes about through the process of socialization and the agents of socialization. The origin of cultism in Nigeria is traced to the educational institution (University of Ibadan), which is a social institution and an agent of socialization through the peer group which is also an agent of socialization. All these come as a result of learning by imitation.

From the foregoing, it can be deduced that the social institution *vis- a –vis* socialization plays a vital role in the society. So learning and cultism as a process of socialization to a great extent have impact on the individual, the social institution (s) and the society.

## 4. EMPIRICAL REVIEW

### Origin of cultism in Nigeria

The origin of cultism in the Nigerian tertiary institutions can be traced to the Pyrates Confraternity founded by the Nobel Laureate, Wole Soyinka and others at the University College, Ibadan (now the University of Ibadan), in 1953. The confraternity also known as National Association of Sea Dogs, with the skull and crossbones as its logowas non-violent and whose activities were not in secrecy had its main objectives as to fight non-violently but intellectually and effectively against the imposition of foreign conventions; revive the age of chivalry; and engender lasting solution to the problems of tribalism and elitism (Adewale, 2005).In a similar vein, Echekwube (1999) remarks that cultism has existed in our tertiary institutions for over three decades. Whereas they were more purposefully oriented at the initial stage, they have become destructive and violent in the recent past, especially from the eighties.

According to Ekeanyanwu and Igbinoba (2007), reliable sources reveal that no less than 53 cult groups exist in the Nigerian higher educational system today. Such groups include: Air Lord, Black-Axe, Black Beret Fraternity, Black Bra, Black Cats, Black Mamba,Buccaneers, Cappa Vendetta, Daughters of Jezebel, Eiye Confraternity, Green BeretFraternity, Hard Candies, Jurist, KKK Confraternity, Knight Cadet, King Cobra, Lucifer Knights, Mafians, Maphites, MgbaMgba Brothers, Musketeers Fraternity, Neo-Black Movement, Oasis of the Silhouette; Ostrich Fraternity, Panama, Pyrates Confraternity, Red Berets, Red Sea Horses, Royal Queens, Sea Dogs, Soko, Sun Men, Temple of Eden Fraternity, Ten Angels, The Amazons, The Apostles, The Barracudas, The Canary, The Dragons, The Frigates, The Himalayas, The Lynx, The MafiosoFraternity, The Scorpion Fraternity, The Soires Fraternity, The Vikings, The Walrus, Third· Eye Confraternity, Trojan Horse, Vipers, Viqueens, West End, White Angels arid a host ofothers.

Undoubtedly, the probable superior influence of cult members on campuses and accompanied impunity with which cult groups wreak havoc on Nigerian campuses as they maim, kill and destroy targeted persons and property with sophisticated dangerous weapons and materials such asrifles, machetes, axes, acids, charms, etc, whenever they strike have forced most youths to acquire membership for safety and sense of belongingness as well as raised serious alarm. The words of Obada-Obieh (2002:29-30) are instructive thus:

*Until very recently, enlightened or educated youths would have little or nothing to do with 'cult' except for academic research purpose since it was considered as* some *ritual ceremonies performed secretly in the bush or in* some *dark places by* some *primitive and barbaric group of people... . Youths now regard membership of secret cults as mark of pride, recognition and acceptance among their peer groups, especially in the tertiary institutions of learning.*

**Evidences of cultism in Nigerian tertiary institutions**

According to Ekeanyanwu and Igbinoba (2007), the trend towards cult violence began in the early 1980s. The nation delayed its decision to rise up to the challenge and deal with the problems associated with campus violence; the decision came up not until it was over 15 years since the inception of campus violence and nine years since the Pyrates Confraternity called the nation's attention to the trend of campus violence.Corroborating this assertion,Okwe (2002) notes thatthe dawn of the 1980s significantly marked the activities of Confraternities as virulently violent and secrecy as their manner of operation and lifestyle. Their activities included “dealing” with any non-members who snatched a member’s girl friend or “sugar daddy” (in case of female cultists) as well as “settling” lecturers in cash or kind, with female cultists operating prostitution rings and having their photographs displayed in popular hotels.From this period, secret cults sprang up in the country like mushrooms with their activities assuming more devastating and dangerous dimensions. Hence, cultism and cult groups became a serious threat to institutions of higher learning, parents and guardians, and successive military and civilian administrations.

One of the earliest reported secret cult violence occurred at the University of Nigeria, Nsukka in 1985 when a non-cult student incurred the wrath of another student, who was a cult leader, for “snatching” the latter’s girlfriend. It was also reported that sometimes in 1991 a student at the University of Port Harcourt was beheaded during a feud between cult members. In 1993, fifteen students of the University of Port Harcourt were jailed for terms varying from five to thirty years for belonging to secret cults. They were jailed by the miscellaneous offences tribunal which sat at Enugu, Anambra State in Eastern Nigeria (Adewale, 2005).

Another report was of Ambrose Alli University. Also at Delta State University in Abraka, the activities of secret cult groups resulted in the death of a Principal Assistant Registrar and his wife. Two secret cult groups – the Black axe and the Bucaneers were engaged in what appeared like an all-out war. On 10th July, 1999, armed cultists stormed a male hostel at ObafemiAwolowo University brutally murdering five students. Many pages of the Nigerian Tribune of 24th July, 1999 were devoted to the extensive reporting of the event.

Again, the students of Delta State University in Abraka, carried out a massive destruction of some parts of the campus on 7th September, 2002. The Vice Chancellor's lodge was burnt in the process, so also was the department of linguistic building. On 5th August, 2002 a 300 level economics student was shot and slaughtered at the Dalimore area of Ado-Ekiti, the Capital City of Ekiti State. Additionally, the source of the crime has been traced to cultists. Incidentally the slain student was the only child of his parents. At the University of Jos in Plateau State, two undergraduates were callously shot dead while they were deeply asleep. This happened when some cultist groups were engaged in a battle of supremacy during the "Miss UNIJOS competition" (Olubusuyi, 2002; Koleoso, 2002; Shobayo 2002 as cited in (Adewale, 2005)).

Findings of the study conducted by Ibn-Godidi (2008) reveal that an average total of 23,650 Nigerian undergraduates were indicted of cult-related offences and were either suspended or rusticated from the university between 2001 and 2008.

## 5. IMPACT OF CULTISM ON LEARNING

Literature is replete with all manner of overt and underground activities of fraternities, sonorities and delinquent sub-cultural groups who go by all kinds of names like cults, sects, etc. in many parts of the world. Their origins, characters and activities are determined by prevailing social, political and economic exigencies of the time (Itedjere, 2006). Most literature on cultism and its impact on learning are written by academicians in the educational system, non-academic book authors who have sometimes examined and studied the finances of groups, writers who once were members of purported cults, and articles written by people in newspapers, journals, magazines, etc.

According to Oju (1991), more than any other thing the greatest crisis facing Nigeria University today is cult violence. He said in the past universities were closed down as a result of students riot or teachers strike. Lately however, a growing number of universities have been plagued by cult activities.Similarly,Eitek (1990) pertinently remarks that the menace of secret cult both on campus or school compound is tantamount to returning man to the state for nature where life is nasty, brutal and short. He noted that under this condition it becomes impossible to attempt an attainment of educational aims and objectives where the deplorable conditions become manifest: students and teachers are physically injured by cult members; teachers and students are under constant fear;

cult members destroy facilities of the school while clashing with each other; activities of cults disrupt academic, social and recreational events in school; members of the school community have their movement restrained even in schools and in the night because of actuates.

Furthermore, Azelama (2006) affirms that cultism, like corruption, is increasingly a perennial and agonizing problems in administration of tertiary institutions in Nigeria. Cultism has systematically infested these institutions to the extent that both cultists and non-cultists within the institutions and their environment have lost peace. He views the menace as constituting serious obstacle in the effective management of Nigerian universities and further presents an overview of the problems associated with cultism from the perspectives of security problem and student crisis, which invariably affects learning. Commenting on the spate of violence on campus, Olukoya (1994) notesthat its escalating rate appears unchecked as campus cults have become heartless and callous that students and teachers no longer feel safe to pursue learning under an ideal happy and healthy environment.

More so, Ehondo (1993) opines that so many unsuspecting students have been lured into joining secret cult societies through deception. Such deception includes becoming one of the untouchable. Once you are a member of secret cult, owning the most beautiful girl on campus, passing your exams without study, etc. becomes attainable. For those who are lured through such lies there is no apology because it is only a highly mischievous, untrained and morally deficient student that would subscribe to such lies. For what manner of student are you that membership of a secret cult will enable you to short circuit studies? The fact is that there are no students without studies. The horrors of cultism and its consequent malfunction are frequently evoked, condemned and completely denounced by all and sundry (Echewkube, 2005). He noted that the major difference between campus unrest and that in the larger society is that the former has become too frequent and rages from campus to campus and none knows when it falls on a campus, whereas the latter is often expected and awaited. While it is known that secret cults had led to the disruption of academic calendars in our tertiary institutions in the past and led to the termination of the lives of both cultists and innocent students and lecturers in the past, their disruptive tendencies have taken a new dimension in recent times.

Again, Echekwube (1999) argues that violence on our campuses is a reflection of what is obtainable in the larger society. The existence of secret cults in our universities poses continuous threat to our peaceful co-existence in this country, Nigeria. Thus, cultism is seen as a threat to life, destruction of innocent lives, disruption of university calendar and programmes, uncertainty of events. According to Itedjere (2006), University and other tertiary institutions in Nigeria have been brought under siege and virtually turned upside down by the heart throbbing activities of student’s secret cults. These clashes are generally inimical to the traditional serenity and peace that should characterize any learning environment, an environment in which the proper socialization and the inculcation of the right values and attitudes could effectively take place as enunciated in the National Policy of Education. Also according to him, secret cult activities have been so widespread on campuses of institutions of higher learning in Nigeria that the authorities have been given a lot of concern. For several occasions, the academic calendar of many institutions has had to be disrupted as a result of the mayhem by secret cults. In fact, the Decree 47 of 1989 was informed by the intolerable activities of secret cult on campus.

As a result of this, one might ask, when do the students have time to read for the programmes they have enrolled in? Again, what are the authorities doing to save the situation? Well, the qualities of graduates regularly turned out by the institutions provide answers to the first question. And the fact that some university officials have been attacked and their properties set ablaze should provide answers to the second question. They are helpless. Furthermore, as a result of all these violent crises in campuses many campuses have been on siege with many students held hostage psychologically. Again, when cult members have identified their prey, they trail them, from the hostel to the classrooms, to the library and even to eating houses where they forced "Jambites" to "perform" or be declared "missing in action"; for the female students they get so scared that they even become afraid to leave their hostels for the library even the reading rooms unaccompanied by two or three friends. The end result is that academic work has been restricted to daytime only. Only a small percentage of the daily workload could therefore be adequately covered by the students especially since their overcrowded hostels are not conductive for serious learning.

The overall effect is a general fall in the standard of education in Nigerian institutions of higher learning. The prevailing atmosphere of insecurity is further heightened by widespread allegations of gunrunning among secret cult members.

## 6. CULTISM IN NIGERIAN TERTIARY INSTITUTIONS: PERSPECTIVES AND CAUSES

Langone (1996) gave three models regarding joining a cult. They include: the deliberative model; the psychological model; and the thought reform model. Under the "*deliberative model*", people are said to join cults primarily because of how they view a particular group. He noted that this view is most favoured among sociologists and religious scholars.

Under the "*psychological model*", popular with some health professionals, individuals choose to join for the fulfillment of subconscious psychological needs.

The "*thought reform model*" posits that people join cult not because of their own psychological needs, but because of the group's influence through forms of psychological manipulations. According to him, mental health experts who have more direct experience with large number of cultists tend to favour this view.

Chambers (1998) argued that cults are groups that often exploit members psychologically and or financially, typically by making members comply with leadership's demands through certain types of psychological manipulation, popularly known as mind control, and through the inclusion of deep-seated anxious dependency on the group and its leaders. Singer and Lalich (1995) gave the following as ways people can leave a cult:

- On their own decision (walkaways)
- Through expulsion (castaways)

- By intervention (exit counseling, deprogramming)
- By rebellion against the group's majority or leader

On the causes of cultism in tertiary institutions, Nigeria inclusive, the study by Chebli, Kallon, Harleston and Mansaray (2007) reveals that the major factors leading students to joining these cult groups are attributed to peer group influence, a sense of belonging, for political affiliation, for money, for job opportunity and to contend with administrative decisions which they consider bias. Furthermore, involvement in violent confrontations is basically forpolitical supremacy during electioneering in student union politics. Drug abuse, alcoholism and indiscriminate sex are also prevalent in cult activities.Members of these cult groups believe that there is an obvious change in their status afterbecoming members. These changes include popularity, ego boasting, sense of belonging andboldness.

Given the foregoing, it has been observed that cultism have impact on learning and the educational system. This impact could easily be identified as disruption of academic calendars/activities, insecurity, destruction of school infrastructural facilities, loss of lives, etc.

## 7. STUDENTS' PERCEPTION OF IMPACT OF CULTISM ON LEARNING

In recent times, Nigerian Universities have been plagued with this disease or illness of cultism. According to a report in one of the Newspapers in 1997, the greatest crisis facing Nigerian University today is cult violence. There have been complains of many students joining cult groups not been aware of the impact it will have on their learning. Many people joint cult groups in order to feel being a man, or because it seems a viable means of economic upliftment or for the reason of proving a point to a rival male (or female) who snatched his girlfriend (or boyfriend) or even because joining a cult seemed synonymous to being in a university. Generally, most people are lured by their friends to join secret cults in order to avoid being oppressed. Very few joined voluntarily because they had desired to join the strong men's group even before gaining admission into the university or some other institutions of higher learning. Some students also joined cult groups in order to be free from academic stress, be able to control girls and be influential in the society (Echekwube, 1999). Such impact of cultism on learning is seen in the disruption of an academic calendar, loss of lives, destruction of infrastructural and learning facilities, and insecurity in the learning environment.

Again, many students perceive the impact of cultism on learning as high. This perception is based on observations and experiences by ex-cultists, non- cultists and the society. Often times inter and intra cult clashes negatively affects learning and students. In most cases, the most common factor of cult violence can be traced to "conflicts of membership by rival cults" and in some cases, cult activities have led to killing of innocent students, disruption of academic activities and closure of school for some period of time. The rise of cultism in most institutions of higher learning was very high especially between 1998-2003 in which a good number of lives were lost to cult activities and also properties and valuables of students were lost during this period. People who were killed in or during inter cult clashes were supposed to have been among the future leaders of this country in different areas of life. Thus, cultism has done more damage to student members and the image of the university than the benefits that are often wrongfully believed cultism confers on its members. Nigeria is replete with sad cases of the lives of the youth cut short in their prime as a result of cult activities.

Furthermore, some students perceive cult members to be frequently having problems with their learning. This perception is based on observations and or experiences by ex-cultists, non- cultists and the academic environment. Some students in period of inter and intra cult activities do not reside in the school community because of fear and some of them have been seen to be having extra years (s) in various higher institutions of learning as a result of fear of attack on them when they are writing their final exams. Also, some students who belong to cult groups use the money they ought to use in their study to pay "dues" and contribute financially to the smooth running of their cults at the expense of their academics. Some cult members have been seen to be involved in cult activities to the detriment of their academics. Such students have been seen to be having extra years (s) in various higher institutions of learning as a result of fear of attack on them when they want to write their final exams.

## 8. CONCLUSION

In early years, the environment of tertiary institutions has been encouraging and peaceful before the coming of secret cult into our institutions. Having thoroughly examined in this research, the meaning, causes and origin of cultism, and the impact of cultism on learning in our tertiary institutions, one would understand that the existence of secret cult in our universities poses continuous threat to our peaceful co-existence. Thus, cultism has been largely exposed in the threat to life, destruction of infrastructures, destruction of lives, disruption of university calendar and programmes, uncertainly about what comes next.

The impact of cultism is not on learning alone as it also has effect on the individual, educational institutions and the society. Therefore, efforts towards its reduction or elimination in the bid to finding a lasting solution to the problem of cultism in our educational institutions at large should take cognizance of the Nigerian society, as the school is a micro Nigerian society. Conclusively, cultism could be reduced to the minimum if only all the stakeholders (government, university administrators, policy makers, parents, lecturers, traditional rules) and everyone in the society could lead by example. If this is done, our schools will be safe and conducive for learning and thus live to fulfill the objectives for which they have been established.

## 9. POLICY RECOMMENDATIONS

Taking into cognizance the menace of cultism and its increasing negative effects on tertiary education in Nigeria as well as the society, the following recommendations are made with a view to curbing the menace of cultism in the educational system:

Provision of enabling environment for learning. To make cultism unattractive and an unnecessary option, there should be improved facilities and living conditions on campuses so as to minimize perceived strain in the social system, which underlies cultism on our campuses. Our institutions should be overhauled in order to be capable of providing for all who live within them and be able to correct the injustices against any student or group of students by peaceful and lawful means.

Parents are urged to committedly give a solid moral foundation to their children as they are their first teachers in their early formative years; the teachers both at the primary and secondary schools are exhorted to consolidate on this foundation by helping the youths to visualize who they are at a more global level, with special reference to what distinguishes them from the lower animals- rationality. Parents should also endeavour to evaluate their children who are in any institution of learning to ensure that learning which ought to transform the child really takes place. This can be done by assessing their performance using their results, practical skills and their behaviour/character if they change positively.

The fight against cultism (secret cults) should start from the larger society by government out-lawing all secret cults like reformed Ogboni fraternity, the Rosicrucian Order (AMORC), the Grail Movement, etc. and then mass action by all Nigerian citizens. The security units in campuses should be completely overhauled and strengthened to ensure proper monitoring of students and to prevent unwholesome situations whereby innocent students are unjustly molested.

The government should introduce capital punishment to those caught involved in cult activities to serve as deterrent to others. In fact, government should move beyond promising and or enacting good policies by putting in place a well-structured institution that would enforce the breach of the law as most wealthy and influential persons in the society are one time cult members or are even members. The instant and capital punishment becomes imperative when viewed against the biblical injunction of Ecclesiastes 8: 11 which states "Because sentence against an evil work is not executed speedily, therefore, the heart of the sons of men is become fully set in them to do evil.

Students should mind the company they keep and choose their friends wisely. Having a cultist as a friend is enough to attract the wrath of rival cultist. Students should be careful and choosy about the social gatherings they attend on or around the campus. Also, students should keep a close watch on their roommate (s) and be alert for strange greetings or slogans like "mess with the best and Die like the Rest", "Blood for Blood". "Might is Right", "Murder is murder", make them cry blood or paper", etc. Furthermore, they should watch out for unusual signs or gesticulations with the hands or fringes.

Finally, campus publications such as newsletters, journals or magazines should be encouraged to publicize the activities of cults as a way of exposing the cults to ridicule some of the fables of the students and staff alike in our campuses. This will help to checkmate their activities and would serve as a deterrent to any person wanting to joint their activities. Thus, Orientation through information of new students and the entire public becomes imperative when viewed against the Biblical injunction of Romans 12:2 which states that "… Be ye transformed by the renewing of your mind that ye may prove what is that good and acceptable …" This is so important because the things which shape a man's mind are what he reads, what he listens to, and the people with whom he associates.

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# LOCAL GOVERNMENT AND CHALLENGES OF REVENUE ALLOCATION IN NIGERIA (A STUDY OF YEWA SOUTH LOCAL GOVERNMENT, OGUN STATE)

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**Abstract**: *The existence of Government primarily to provide services that will make life worth living. Furthermore, local governments as third tiergovernment are created to bring government closer to the people at the grassroots and for transformation of lives at the rural level.The purpose of this paper is to examine local government and the challenges of revenue allocation in Nigeria using Yewa South Local Government as a case study and to probe issues with revenue allocation among tiers of government with focus on the third tier of Government.This study employed both primary and secondary method of data collection.The paper concludes and recommends that state joint local government account should be abolished as it gives state government absolute control over local government.*

**Keywords**: *Local Government, Federalism, Revenue Allocation and Fiscal Federalism*

## 1. INTRODUCTION

Nigeria is a sovereign nation. It operates a federal system of government that is, the federal government, the state government and the local government councils.Agba *et al* (2014), stated that local governments is the third tier administrative structure created in Nigeriato decentralize governance and bring government closer to the people at the grassroots and render social services necessary to engender national development.

The 1976 *Local Government Reform Hand Book* defined local government as: Government at the local level exercised through representative councils established by law to exercise specific powers within defined areas. These powers should give the council substantial control over local affairs as well as the staff and institutional and financial powers to initiate and direct provision of services and to determine and implement projects so as to complement the activities of the state and federal government in their areas, and to ensure, and through devolution of functions to these councils and through the active participation of the people and their traditional institutions that local initiatives and responses to local needs and conditions are maximized (Quadri, 2013).The above assertions necessitate the availability of financial resources for the local government to carry out various functions expected of her by the citizen.

Ideally, under a federation, each tier of government (federal, provincial/state, and district/local) should have assigned taxing powers to raise enough revenue to conduct its operations/administration and provision of public services, and no government should rely on another government for a significant portion of its revenue. The problem with Nigeria's federalism is that most states governments and local governments rely heavily on revenue allocated from the federation account, i.e. revenue collected by the federal government, FG on behalf of the federation (Richard and Eme, 2015).

In view of the above, revenue allocation has remained the most critical policy issue in the local government administration in Nigeria. None of the local government councils in the polity can as a matter of fact survive without a sound financial base. Owing therefore to the development responsibilities place on local governments, there is need for adequate financing of this tier of government. In dealing with this important practical issue, this study, therefore, seeks to examine the challenges of Local Government with respect to revenue allocation in Nigeria. And to limit the scope of this work, the researcher took Yewa South Local Government, Ogun State as the study area.

## 1.2 STATEMENT OF THE PROBLEM

Without any doubt the issue of revenue allocation has remained the most dominant and contentious in the relationship between local governments, as the third-tier of government, and the other two tiers, i.e. the federal government and the states, within the parameters of Nigerian federalism.

In the 1976 Local Government Reform, which drew heavily from the Brazilian experience' and which took firm root in Nigeria, local government was included in the mainstream of the country's intergovernmental fiscal relations, with a defined share of the federation account, among other statutory provisions and administrative arrangements (Akindele and Olaopa, 2002).

The reform, that was referred to as great and a real breakthrough gave prominence to local government making it possible for them to have legal entities which in turn entitled them to perform certain functions that have since been contained in the 1979, 1989 and 1999 Federal Republic of Nigeria constitution. Even though the reform clearly articulated the idea of a three- tiered federation in Nigeria, its consequence recognition of revenue sharing and administration arrangement has led to many problems which, according to Adamolekun can be broadly classified into six categories intergovernmental conflicts, structural organizational problems, financial problems, shortage of qualified manpower, the place of traditional authority in local government and political and bureaucratic corruption (Murana, 2015).

These problems largely remained un-resolvable within the Nigerian political landscape even during this period of the fourth republic. These problems have been more compounded by the 1999 constitution which makes the institution of local government in Nigeria (particularly in its creation and control) a residual matter for state governments. However, of these problems faced by local government in Nigeria, it is quite clear that the most recurrent ones are finance and sizeable mismatch between their statutory functions and responsibilities; the flow of financial resources available to them; and constraining limits of their tax-raising powers or fiscal jurisdictions (Murana, 2015).

Given the associated rising cost of running local government, that is provision of secretariats, staff salaries and allowances rental and buildings, provision of utilities and increasing outlays on maintained and new projects, statutory allocations to state and local government together with internal revenues have become grossly inadequate. It is in the light of the economic growth process in Nigeria has not been utilized.

Hence the need to examine empirically whether revenue allocation formula adopted in the past has had any meaningful impact on the national development. What are the challenges facing local government on revenue allocated to them? Is there solution to those problems? The issue of revenue allocation in Nigeria is a fundamental one that border on promotion of national unity and rapid national development.

## 1.3 OBJECTIVES OF THE STUDY

The main focus of this study is to critically analyze challenges of revenue allocation in local government of Nigeria, using Yewa South Local Government as the study area.

Challenges of Revenue Allocation in Local Government Administration in Nigeria

Possible Solutions to challenges facing Revenue Allocation in Local Government Administration in Nigeria.

## 2. LITERATURE REVIEW

### Meaning of Local Government

Many scholars define local government differently. This is as a result of varied perspectives on the actual role of local government which differ from one environment to another. However, local government can be defined as government at the local level exercised through representative councils established by law to exercise specific powers within defined areas (Local Government Reform Handbook, 1992).

According to International Union of Local Government Authorities (IULA), Local Government is defined as the level of government with constitutionally defined rights and duties to regulate and manage public affairs which are also constitutionally defined for the exclusive interest of the local population (Abe & Omotosho, 2014).Local governments are the third tier administrative structure created in Nigeria to decentralize governance, bring government closer to the people at the grassroots and render social services pivotal in engendering national development. They are purposefully located and responsible for the governance of about 70 percent of the estimated 152 million people of the Nigerian population. Thus, they are said to be in a vintage position to aggregate and articulate the needs of the majority of Nigerians and facilitate rural development through the application of the needed financial and human resources in their operations (Agba *et al*, 2014).

## 2.2 FEDERALISM AND REVENUE ALLOCATION IN NIGERIA

Federalism simply refers to a system of government where there is constitutional division of power between two or more levels of government. Federalism, according to (Anyadike, 2013) refers to a political system where there are at least two levels of government. In such cases, there is the juxtaposition of two levels of power of a central government otherwise called the federal government and other states labeled variously as states, regions, republics, cantons or unions.Akindele and Olaopa (2002) opined that, one of the primary features of a federal system of government is the assignment of functions between the various components of government. This also forms the basis for the determination of revenue rights and the delimitation of tax-raising powers, which constitute the genesis Of Intergovernmental Fiscal Relations (IGFR). Most constitutional arrangements in federal systems classify the powers and responsibilities into exclusive, concurrent and residual legislative lists, as is the case in Nigeria.

The basis of this classification can be historical, political or economic, among otherconsiderations. Thus, it is generally accepted that the assignment of functions among federatingunits should be organized in the following ways:

- Functions which can be more efficiently performed by the federal government than lowerlevels of government should be assigned to the former (i.e. be placed in the exclusivelegislative list). These include national defence, external relations (including borrowingand external trade), banking, currency, nuclear energy, etc.
- Functions whose benefits are more local than national but with the possibility of spill-over effects should be placed in the concurrent list. Such functions include industrial,commercial or agricultural development, post primary institutions, health care, etc.
- Functions which are purely local in character, in the sense that the benefits accrue, in themain, to limited geographic areas within the country, are usually assigned to localauthorities. Such functions would include the establishment and maintenance of markets,car parks and public conveniences, refuse disposal, primary education and theconstruction and maintenance of local roads and streets.

It should immediately be pointed out, however, that it could be difficult, if not impossible, to putmost of these functions into watertight departments. This fact underlies the principle ofcooperation within federating units in the performance of a number of functions.

Akujuru (2015) stated that, revenue allocation in federal system of government involves two basic schemes. The first implies the vertical sharing between the federal or inclusive government and other tiers of government. The subject of this sharing scheme is the federally generated revenue, such as loyalties, export duties, import duties, mining rates etc.

The second principle of revenue sharing is the horizontal revenue sharing arises out of variations from the revenue generation capacities of component units. The logic is that, in areas where the revenue capacity is high, a relative higher tax is imposed vice versa to ensure stability. This transfer is called “equalization transfer”. The implication is that high taxation in relatively low revenue generated areas will drive away business investments and also cause further depression of the economy of such areas. To avoid this, the federal government has to inject more funds to such areas. To avoid this, the federal government has to inject more funds to such areas to create stability (Akujuru, 2015).

### 2.2.1 FISCAL FEDERALISM

In all federal systems, there is usually "resource sharing" among the three levels of government- the federal, states and local government called intergovernmental fiscal relations. Intergovernmental fiscal relations imply fiscal federalism. Fiscal federalism is essentially about the allocation of government spending and resources to the various tiers of government. The evolution of Nigerian fiscal federalism derives from economic, political/constitutional, social and cultural developments which have influenced the nature and character of intergovernmental relations.

According to Sharma (2005) in Anyadike (2013), fiscal federalism is a set of guiding principles or a guiding concept that helps in designing financial relations between the national and sub-national levels of the government, fiscal decentralization on the other hand as a process of applying such principles. This is perhaps why Ekpo (2005) averred that in practicehowever, there exist some degree of decentralization in what is discernible in a federal states hence among the different levels of government, fiscal arrangement must be worked out to ensure fiscal balance in the context of macro-economic stability, and this fiscal arrangement is referred to, in a federal structure as fiscal federalism or intergovernmental fiscal relations. Sometimes both are interchangeably used (Anyadike, 2013).

The institutional arrangement adopted by a federal state for the purpose of intergovernmental relations finds corroboration in the work of Nwankwo (2007) who asserts that the concept of administrative intergovernmental relations which focuses on the relationship between officials and structures that exist for administrative purposes, suggest that applicability of the concept of intergovernmental fiscal relations relatively in all cases hence he had conceptualized intergovernmental fiscal relations as the system by which revenue is collected and shared among the units and that a federal constitution, as a matter of necessity, gives rise to fiscal federalism (Anyadike, 2013).

### 2.2.2 REVENUE ALLOCATION IN NIGERIA

Revenue allocation in Nigeria, a central theme in government has a chaquered historical antecedent. Many commissions/committees have been set-up at different times in the Nigeria national history and were saddled with the responsibility of examining various fiscal issues and recommend the best principles and formulas in sharing national revenues to meet-up the challenges of the time.

Some of these Commissions/Committees include; the Phillipson Commission (1946), the Hicks-Phillipson Commission (1951), The Chicks Commission (1968, The Raisman Commission (1958), The Binns Commission (1964), The Dina Interim Committee (1968), the Aboyade Technical Committee (1978), the Okigbo Commission

(1980), the Revenue Mobilization Allocation and Fiscal Commission (1989) and various military decrees (revisions) particularly 1970, 1971, 1992, etc. It is worthy of note that all the Commissions/Committees listed above were adhoc in nature except for the Revenue Mobilization Allocation and Fiscal Commission (RMAFC), which was established as a legal and permanent entity to deal with fiscal matters on a more regular basis as the need arises (Lukpata, 2013).

**Table 1 Revenue Allocation Commission and Recommendation of various commissions**

| Commission/Committee/Decree | Recommended Criteria | Other basic features of recommendations |
|---|---|---|
| Phillipson, 1946 | i) derivation. ii) even progress | Balance after meeting central Government's budgetary need allocated to regions. |
| Hicks-Phillipson, 1951 | i)derivation. ii) fiscal autonomy iii) Needs, and iv) National interest | Proportion of specified duties and taxes allocated to regions on the basis of derivation, special grant capitalization, education and police. |
| Chick 1951 | i)derivation ii) fiscal autonomy | Bulk of revenues from import duties and excise to the regions on the basis of consumption and derivation. |
| Raisman 1958 | i)derivation ii) fiscal autonomy. iii) Balance development iv) Need | Proportion of specified revenues distributed on the basis of derivation. creation of distributable pool account (DPA) with fixed regional proportional shares: North 40%, west 31%, east 24%, and Southern Cameroun 5%. |
| Binns, 1964 | Same as above plus financial comparability. | Composition of DPA relative share slightly altered, North 42%, East 30%, West 20% and Mid-West 8%. |
| Diana, 1968 | i)even development ii) derivation iii) need iv) minimum responsibility of government | Special grant account introduced, recommended the establishment planning and fiscal commission. Recommendation rejected. |
| Decree No 13 of 1970 | i)population 50% ii)Equality of states 50% | Export duties states reduced from 100% to 60%. |
| Decree No 9 of 1971 | Same as above | Transferred rents and royalties of offshore petroleum mines from the states to the federal government. |
| Decree No 6 of 1975 | Same as above | Onshore mining rents and royalties to states reduced from 45% to 20%. Remaining 80% to the DPA. Import duties on motor spirit and tobacco to be paid 100% into the DPA. 50 0f excise duties to be retained by the federal Government, 100% to DPA. |
| Decree No 15 of 1976 | Same as above | Regional proportion share of DPA split among the 12 new states, 6 Northern states receive 7% each, East and Western states share in accordance with relative population. |

| | | |
|---|---|---|
| Aboyade, 1977 | i)equality of access 25%. ii) national minimum standard 22% ii) absorption Capacity 20% iv) independent revenue 18% v) fiscal efficiency 15% | Replaced DPA with federation account. Fixed proportional share ot of this account between the federal 57%, states 30%, Local Government joint account created. |
| 1981 Act | Same as above | Federation account to be shared: federal Government 55%, State Government 30.5%, Local Government 10%, special fund 4.5% |
| Decree No 49 of 1989 | Same as above | Federation account to be shared: federal Government 55%, State Government 32.5%, Local Government 10%, special fund 2.5% |
| Danjuma Commission 1989 | Same as above | Equality of states 40%. Population 30%. Social development effort 10%. Tax effort 10%. Land mass%. |
| Decree No 49 of 1989 | i)equality of states 40%. ii) population 30% iii) internal revenue effort iv) land mass v) social Development factor 10% | Federation account to be shared: federal Government 47%, State Government 10%, Local Government 15%, special fund 8% |
| Decree No 3 of 1992 | Same as above | Federation account to be shared: federal Government 50%, State Government 25%, Local Government 20%, special fund 7% |
| 2009 | Same as above | Federation account to be shared: federal Government 48.5%, State Government 24%, Local Government 20%, special fund 7% |

*Source: Otaha, 2010 in Akujuru, 2015*

The current vertical allocation formula which is based on Presidential Executive order is as follows:
- Federal Government – 52.68%
- State Government – 26.72%
- Local Government – 20.60%

While the horizontal allocation formula which captures factors/principles and percentage is as follows:
- Equality – 40%
- Population – 30%
- Landmass/Terrain – 10%
- Internally Generated Revenue – 10%
- Social Development Factor – 10%

For purpose of emphasis, the Social Development Factor comprised of Education (4.0), Health (3.0) and water (3.0) (Lukpata, 2013).

From the foregoing, it is apparent that in any federal state, a formula is usually devised to share the revenue of federation between the federal government and the governments of the component units on the one hand and among the governments of the component units on the other. Revenue allocation is no doubt part of the processes of fiscal federalism. Typically the challenges of fiscal federalism in Nigeria hinge on the equality of the expenditure assignment and revenue-raising functions amongst the three tiers of government (Akujuru, 2015).

## 2.3 CHALLENGES OF REVENUE ALLOCATION IN LOCAL GOVERNMENT ADMINISTRATION IN NIGERIA

The Challenges facing local government system in Nigeria are no doubt enormous. The chief challenge has to do with the shortage of fund. The problem of inadequate funding has remained the biggest problem facing local government in Nigeria. For the management and control of local government finance, the 1999 Constitution of the Federal Republic of Nigeria provides for the establishment of State Joint Local Government Account (SJLGA) in each state of the federation where funds from the Federal Account are lodged before disbursement to the local government councils in the state. This arrangement has been hijacked by state governments to starve local governments in their jurisdiction the needed funds for project implementation and rural development (Agba *et al*, 2014)

This point is aptly acknowledged by Mbam, the Chairman of the Revenue Mobilization Allocation and Fiscal Commission (RMAFC) when he observed that information at the disposal of the Commission show unethical practice in the disbursement of funds from the State Joint Local Government Account in various states of the federation. As he maintained, allocations from the Federation Account, most times do not actually reach the Local Government Councils. There are numerous allegations of manipulation of the Account at the point of disbursement. States hardly make their own contributions as stipulated by Section 162 (7) of the Constitution of the Federal Republic of Nigeria. In view of the above challenges, it is the position of the RMAFC that Local Governments should be granted fiscal autonomy by paying statutory allocations from the Federation Account directly to their coffers in which case the State Joint Local Government Account should be abolished through appropriate reforms (Agba*et al*, 2014).

The situation is made worse by the constitutional right granted to states to conduct election into local councils. Most state governors have capitalized on this provision to reduce local government to mere extension of their political and administrative domain. In fact, since the governor and other top party leaders, in most cases “put them in office,” the governor believe that Chairmen of local government council owe them a duty to ‘deliver’ whatever their monthly subvention are to them to partake in how they are appropriated (Abe and Omotosho, 2014).

Furthermore, the incidence of corruption, misappropriation and misapplication of funds that has become rampant and endemic at local level is also another critical challenge that the local government is confronted with. The local government staff have been alleged to generally exploit every opportunity in the name of official functions to embezzle government funds (Abe and Omotosho, 2014).

## METHODOLOGY

This study employed both primary and secondary mode of collecting data. The primary source of data was derived mainly from questionnaire and the secondary sources of data used in this paper include intensive library research and content analysis of archival materials aimed at obtaining information from documents such as: records available in the local government under study, text books, journals, reports, lecture notes, seminar presentation, newspapers and the internet materials.

The population of the study is staff strength of the local government under study whichis 360. A sample size of 180 was selected using the simple random sampling, which represent 50% of the study population. There were 10 items in the questionnaire rated with the 5-point likert scale hence, 5(SA), 4(A), 3(UD), 2(D) and 1(SD). Furthermore in analyzing the data the simple percentage statistical tool was used to analyze the questions.

## RESULTS
## 4.1 DATA ANALYSIS

**Table 2 Challenges of Revenue Allocation in Yewa South Local Government, Ogun State**

| S/N | Questions | SA | A | UD | D | SD | Total |
|---|---|---|---|---|---|---|---|
| 1 | Use of State Joint Local Government Account | 69 (38.3) | 75 (41.7) | 18 10.0) | 12 (6.7) | 6 (3.3) | 180 (100%) |
| 2 | Corruption | 93 (51.7) | 57 (31.7) | 12 (6.7) | 12 (6.7) | 6 (3.3) | 180 (100%) |
| 3 | Undue Interference from either State or Federal Government | 84 (46.7) | 72 (40.0) | 12 (6.7) | 6 (3.3) | 6 (3.3) | 180 (100%) |
| 4 | Poor Budgeting and Accounting System | 45 (25.0) | 90 (50.0) | 24 (13.3) | 9 (5.0) | 12 (6.7) | 180 (100%) |
| 5 | Over dependence on Oil as source of revenue to Federation Account | 36 (20.0) | 90 (50.0) | 27 (15.0) | 15 (8.3) | 12 (6.7) | 180 (100%) |

*Source: Field Survey, 2016.*

Table 2 above shows that, use of state joint local government account has been a major challenge facing revenue allocation in local government at 80.0% while only 10.0% disagree. There is also total agreement to the fact that corruption is one of challenges facing revenue allocation affecting local government in Nigeria with 83.3% response. 86.7% agreed that undue interference from either state or federal government is a major challenge facing revenue allocation in Yewa South Local Government. Poor budgeting and accounting system is one of the major challenges facing revenue allocation in local government with 75.0% agreed response and 13.3% undecided. 70% agreed that over dependence on oil as source of revenue to federation account is a challenge to revenue allocation to local government.

**Table 3 Possible Solutions to Challenges of Revenue Allocation in Yewa South Local Government, Ogun State.**

| S/N | Questions | SA | A | UD | D | SD | Total |
|---|---|---|---|---|---|---|---|
| 1 | Direct Federal Allocation to Local Government | 111 (61.7) | 60 (33.3) | 9 (5.0) | 0 (0.0) | 0 (0.0) | 180 (100%) |
| 2 | Expansion of Local Government Tax base | 51 (28.3) | 75 (41.7) | 24 (13.3) | 27 (15.0) | 3 (1.7) | 180 (100%) |
| 3 | Establishment and Maintenance of effective Accounting System | 51 (28.3) | 96 (53.3) | 24 (13.3) | 9 (5.0) | 0 (0.0) | 180 (100%) |
| 4 | Abolition of State Joint Local Government Account | 24 (13.3) | 90 (50.0) | 27 (15.0) | 33 (18.3) | 6 (3.3) | 180 (100%) |
| 5 | Political and Financial Autonomy | 24 (13.3) | 90 (50.0) | 33 (18.3) | 33 (18.3) | 0 (0.0) | 180 (100%) |

*Source: Field Survey, 2016.*

Table 3 above shows the possible solutions to challenges facing revenue allocation in Yewa South Local Government. It revealed that 95.0% agreed that direct federal allocation to local government will be a major solution to problem of revenue allocation to local government while only 5.0% are undecided. 70.0% agreed that expansion of local government tax base will go a long way in providing solution to challenges facing local government on revenue allocation. Furthermore, it is clear that 81.6% agreed that establishment and maintenance of effective accounting system will help in resolving challenges facing local government on revenue allocation. 63.3% agreed that abolition state joint local government account will provide solution to challenges of revenue allocation in local government, 21.6% disagreed and 15.9% are undecided. Hence it seems political and financial autonomy will solve problem of revenue allocation in local government since 63.3% affirm but, 18.3% negates and 18.3% are undecided.

## 4.2 DISCUSSION OF FINDINGS

The essence of this chapter is to present summary of the findings as it was carried out as regards to the subject “Local Government and Challenges of Revenue Allocation in Yewa South Local Government of Ogun State. In the course of carrying out this study, the following analyses were presented as the summary of the finding. The researcher will make some recommendations and then draw conclusion from the research. It was observed from the finding that the use of State Joint Local Government Account is a major challenge facing revenue allocation to local government. It was also observed that corruption at various level of government is a challenge to revenue allocation since corruption at the federal level would have affect total amount accrued to the federating unit and, at the state level, it will denied or reduce amount release from State Joint Local Government Account.

Furthermore, it was observed that lack of effective budgeting and accounting system in Yewa South Local government is another problem facing revenue allocation.

This will conceive misappropriation of the part of signatories to local government account. The findings also revealed that over dependence on oil by all the tier of government is another problem facing revenue allocation in local government administration in Nigeria.

Moreover, the study revealed that direct federal allocation to local government will go a long way in providing solution to challenge of revenue allocation. Respondent also opined that expansion of local government tax base will reduce over dependence on federal allocation, thereby reduce challenges that local government is facing on revenue allocation. Also, it was observed that establishment and maintenance of effective accounting system will reduce challenges facing local government on revenue allocation.

It was observed that abolition of State Joint Local Government Account will provide a platform for effective revenue allocation to local government in Nigeria. The study also revealed that political and financial autonomy will gives local government independence from state and federal government to carry out various functions expected.

## 5 CONCLUSION AND RECOMMENDATIONS

### 5.1 CONCLUSION

The provisions in the Constitution that dictate the power and financial relationship between the various tiers of government, especially the State and the local government are deliberate. They are made to serve as checks and balances; and ensure transparency and accountability, and ensure equitable distribution of national wealth to the federating units, among others, thereby, bringing even development to the federation.

Since the 1976 reforms, however, the councils have been grappling with a plethora of problems, relating, in large measure, to the delimitation of their fiscal jurisdiction and protection of their revenue rights. There has also been a severe erosion of their fiscal autonomy. These, combined with other institutional and structural problems, have rendered them functionally impotent in the areas of revenue allocation and effective service delivery.

It is therefore obvious, that, for any meaningful development to take place at the local level, the States need to recognize the Local government as partners in progress. That is partners in enhancing sustainable rural development through the provision of essential services to improve the Standard of living of the rural populace. And this cannot be without adequate financial resources at the disposal of Local Government.

One of the major problems facing effective discharge of function in Local Government in Nigeria is challenges of Revenue Allocation which arises due to corruption, undue interference from either state or federal government, use of State Joint Local Government Account and Poor Budgeting and Accounting System. This can be solve through direct federal allocation to local government, expansion of local government tax base to reduce overdependence on federal allocation, establishment and maintenance of effective accounting system to eliminate wastage and misappropriation, abolition of State Joint Local Government Account to give political and financial autonomy to Local Governments for effective and efficient service delivery.

## 5.2 RECOMMENDATIONS

Based on the foregoing evaluation of local government and challenges of revenue allocation in Yewa South Local Government of Ogun state, the following recommendations will be important solving the challenges of revenue allocation in Yewa South Local Government and Nigeria in general. State Joint Local Government Account should be abolished as it gives the state Governor/Government absolute control over Local Government fund/autonomy.

Local Government election should be conducted at the same time as other elections into various elective post in the country. The power vested in the State to ensure existence of Local Government Executive has over the years being jeopardized by those power to be. Constitutionally, Local Government should be removed from the control of the State. State should only serve as a mechanism for check and balance to ensure efficiency and effectiveness in the discharge of constitutional duties.

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# INTERNATIONALISATION OF EXECUTIVE PROGRAMMES FOR PUBLIC ADMINISTRATION. A TRANSATLANTIC COMPARATIVE STUDY

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**Abstract**: *The development of the public sector has been influenced by specific characteristics as they pertain to the sector's crucial function of achieving efficient, effective, and equitable delivery of services at all levels of government both in the continental and regional spheres. Generally, the processes of globalization, Europeanization and/or integration impose best innovative practices, and experiences in designing and operationalizing efficient executive programmes in meeting the training needs of the public sector in every country regardless of its varying nature across international or regional boundaries. In this context, the paper aims to analyse and emphasize the general trends of an imminent internationalization process for the Executive Programmes in Public Administration. The research method is based on"Latent Semantic Analysis (LSA)", taking into consideration both the curricula and organization of the programme.*
**Keywords**: *internationalisation of executive programmes, public administration, comparative study*

## INTRODUCTION

The comparative studies on the Master programmes in public administration could be approached independently, as an intermediary level of the national higher education systems or in an integrated manner, in a broader context of comparative studies in the national systems of public administration. The second perspective confirms the important role of human resources training and education specific to public administration within the evolution of national public administrations.

In the context of deepening the process of European integration, strengthening and enlarging the European Administrative Space, the comparative general frameworks are shaped in view to valorise robust models of public administration, able to generalize or extend practices leading to better organization of public administration or enhancement of its efficiency. Thus, the finality of the Master programmes is changing and therefore the specific frameworks of comparative analysis will change.

## 2. BIBLIOGRAPHIC ISSUES CONCERNING THE COMPARATIVE STUDIES IN PUBLIC ADMINISTRATION

Present in studies and field literature of over a century, the comparative studies have approached both the national organization of public administration, its scope, contents as well as specific normative fundamental elements. Half a century ago, Riggs (1962: 10) has tried to make a synthesis about the trends in comparative studies on public administration.

Emphasizing a series of difficulties of that process, the author states that “the first is a trend from normative toward more empirical approaches”. He also sustained “an emergent emphasis on”nomothetic” contrast with predominantly ”ideographic” methods”. Referring to the first trend, the author highlights “the general field of public administration has its counterpart in comparative studies. Indeed, the analysis of alien and contrasting administrative systems has intensified our awareness of the relativity of our own cultural norms and hence the limited relevance of our most prized administrative values”.

The field literature comprises a lot of comparative studies, some of them being studied in the programmes of Bachelor or Master in public administration.

Geva-May (2002) represents such an example, providing a conceptual framework and analysing in a comparative manner a series of cases concerning policies and public administration, insisting on specific methodologies of analysis. Formulating a framework model of public management reform in the context of various types of political-administrative regimes, Pollitt and Bouckaert (2000) accomplish broad comparative analyses, comprising states, national administrations and reforms on several continents, including Australia, North America and of course Europe. The thematic studies of Laegreid and Verhoest (2010) or Bouckaert et al (2010) open new directions in comparative analysis of public administration. The first direction uses comparative frameworks provided by the processes of proliferation, autonomy or performance while the second one reveals a comparative framework based on “coordination of public sector organizations”.

Using a comparative framework based on the structure and organization of public administration, the relational mechanisms and decision-making process, Matei (2009, vol I) achieves a relevant comparative study on public management in Japan and Romania. Heady (2001: 3-4) describing public administration as an area of comparative analysis, makes valid assertions for the end of the $20^{th}$ century: “in the closing decades of the century, two significant proposals for reassessment have become prominent. They differ in essential respects and tend to point in different directions. These proposals are most commonly labelled ‘postmodernism’ and ‘New Public Management’”.

In view of the current study, the direction of postmodernism is more relevant for our proposed methodology, as basis of the comparative analysis. Postmodernism is a designation with a variety of meanings. “The semantic problem begins with the fact that the term itself seems to challenge the common dictionary meaning of ‘modern’ and ‘modernism’” (Heady, 2001: 3).

In public administration, “the most noteworthy contributions to date are Fox and Miller (1994) and Farmer (1995). In view of comparative studies on Master programmes in public administration, a possible point of reference could be provided by Goedegebuure and Vught (1996), presenting an overview and evaluation of a high number of recent comparative studies in the field of political sciences and public administration. The authors insist on the methodological aspects of comparative approaches.

Randma and Connaughton (2005) draw attention on the complex identity of the academic field represented by public administration, triggering major difficulties or even the impossibility of defining an independent border related to other disciplines (see also Rodgers and Rodgers, 2000). Taking into consideration the deepening of the public administration Europeanization as profession, it could be relevant the convergence of the studies in this field. It is worthy to add the principles of public administration deriving from the concept of European Administrative Space, inducing ideas of study and contents in the educational programmes in public administration (Connaughton and Randma, 2002). However the reality shows that the studies in public administration remain, often, in various national contexts. Authors such as Raadschelders and Rutgers (1999) state that “the existence of a multitude of national studies of public administration due to the varying historical and cultural developments of individual countries and the historically rooted differences in the concept of the state” (Randma and Connaughton, 2005: 21).

Therefore, the above mentioned authors as well as other specialists sustain unanimously the fact that there is no European model of education in public administration. However, in our opinion, the developments in the last quarter of century, determined by the processes of Europeanization or European integration have led to a compatibility of the educational programmes in public administration, expressed in the length and name of the studies, the recognition of public administration as independent discipline and curriculum, comprising subjects or groups of subjects in comparable weights etc.

“The dilemma” between divergence and convergence of studies in public administration in the light of Europeanization seems to be a false problem, taking into consideration the lack of a definition for convergence and misunderstanding that it is in fact an evolutionary process which does not necessarily lead to identity of programmes or a European model, strictly designated.

The evolution of the educational programmes in public administration in Central-Eastern European countries reveals arguments in light to support such an opinion. The successive processes of administrative reform of the state and public administration in the above mentioned states, determined by different stages of the European integration, have induced changes also in the educational programmes in public administration.

The evolution of education in public administration in the above states has been very fast. Relative recent assertions influencing the educational programmes in public administration on “a short experience of democratic governance”, “bad reputation of the state in the communist regime” (Randma and Connaughton, 2005) or “unattractiveness of the civil service career, the lack of loyalty of the citizens to the government or true respect of legal and administrative decisions” (Drechsler, 2000) are obsolete, as the respective programmes are organized and performed at European standards in many cases. In fact a series of publications (Matei and Matei, 2013), Nemec et al. (2010), (Matei and Matei, 2009a, Matei and Matei, 2009b) highlight the transformations of the contents and organization of the educational programmes in public administration in the last decade.

## 3. ACCREDITATION INSTITUTIONS AND THEIR ROLE IN COMPATIBILITY OF EDUCATIONAL PROGRAMMES IN PUBLIC ADMINISTRATION

Obviously there are multiple institutions for accreditation of the programmes in public administration, both national agencies of evaluation and accreditation and international institutions such as the European Association for Public Administration Accreditation (EAPAA). For the European programmes, its contribution to creation and consolidation of European Higher Education Area is already recognized.

The central argument in supporting its role in compatibilisation of the programmes in public administration refers on one hand to membership of those institutions to the European Network for Quality Assurance in Higher Education (ENQA) and registration in the European Quality Assurance Register in Higher Education (EQAR).

Since May 2013, EAPAA is accepted by EQAR, as recognition of the procedures and evaluation expertise and also as Europe’s leading accreditation institution in public administration. EAPAA has also been reviewed and accepted by the International Network for Quality Assurance Agencies in Higher Education (INQAAHE), a worldwide association for over 200 organizations active in the theory and practice of quality assurance in higher education. In view of the current study, we shall reveal the impact of EAPAA and NASPAA standards on the contents and forms of the master programmes in public administration.

At least, from the prospect of EAPAA founding documents, the notion “Public Administration” includes: Public Administration, Public Policy or Public Management programmes. At the same time, the same EAPAA founding documents reveal the compatibility of the accreditation criteria and standards. Even EAPAA website emphasizes: “The EAPAA criteria for accreditation are in line with the guidelines of ENQA and INQAAHE and were inspired by the accreditation criteria of NASPAA. In turn, the EAPAA criteria formed an important source for the Standards of Excellence in

Public Administration Education and Training, produced by IIASIA/UNDESA taskforce".

The fact that both EAPAA criteria and NASPAA standards might represent an adequate framework for achieving comparative studies is supported by numerous papers/researches/analyses published by recognized authors concerning the programmes in public administration. Thus, even if the paper of Randma and Connaughton (2005) does not refer to NASPAA standards, their conclusions highlight: "there is evidence of significant influence of foreign partners (in particular from the US and to a much smaller degree from Western Europe) in the development of Public Administration Curricula in several CEE countries".

At the same time, based on NASPAA standards, Ouder and Brower (2010), aiming the public administration from Turkey, analyse "the theory, research and education" in Turkish public administration in comparison with the US one. "In the US setting, the National Association of Schools of Public Affairs and Administration provides guidance on public administration education to converge theory and practice for knowledgeable action, theoretical understanding and mutual learning" (Ouder and Bower, 2010: 132).

At the same time, the above authors state that "public administration as a combination of different theories and practices is concerned with developing four kinds of theories: descriptive, normative, assumptive and instrumental" (Henry, 1995: 21-22).

Other papers – articles or chapters in books- approach in a comparative manner the European and American studies of public administration. Thus, we remark studies by Stillman (1997), Heady (2006), Kickert (2009), Matei and Matei (2013) etc. Studying the lists with the programmes in public administration accredited by EAPAA, respectively NASPAA we draw an interesting conclusion.

Although the series of data obtained do not refer to exactly the same period of time, the first conclusions derive very clear from Table 1.

Table 1. Types of Master programmes accredited by EAPAA* and NASPAA**

| Name Accredited | Master of Public Administration | | Master of Public Management | |
|---|---|---|---|---|
| | No. | % | No. | % |
| EAPAA | 17 | 53% | 3 | 10% |
| NASPAA | 145 | 84% | 1 | 1% |

Source: the authors

| Master of Public Policies | | Master of Public Affairs | | Others | |
|---|---|---|---|---|---|
| No. | % | No. | % | No. | % |
| 2 | 6% | - | 0% | 10[1)] | 31% |
| 9 | 5% | 9 | 5% | 9[2)] | 4% |

Source: the authors

* programmes accredited since EAPAA set up
** programmes accredited in the last year
1) Master in: European Politics and Policies (1), Public Economy and Administration (2), European Studies (1), Public Administration in Governance (1), Strategic Urban Studies (1), City Administration (1), Police Leadership (1), Public Administration and Organization Science (1), Public Sector Management (1)

2) Master in: Science of Management (1); Executive Master Degree (1); Science in International Public Service (1); International Affairs (1); Science in Urban Policy (1); MBA for Business, Government and Non Profit Management (1); Science in Public Policies and Management (1); International Development (1); Public Service and Administration (1).

Table 1 presents a situation partially conclusive concerning the orientation of the Master programmes in public administration in Europe and US. We stated "partially conclusive" due to the different coverage of Master programmes by the accreditation processes (in US, NASPAA comprises 60% of universities) and low number of programmes accredited in Europe.

However, we remark similar preoccupations in creation and promotion of Master programmes, most of them being in Public Administration. The programmes inserted at "Other" reveal similar topics.

The trend of diversification of the Master programmes is higher in Europe (31%) in comparison with only 4% in US.

## 4. SEMANTIC ANALYSIS FOR ANALYZING THE CONTENTS OF MASTER PROGRAMMES IN PUBLIC ADMINISTRATION

The semantic analysis has recorded significant progress shifting from analysis of discourse and literary text to substantiating theories and ontological methodologies with applicability in most social sciences and of course public administration. The applications of so called semantic technologies are more diverse, either referring to learning methods or research methods, artificial intelligence or interoperability of social and political structures etc.

The current level of semantic analysis development emphasizes for each field a specific language, with own syntaxes and vocabularies in view to achieve analysis of contents, form or evolution.

Speaking about applicability of semantic analysis in public administration, we refer both to the public administration as system and contents of educational programmes in this field. Those two parts cannot be separated, having the same language, concepts and aggregated ideas. In fact, the educational programmes in public administration implement the most relevant theories and practices of contemporary evolution of public administration.

### 4.1 Bibliographical issues and opportunity of using the semantic analysis

Landauer (2007) paper is fundamental in this context, as it presents by using quantitative evaluations, how words describe and substantiate the contents and different instruments, research methods, programming etc. The author draws attention on the complexity of the problem, highlighting the various valences: linguistic, artificial intelligence, statistics etc. The method designed, presented and used by Landauer (2007) is entitled "Latent Semantic Analysis (LSA)". "Latent Semantic Analysis (LSA)" is a theory and method for extracting and representing the contextual usage meaning of words by statistical computations applied to a large corpus of text. The underlying idea is that the aggregate of all the word context in which a given word does and does not appear provides a set of mutual constraints that largely determines the similarity of meaning of words and sets of words to each other" (Landauer et al, 1998: 2).

In this context, several programmes, software, technologies and ontological methodologies holding various applicability purposes have been developed. For example, Jovanovic et al (2007) demonstrate how the use of Semantic Web Technologies may improve the state-of-the art in online learning environment and creation of a bridge between students and professors. Peristeras and Tabanis (2006) identify a dual deficit of integration in contemporary public administration. As response, the above mentioned authors implement and exploit new business models, using semantic technologies and creating models reusable for global e-Government. Those models – Governance Enterprise Architecture (GEA) - provide the connection for the e-Government domain ontology.

A review of the state-of-the art of e-Government models is provided by Peristeras and Loutas (2008). Grouped in three categories - object, process and holistic – the authors present briefly pros and cons arguments in view of redesigning public administration for becoming more flexible, efficient and effective. e-Government interoperability, by using common models and/or ontologies, has become lately a very active research field. Peristeras et al (2009) identify over 40 relevant issues classified according to owner, scope and modelling perspective of each project. Prolonging the above preoccupations, Goudos et al (2007) present top level public administration domain ontology based on a generic model of public service in the framework of GEA. It results also a specific aspect of semantics for the field of public administration.

We also find preoccupations concerning the use of semantics in the European Union. We emphasize the Semantic Interoperability Community (SEMIC) as initiative of the European Commission in view to improve the semantic interoperability of the e-Government systems. The basic objectives are as follows:

- Develop, promote and use core vocabularies at the European, national and local level to reach a minimum level of semantic interoperability;
- Promote best practices for inter-organizational metadata management and governance.

Those objectives transposed in the context of the actual research will allow us to support the necessity to use the research methods both for the public administration systems and their adjacent educational programmes.

### 4.2 Issues of ontological methodology for the analysis of education programmes in public administration

In the context of the semantic analysis, the significance of the concept of ontology is not derived from metaphysics. "Ontology defines a set of representational primitives with which to model a domain of knowledge or discourse, but intended for modelling knowledge about individual, individuals" (Gruber, 2008).

The methods for developing ontologies specific to various fields are various. We shall not insist on them in the context of the current analysis. However, such an analysis comprises four distinct stages: identification, construction, evaluation and documentation (Uschold and King, 1995).

To each ontology, systems of measurement/ evaluation are associated in view to establish the connections between terms and concepts, level and degree of deduction, hierarchy etc. For the educational programmes, in our conception an ontological methodology of semantic analysis should comprise six main stages:

- Identifying the programmes to be analysed, creating a descriptive standard documentation (DDS) for each programme
- Creating a general descriptive document (DDG) through juxtaposition of the descriptive standard documents of each programme.
- Interrogating DDG and identifying the general terms/concepts of reference, valid for all the programmes analysed
- Refining the general terms of reference in light of a better adaptation to the specificity of the analysed programmes
- Interrogating each DDS and correlating the results with the results of stage 4.
- Evaluating and interpreting the results in view to reach the finality of our research.
- Obviously, other stages may be added so that the results describe accurately the specificity of the programmes analysed.

## 5. COMPARATIVE STUDY

The comparative study aims to present the use of the method of semantic analysis and to emphasise characteristics of the master programmes in public administration from European and American universities.

We refer to University of Rome Tor Vergata, Texas Southern University from US and National University of Political Studies and Public Administration, Bucharest, Romania. The programmes selected for analysis have been the following:

- Master in Innovation and Management of Public Administration (MIMAP), University of Rome Tor Vergata (SNA, 2016)
- Master of Public Administration (eMPA), Texas Southern University (MPA, 2016)
- Master of Public Sector Management (MMPS), National University of Political Studies and Public Administration (MSP, 2016)

The general terms of reference have been obtained through interrogation of DDG (obtained by juxtaposition of documents MIMAP, eMPA, MMPS) and keeping only the terms/concepts with a recurrence higher than 10. These terms and the level of recurrence are presented in 5.1.

### 5.1 General reference framework for the comparative analysis

The general reference framework will comprise two important parts. The first part refers to organization of the programme and the second part refers to the contents of the programme.

Organization of the programme
A1 Activities (W=3.2%) – types of activities included in programmes, their volume, length
A2 Certification (W=21%) – level of study and professional degree
A3 Colleges and universities (W=22.6%) – presenting the organizing university, presenting the membership of the teaching staff to various universities
A4 Courses (W=7.1%) – presenting the programme, its destination, the number of credits, hours of didactic activities compulsory weekly
A5 Levels of education (W=4.5%) – presenting the level of study, type of programme (executive) and perspectives for development of participants' career plan
A6 Role and relationships (W=3.2%) –relationships of collaboration with other programmes, partnerships
A7 Students (W=12.6%) – conditions of access, opportunities for students, skills and competences acquired
A8 Supervision and evaluation (W=9.7%) – modality to evaluate learning outcomes on subjects, finalization of the studies
A9 Teaching methods (W=12.2%) – teaching methods
A10 Training (W=3.9%) – possibilities to extend the specialization provided by university for tertiary parties

For each term of reference, a weight was calculated in view to evaluate the importance given by organizers to each field.

B. Contents
B1. Administrative policies (W=24.5%) – revealing the specific topics of the programme concerning administration and innovation
B2 Accounting and budgeting (W=3.7%) – specific activities targeting the mentioned field
B3 Management (W=20.4%) – the content references indicate almost equally the topic specific to general management and Public sector management
B4 Health (W=14.2%) – the name of the term of reference is inadequate. The text references aim performance measurement, experiences and good practices.
B5 Legal terms (W=5.5%) – the fundamental legal concepts used in development of the activities in the programme
B6 Politics (W=12.5%) – referring to central agencies, policies and political structures approached and described in the content of the programme
B7 Research and technology (W=10.8%) – informational sources used, research models and case studies
B8 Society (W=8.4%) – institutions, organizations, social processes approached in programmes or taken into consideration as finalities of the programme.

## 5.2 A comparative situation based on the general framework (Table 2)

**Table 2. Comparison between the master programmes analysed**

| General Terms of Reference | W | MIMAP | |
|---|---|---|---|
| | | $W_1$ | Specific terms |
| A1 Activities | 3.2% | 5.6% | Exercise, class activities, theory |
| A2 Certification | 21% | 12.2% | Master level, MBA, linked to degree courses and PhD's programme in public management |
| A3 Colleges and universities | 22.6% | 33.3% | University of Tor Vergata, Sannio, Lausanne, Lugano |
| A4 Courses | 7.1% | 3.1% | Course is based on teaching activities that involve traditional lessons, e-learning studies, seminars and stages |
| A5 Levels of education | 4.5% | 0% | Master programme |

| | | | |
|---|---|---|---|
| A6 Role and relationships | 3.2% | 3.6% | Cooperation, partnership<br>Partnership in the IKPM Network of Bolzano, the Bayerischeakademie of Monaco, University of Salzburg |
| A7 Students | 12.6% | 4.8% | Possible outlets for students are Central administration, Agencies, Authorities, Regional and local governments |
| A8 Supervision and evaluation | 9.7% | 9.1% | Assessment test modules, self-assessment |
| A9 Teaching methods | 12.2% | 15.1% | e-learning, lecture, specialised seminars |
| A10 Training | 3.9% | 2.4% | Managerial training for directors and professionals of the PA and public agencies |
| B1 Administrative policies | 24.5% | 29.6% | Administration, public agencies, logic of public management, comparison at international level, European level, regional administration, innovation in PA |
| B2 Accounting and budgeting | 3.7% | 4.5% | Public accounting in the Italian context, accounting information, International accounting standards |
| B3 Management | 20.4% | 21.9% | General management, performance management, public sector management, strategic management, reporting |
| B4 Health | 14.2% | 10.2% | Individual performance assessment, civic audit in healthcare sector, leadership, significant European experiences (UK, Denmark) |
| B5 Legal terms | 5.5% | 6.9% | Labour law, the public manager law, administrative law, civil servants legislation |
| B6 Politics | 12.5% | 12.8% | Central agencies, intermediate, local agencies, policies, political structure |
| B7 Research and technology | 10.8% | 7.4% | Information sources, theoretical model of organization, model of HRM, documents and reports |
| B8 Society | 8.4% | 6.7% | Demography, Institutions, non-profit organizations, working group |

Source: the authors

| General Terms of Reference | W | eMPA | |
|---|---|---|---|
| | | $W_2$ | Specific terms |
| A1 Activities | 3.2% | 3.9% | Seminars in organisational theory<br>Dual degree eMPA/JD |
| A2 Certification | 21% | 29.3% | Master degree<br>Juris Doctorate degree for dual eMPA/JD |
| A3 Colleges and universities | 22.6% | 5.9% | - The Barbara Jordan Mickey Leland School of Public Affairs<br>-Texas Southern University |
| A4 Courses | 7.1% | 12.5% | - Curriculum Core Courses (24 hours)<br>-Internship in public administration<br>- Prerequisite courses |
| A5 Levels of education | 4.5% | 11.6% | Executive master of public administration |
| A6 Role and relationships | 3.2% | 3.2% | Dual degree eMPA/JD |
| A7 Students | 12.6% | 18.8% | The programme is intended for students who want to obtain mastery of the administrative and legal aspect of public administration in the public, private and non-profit sector |
| A8 Supervision and evaluation | 9.7% | 4.9% | Evaluation of analytical competences |
| A9 Teaching | 12.2% | 7.8% | Courses and seminars |

| | | | |
|---|---|---|---|
| methods | | | Blackboard Academic S and Course Compass e-learning |
| A10 Training | 3.9% | 2.1% | Software |
| B1 Administrative policies | 24.5% | 19.6% | National and international public service<br>- Internship in public administration<br>- Comparative public administration<br>- Computer applications in public administration |
| B2 Accounting and budgeting | 3.7% | 5.4% | Government Budgeting and Financial management |
| B3 Management | 20.4% | 7.5% | Basic management processes, decision making, administrative management |
| B4 Health | 14.2% | 23.4% | - Emphasize knowledge of the working of governmental and non-governmental organization<br>- Oral communication skills |
| B5 Legal terms | 5.5% | 0% | - |
| B6 Politics | 12.5% | 20.4% | - Public policies, policy making process, analytical methods, public policy government |
| B7 Research and technology | 10.8% | 16.2% | Information technology, quantitative methods of research, academic research |
| B8 Society | 8.4% | 7.5% | Mobility in professional careers, social policy, global institutions, minority groups |

Source: the authors

| General Terms of Reference | W | MMPS | |
|---|---|---|---|
| | | $W_3$ | Specific terms |
| A1 Activities | 3.2% | 5.1% | - Research project<br>-Courses and thematic seminars |
| A2 Certification | 21% | 17% | Master degree specialization “Public Sector Management” |
| A3 Colleges and universities | 22.6% | 13.8% | National University of Political Studies and Public Administration |
| A4 Courses | 7.1% | 10.8% | - Fundamental and specialised discipline<br>-Complementary (core, elective) and supplementary discipline |
| A5 Levels of education | 4.5% | 7.7% | Master in public administration |
| A6 Role and relationships | 3.2% | 4.6% | Partnership at a local, national and international level for internship and practice |
| A7 Students | 12.6% | 15.4% | Students will have developed and improved skills in following fields: analysing and solving concrete management and executive problems of the public sector |
| A8 Supervision and evaluation | 9.7% | 13.8% | Final exam |
| A9 Teaching methods | 12.2% | 7.7% | Thematic seminars, e-learning method |
| A10 Training | 3.9% | 4.1% | - Managerial training for directors and professionals of the PA and public agencies |
| B1 Administrative policies | 24.5% | 14.4% | National and European administration, international level |
| B2 Accounting and budgeting | 3.7% | 6.1% | Financial management and Budgeting of public administration |
| B3 Management | 20.4% | 26.2% | General management, public finance management and public sector |

| | | | |
|---|---|---|---|
| | | | management |
| B4 Health | 14.2% | 14.4% | - Knowledge in the field of public administration for the students<br>-Developing research and practice skills |
| B5 Legal terms | 5.5% | 5.5% | - Administrative law of goods<br>- Civil servants and public employees |
| B6 Politics | 12.5% | 5.5% | - Public policy analysis for managers, public decision making, e-government |
| B7 Research and technology | 10.8% | 14.4% | Research project, comparative analysis, case studies |
| B8 Society | 8.4% | 13.5% | Non-profit organizations, public employees, authorities and public institutions |

Source: the authors

## 4. CONCLUSION

The semantic analysis provides a friendly instrument in view to compare the educational offers from the quasi totality of higher education fields. In order to obtain relevant comparative results, we need data processing, statistical analyses, as well as adaptation of primary data to the specificity of the programmes analysed. Thus, in Table 2, we introduced the indicator W, evaluating the share of various terms of reference from the general framework of comparative analysis.

Consequently, simple analyses of statistic correlation reveal general or specific conclusions, as follows:

- high general correlations, 0.874 respectively 0.733, significant at the 0.01 level with the general comparative reference framework of MIMAP and MMPS programmes and low correlations, 0.557, significant at the 0.05 level for eMPA;
- the inter-programmes correlations have a lower level, the most powerful ones are between MIMAP and MMPS (0.492, significant at the 0.05 level) while the weaker ones are with eMPA.

Concerning the contents of the programmes, the correlation analysis also highlights:

- powerful correlations, significant at the 0.01 level, between MIMAP (0.952) and the general reference framework and lower (0.541 respectively 0.670) between eMPA, MMPS and the general reference framework;
-average inter-programmes correlations on their contents (0.362, between MIMAP and eMPA, 0.537 between MIMAP and MMPS) and low correlations between MMPS and eMPA.

Concerning the organizational framework of the programmes, the correlations reveal more obvious differences. Thus:

- the two European programmes have a very powerful level of correlation with the general framework, significant at the 0.01 level, (0.813 for MIMAP and 0.809 for MMPS, while the American programme has a lower correlation of 0.548;
- the inter-programmes correlations indicate an average correlation, significant at the 0.05 level between eMPA and MMPS (0.542) and an inverse correlation (-0.011) or almost inexistent between MIMAP and eMPA.

Of course the comparative analysis could be more detailed. The conclusions presented confirm the relative difference of vision concerning the design and organization of Master programmes in the field of public administration between the European and American universities. The examples are relevant for the current analysis and conclusions, the programmes analysed being accredited by specialised institutions from Europe (EAPAA) and US (NASPAA).

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# TERM OF OFFICE LIMITS FOR SENIOR MANAGEMENT ROLES IN ISRAEL'S PUBLIC HEALTH SYSTEM - A MANAGEMENT ASSET OR AN OBSTACLE?

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**Abstract**: *The Israeli public health system is a complex, important, and operationally complicated system. The scope of its operations and its annual turnover are massive and it encompasses an enormous number of professional personnel with various skills, some of whom are hard to replace. Hence, senior managers in the public health system are posed with a major management and professional challenge. As a result of the current state of affairs, in which senior managers enjoy unlimited terms of office, there is no retention of high quality human capital in the public/state healthcare system and promotion opportunities are few, with little turnover in the higher management ranks of the state-run system. The current paper examines the advantages and disadvantages term of office limits have for senior managers in the state-funded healthcare system, and argues that the main purpose of specifying terms of office for these jobs is to improve the organization's performance. The aim of this article is to examine the perceptions of senior management role holders in the public health system regarding terms of office arrangements and their implications for senior managers in the hospitalization system. The proposed research design includes mixed methods design, which involves a first phase of qualitative interviews to get explanations about the researched phenomenon, followed by a second phase of quantitative data collection and analysis that builds on the first qualitative phase [1]. This article will present the qualitative phase: Six in – depth interviews with senior management role holders in the public hospitalization system conducted in the center of Israel. The results of the study provide a clear image showing the positive and negative aspects of term of office arrangements in the Israeli Healthcare system.*

**Keywords**: *Healthcare system, health policy, healthcare systems management, management "for life", senior management roles, term of office limits*

## INTRODUCTION

Israel's public healthcare system is one of the country's most complicated and complex social and economic systems. Its complexity stems from the following: multiple organizations that operate within it, combination of private and public institutions, the existence of medical insurance providers, the unique nature of its services, which reflect ethical perceptions concerning the value and quality of life, and the common conception of health as a social right that must correspond to the population's healthcare needs and not necessarily with people's ability to pay [2].

In light of the current state of affairs, and more than in any other period in the history of Israel's public healthcare system, senior managers must be well versed in the general world of management, as well as in the concepts and needs that stem from management of a unique medical environment, and must meet the challenges posed by the system. These are only some of the necessary skills for management within the healthcare system, but they are not sufficient. Managers must develop the organization, change within it, and take risks. They must build a vision, provide inspiration, and serve as a motivating force for their subordinates. Furthermore, they must demonstrate initiative and creativity, empower and develop employees, and generate in them a commitment to and responsibility for the fate of the organization [3], [4], [5].

At present, doctors and nurses appointed to senior management positions in the public healthcare system serve for lengthy periods, 20 years on average and even until retirement [6]. This situation of lengthy terms of office and appointment of managers 'for life' may lead to a lack of professional development, erosion of their positions, and the departure of high quality staff members as a result of the lack of promotion options, the creation of power foci, and the lack of excellence promotion. This clarifies that limiting the terms of office of senior managers within the public healthcare system, in both medical and nursing fields is a management asset.

However, instituting limited terms of office also has visible weaknesses: implementation of such arrangements will require constant guidance as well as extensive costs involved in training personnel may prevent collaborations and discourage commitment to the organization and loyalty to its members. Moreover, one of the disadvantages associated with the regulation of term of office is that it causes senior managers to relinquish long-term planning in favor of short-term achievements, although it is evident that senior managers need time to learn an organization, to gradually implement their policies, and to enjoy their fruit [7], [8].

A review of the benefits and disadvantages of introducing limited terms of office for senior managers and conversations with senior personnel in the public healthcare system raised and reinforced the hypothesis that introducing a mechanism to limit term of office for senior managers in the public health system will create dynamics for personnel and organizational development and reinvigorate a system that has vast responsibilities for the health of its citizens. However, there is no research reviewing the benefits and disadvantages for the health system and their significance.

The purpose of this article is to examine the attitudes of senior role-holders in the public healthcare system regarding the term of office for senior managers in the general hospital system.

## 1. LITERATURE REVIEW

### 1.1 Israel's healthcare system

Israel's healthcare system is comprised of a large number of institutions and organizations whose actions are aimed at achieving one primary goal: to promote and improve public health. This main goal includes several secondary goals, i.e., to ensure the quality of healthcare services, to increase public satisfaction with the services, to supervise expenditure, to improve the system's efficiency, and to maintain its principles of social solidarity.

### 1.1.1 Structure of the Israeli health system

The institutions and organizations operating in Israel's healthcare system can be divided into four main groups:

1. Ministry of Health – The Ministry of Health has overall government responsibility for ensuring the health of all citizens. The ministry is the government authority through which the state implements its policies throughout the entire healthcare system, by outlining healthcare policy and determining the system's priorities and operational principles.
2. HMOs – Israel has four HMOs (Kupat Holim), responsible for supplying their members with a basket of services determined by law.
3. Other public institutions – This group includes non-profit institutions and organizations that operate within the healthcare system, for example Magen David Adom (the Jewish equivalent of the Red Cross) and the Israeli Cancer Association.
4. Private institutions – This group includes privately owned institutions and organizations that operate on a for-profit basis, such as various types of private hospitals [2], [9].

### 1.1.2 Hospitalization System

Hospitals are divided into three groups: general hospitals, mental hospitals and rehabilitation or chronic disease hospitals. This division is derived from the types of morbidity and nature of medical activity. Figure 1 describes the division of hospital arrangements according to groups for 2014 (Israeli Ministry of Health official website http://www.health.gov.il).

### 1.1.3 Human Resources in the Israeli health system

Of all those employed in the healthcare system, doctors and nurses are the most dominant component, both quantitatively (doctors and nurses constitute 36% of all employees and their pay comprises about 63% of the healthcare system's overall employment costs) and due to the nature of their job and their major impact on the system's activities and on consequent expenditure [10].

### 1.1.4 Senior management roles in the Israeli public health system

The five most senior positions in the healthcare system, as defined by the Civil Service Commission are: Hospital Director General, Hospital Deputy Director General, Director of Nursing, Director of Administration and Director of Finance.

Senior managers in the healthcare system have the double job of managing human resources and running medical and nursing operations, as well as being responsible for the quality of clinical work. For these reasons, senior management positions within the healthcare system are considered to be very complex requiring both proven management skills and professional competencies in order to achieve medical goals [4].

Good managers ensure effective organization and utilization of resources to achieve results and meet aims [7]. This means that senior managers in the healthcare system are a major element in the management of healthcare systems, and as such they must be those most suited for their positions over time.

### 1.2 Limiting term of office

Definition: Term of office limits are restrictions on how long a particular person can serve in a political office. Term limits can be expressed in number of terms in office or years of service. Term limits are imposed so that one person cannot hold an office for life and so a variety of people can serve [11].

#### 1.2.1 Term of Office Limits

Term limits have proven to have great value. Boards and institutions benefit from fresh ideas, energy, and new capabilities at critical times. Complaints about term limits have been manifold as well. The one presented most frequently is the loss of "institutional memory" or "decision memory" [12].

Term limits must achieve a delicate balance between constantly revitalizing an organization with 'new blood' while maintaining continuity. They should be sufficiently long to allow members to learn their job, perform it well, and have the potential to ascend to a position of leadership. They must be short enough to minimize the chance of burnout and to facilitate continual, but gradual, organizational turnover [13].

#### 1.2.2 Limiting terms of office in public service

A topic of increasing importance for public service is the impact of senior managers' terms of office on performance. Many governance authorities recommend limiting the length of service of senior managers for several reasons:

- To enable assessment of professional performance and the suitability of personnel for their terms of office;
- To create possibilities of promotion in public service;
- To increase the chances offered to additional candidates to occupy various positions and to promote the principle of equal opportunity;
- To prevent burnout stemming from holding a position for a lengthy period of time;
- To prevent the lengthy accumulation and concentration of a great deal of power in the hands of senior managers.

Studies held on behalf of the OECD in recent years in member countries show that in some countries reforms have been implemented in recent decades with regard to the employment terms of public servants, leading among other things to more prevalent limitation of office terms. The studies have also found that limitation of terms of office is customary mainly among senior manager s in public service [14].

In a comparative review conducted by the Research and Information Center of the Knesset (Israeli Parliament) on regulations limiting the terms of senior managers around the world [15] responses were received from 24 countries. The review found several different principal arrangements limiting the terms of senior managers in public service, including:

- Limiting the terms of senior managers in public service through legislation;
- Use of evaluation mechanisms to help reach decisions concerning the continued employment of senior manager s in their current position;
- Compulsory rotation of senior managers among various same-rank positions in government offices.

In Israel, government resolution no.4470 was passed on February 8, 2009, confirming the application of term of office limitation arrangements in a list of senior public service jobs, but there is no systematic overall regulation in this area. For example, the law limits the term of office of the State Comptroller (seven years), the Governor of the Bank of Israel (five years), and the Head of the General Security Services (five years). Government resolutions also limit the terms of office of the Attorney General (six years) and of the State Attorney (six years).

The government resolution aims to encourage rotation and transition among senior public servants in order to utilize the full potential of their experience and enable the transfer of knowledge accumulated during their time in office, while constantly refreshing the ranks, preventing burnout, and promoting exemplary workers, all of which constitute leading values with regard to senior public servants.

### 1.2.3 Limiting terms of office for senior management positions in the government healthcare system

Because of their significant positions in the public healthcare system, senior managers' terms of office are a topic with important consequences for the strategic and organizational management of this system.

The issue of limiting the terms of senior managers at government hospitals was explored by several committees charged with examining the healthcare system, particularly the Amorai Committee (2002), the Leon Committee (2004), and recently the German Committee (2013). The report issued by the Amorai Committee determined, in section 7.4, that "the terms of hospital department/unit managers will be limited to five years, with the possibility of extension for another five years by the management" (http://brookdale.jdc.org.il/_Uploads/PublicationsFiles/448rr-amorai-heb.pdf). In addition, this resolution was also manifested in the conclusions of the Leon Committee, section 4.2: "The CEO of a hospital shall have proven experience in the management of large medical facilities. The directorate shall limit the CEO's term of office and shall be entitled to extend or shorten it at its exclusive discretion." (ibid.)

In June 2013 Knesset Member Yael German, Minister of Health at the time, appointed an advisory committee to strengthen public healthcare. The committee recommended that limited terms of office be set and rotations be held among directors and assistant directors of government hospitals, heads of department, and other senior manager s in state-funded healthcare services, for the following reasons:

- To improve the ability to evaluate professional performance and suitability of senior manager s for their positions;
- To open promotion tracks in the government hospital system, while increasing the chances of additional candidates to occupy senior positions and promoting the principle of equal opportunity;
- To encourage innovation and prevent burnout stemming from occupying a position for a lengthy period of time;
- To reduce dependency between the appointing element and senior manager s and between senior manager s and their subordinates;
- To increase the independence of senior manager s, while preventing the accumulation and concentration of excessive power in the hands of senior manager s for a lengthy period.

In September 2014, the socio-economic cabinet approved a decision reached jointly by the Prime Minister's Office, the Civil Service Commission, and the Ministry of Health, aimed at achieving a significant reform in the management of Israel's healthcare system.

The foundations of the decision set a limitation on the term of office of government hospital directors and senior manager s in the Ministry of Health, to a maximum of 6-12 years. Moreover, they limit the term of office of department heads and directors of large institutes at government hospitals. At the same time, a rotation mechanism will be applied to help retain human capital and experience accumulated in management roles and keeps them within the government system.

The issue of limiting the terms of senior managers in the medical system has been discussed repeatedly and even gained a recommendation by the German Committee, charged with examining the structure of the healthcare system, but there is a lack of attention to this issue in the political discourse and in the literature on Israel's nursing field. This situation, described both with regard to healthcare systems in the world and to medical services within Israel's government healthcare system, which has no terms of office or rotation in senior management positions, is very similar and even identical to that of the nursing systems in general Israeli hospitals.

In the current state of affairs, nurses appointed to management positions remain in their jobs for lengthy periods of time, about 15 years on average and even until they retire. This situation of lengthy service periods and appointment of managers "for life" may lead to a lack of professional development, erosion of these positions, departure of high quality nurses as a result of the lack of promotion possibilities, creation of power foci, and lack of excellence promotion. In contrast, in some senior positions an arrangement consisting of short terms of office might constitute a management obstacle, as the roles require accumulation of maximum experience, and in such a case frequent replacement of the manager may be perceived as a waste of organizational resources [8].

Shapira (1990) contended that the utilization of short term of office lead to severe social and management deficiencies that prevent cooperation, discourage commitment to the organization and loyalty to its members, and result in lack of support by supervisors, colleagues, and subordinates. In addition, it hinders the readiness of managers to take risks and be innovative [16].

A few studies have examined the impact of changing managers on shaping organizational performance. Term limits and life-cycle theories [17] suggest that a new manager develops new processes, a new team, and a fresh strategy that improve long-term performance as they learn and make necessary adaptations. Moreover, Hambrick and Fukutomi (1991) suggested that managers become dysfunctional over time in an inverted u-shaped relationship with performance. Studies propose that organizational performance increases for the first 8-10 years of one's term of office but decreases thereafter, as managers apply old formulae to new conditions [18]. However, Henderson, Miller and Hambrick (2006) suggested that this pattern may depend on the industry [19].
Senior management positions in the nursing system constitute a major element of hospital management, and as such they must deal with most management components, including recruitment, training, administrative work procedures, and professional standards [4].

Adams (1991) explained that the expanded nurse manager position must include a more global understanding of issues surrounding the entire healthcare system. Therefore, nurse managers are being challenged to acquire more administrative and leadership skills [20].

In summary, medical and nursing practitioners can be perceived as constituting a major segment of healthcare personnel, and managers that head the organizations have a major influence on achieving its goals, in a changing and developing environment and with limited resources. These managers are responsible for improving the performance and operations of the healthcare organizations they head. Therefore, there are advantages in limiting term of office for senior positions in the public healthcare system

The public healthcare system operates around the clock and requires professional economic and managerial efficiency. Appointing managers 'for life' in this system hampers their motivation to improve. Thus, as health practitioners we are obliged to make sure that the managers heading this system will be the most suitable and worthy over time.

## 2. METHODOLOGY

### 2.1 Aim of Article

The aim of the article is to examine the perceptions and opinions of senior manager s in the healthcare system regarding the issue of whether office term limits help or hurt senior role-holders in the public healthcare's system.

### 2.2 Type of Research

This is a theoretical study based on qualitative data collection methods - semi-structured in-depth interviews, whose purpose is to present and analyze a variety of opinions and perceptions within senior management levels.

### 2.3 Interviewees

Six in depth interviews with senior managers were conducted in various areas of the general hospital system in central Israel, including a hospital Director General, Director of Administration, Human Resources Director and Directors of Nursing. The research examined their perceptions regarding terms of office for senior management roles in the general hospital system.

This was not a randomly chosen sample because there are only 11 medical centers for general hospitalization in Israel. The predominant advantage of this sample was conversations with people placed at the focal point of relevant information for research and the extent of their cooperation. A disadvantage of the way the sample was structured is the bias that may arise as all interviewees are based in the center of the country, and it is possible, therefore, that their views are not representative of overall opinions.

### 2.4 Interviews

Face to face interviews took place in August 2016 and each lasted between 40 minutes and one hour, at the interviewees' place of work. The same interviewer carried out all interviews. Four of the six interviews were recorded and only two were summarized. The interviews were transcribed and coded, anonymity was guaranteed to interviewees. The interviews were open and semi-structured. Interviewees directed the conversation, but the interviewer ensured that they did not stray from the subject, which guaranteed flexibility for interviewees, while keeping to the subject of the interview [1], [21]. Interviews referred to the role of managers and advantages and disadvantages of the issue of term of office in public healthcare management.

### 2.5 Interview Analysis

Interview analysis was based on the categorization and classification method, and sought to identify recurring patterns, trends [1], [21] and useable conceptual categories [22].

## 3. FINDINGS

### 3.1 General Trends

The picture drawn from the interviews reveals that senior positions in general hospitals are complex and dual. On the one hand, they have great responsibility for professional medical aspects and on the other, for managing a large and complex system. "*It is a perfect combination of doing the things that define the activities of doctors and nurses on the one hand, but putting the patient at the center and on the other hand, it is managing a very large system that combines aspects of leadership, being ahead and realizing a vision*." "*It is one of the more complex roles in the healthcare system, the more demanding, it is 24 hours a day, it never ends, it is all consuming with total commitment to doing*".

All six interviewees agreed that limited term of office for senior positions in the general hospitalization system would constitute an important, essential and very positive mechanism. This can be seen in the trends below:

### 3.1.1 The Case for Office Term Limits

- Reinvigorate the system - innovation and different perspectives: *"Limits would bring new blood*", "*New managers bring fresh perspectives and new ideas*", "*They are not stuck doing things as we have done them*".
- Opportunities for other people - creating promotion possibilities for mid-level managers: "*Term limits create opportunities to involve other interested role holders who would love to be in a management position but never get the chance*". "*There is a whole group of mid-level managers in the organization, who because they are stuck with no prospect of promotion on the horizon, remain frustrated*". "*There are excellent doctors and nurses that the organization loses to the private system*". "*Opportunities must be given to others in the system*". "*There is a horizon for people to aspire to*". "*Allows for the entry of new forces into the system so as to enrich it and for it to develop*".
- Prevents burnout: "*After 8-10 years, there is burnout because you can no longer use your abilities for the benefit of the organization particularly in preserving its stability*". "*We all know that over the years, people burn out. They are no longer as creative or take the initiative as they did at the beginning*".
- Ability to evaluate professional functioning. "*Limited terms of office allow evaluation to take place, through which one is able to evaluate whether to extend the term or not*". "*With such a mechanism, you would want to exploit to the maximum your time and you know that you will be evaluated. There has to be a junction when one says this person has achieved that ... reached his/her goals ... he/she can move on...it is not automatic*".

### 3.1.2 The Case against Office Term Limits

- Loss of organizational knowledge: *"We will lose some accumulated knowledge and expertise. Surely it gets lost"*.
- Requires ongoing training: "*We will have to train new people constantly*".
- A lack of senior roles: "*When a Director of Nursing or Hospital General Manager finishes his/her term of service, what will they do? Will their employment conditions be protected?*"
- Large national expenditure: "*Such a limited office term mechanism creates more senior positions, which cost the system more*".

### 3.1.3 Determining length term of office

With reference to the question of how long a hospital Director General or Director of Nursing should serve in the role, everyone agreed a period of 5 years with the possibility of extension for a further 5 years, that is to say 10 years in total. In response to my question why they chose this number, all of them, without exception, pointed out that it only takes two years to gather data and learn about the complex system, identify needs and problems and construct appropriate work plans. It takes a further two years to implement work processes and only in the fifth year can one perhaps see the fruit of one's undertaking.

"*The first two years at least are meant to complete knowledge, gather data and construct a work plan*". "*In order to see results of work plans in our system, takes five years*".

### 3.1.4 Effect of term of office on the public healthcare system

"*It is good for the system by reason of innovation, change, reinvigoration, dealing with burnout, it's good for teams because it enables promotion and of course it is good for patients because finally results are for patients. In short, it is good for everyone*".
"*It rejuvenates the system and marches it forward in fact. It will enable the system to respond better*". "*You don't remain frozen, you have to prove yourself and therefore this drives role holders to move towards the organization's aims*".

### 3.1.5 Which components must exist for implementing a term of office limit mechanism?

"*A mechanism is needed to enable vacating a role and still finding that manager a different role that will not be detrimental to their employment conditions*". "*It has to be a systemic mechanism of rotation, a circular mechanism*". "*It has to be a managed mechanism that creates movement*". "*The Ministry of Health must take responsibility for it and not allow individuals to manage their own careers*". "*The trade unions must agree to this mechanism because they protect workers and all their rights*". "*The Ministry of Finance has to be a partner in the decision because in the end it is a cost-benefit issue*". "*It must be organized and arranged between the*

*Civil Services Commission, Ministry of Health and Trade Unions and of course, the Ministry of finance*". "*If you want it to succeed, you have to put all five principal positions into the same mechanism, it's important that it will be clear to everyone that there is a starting point, they have an exit point and an evaluation point*".

## CONCLUSION

The research clearly reveals that senior managers within the system believe that regulating and limiting term of office has numerous advantages that outweigh its disadvantages and that such a mechanism will lead to systemic efficiencies. As such, arrangements to regulate term of office require an organized and ordered mechanism agreed by and with the cooperation of a number of factors: The Ministry of Health, Civil Service Commission, and Ministry of finance and Trade Unions.

The interviews teach us that senior managers ready for such a change and see it as a management advantage both for the system and for human resources. They all agreed that the period necessary is five years with an option to extend for a further five years. On the basis of the understanding reached in this study, the next stage will be dedicated to a review examining the opinions of mid-level nurses.

Throughout the Western world, health is perceived currently as a basic value that countries are obliged to maintain and promote. As a result of this concept, all health professions are obligated to maintain the quality of clinical practice. Quality of care and achievement of medical outcomes require suitable and worthy managerial personnel at all times.

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# THE SMART GOVERNANCE INDEX – A NEW ALTERNATIVE TO THE WORLD GOVERNANCE INDEX

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**Abstract**: *Measuring governance performance, in particular of different countries, is indispensable for increasing its effectiveness, efficiency and quality. There were developed many such indicators, but they are rather unilateral. The WGI, launched in 2008 by the Forum for a new World Governance and covering 179 countries of the world, made up of 5 aggregate indicators, is possibly the first attempt to build such a complex and in the same time practical index. Unfortunately, the WGI wasn't updated since 2011, although it would be very useful both for theoreticians and practitioners. We propose an alternative index – the SGI, calculated for 151 countries in 2010 and 155 countries in 2015, made up of 10 sub-indexes. Both the WGI and SGI aren't perfect, but are good analytical tools for governance actors / players. While the WGI is based on the idea of sustainable development, the SGI suggest smart development focused on knowledge-intensive factors. Considering this paper's limitations, we selected a sample of 6 countries and 7 regions for comparison and exemplified 10 best and 10 worst performers for both indexes. We concluded that top performers are the most developed countries, in particular Scandinavian ones, while the least developed African and Asian states have the poorest ranks. On the other hand, a weak score even of a sub-index may result in losing overall leadership, as in case of the USA or Japan. Moreover, negative phenomena, like wars or crises, can make countries bottom performers, e.g., Afghanistan or Syria.*
**Keywords**: *Administration, effectiveness, efficiency, globalization, governance, human development, knowledge, management, measuring, performance, public sector, quality, Smart Governance Index (SGI), smart development, sustainable development, World Governance Index (WGI).*

## HOW TO MEASURE GOVERNANCE PERFORMANCE?

Governance may be considered a synonym for management, but the former refers mostly to the public sector or to the macro level. Administration perhaps is a better synonym for governance. Public administration / management better reveals the essence of governance.

Governance, administration or management have more or less similar functions – planning, organizing, motivating, controlling, etc., which make up the whole process of governing. These functions are fulfilled more or even much more effectively and efficiently if they are measured, i.e. if we use different quantitative indicators for characterizing performance. Numbers are much more precise and objective than vague words.

It is especially useful to compare the governance performance of different countries. There were developed many such indicators (e.g., Human Development Index (HDI) or Doing Business), but they are rather narrow, reflecting only one or several aspects of governance.

## WORLD GOVERNANCE INDEX (WGI)

In 2008, the Forum for a new World Governance launched the WGI project. The WGI was envisaged as a tool to detect problems and find solutions to them for governance actors / players. The WGI is a complete, pragmatic, practical index that is also meant as an incentive for action [6, p. 5].

The WGI includes 5 aggregate indicators: peace and security (P&S), rule of law (RoL), human rights and participation (HR&P), sustainable development (SDev), human development (HDev) that measure the most important, critical fields of governance at the global level. These 5 indicators are inspired from the principles of governance specified in the Charter of the United Nations (San Francisco, 1945), the Universal Declaration of Human Rights (Paris, 1948), the Earth Summit Declaration (Rio, 1992), the Millennium Declaration (New York, 2000), the findings of the World Summit on Sustainable Development (Johannesburg, 2002) [6, p. 6].

Each of the 5 indicators is broken down into several sub-indicators (a total of 13). Each sub-indicator is the result of the aggregation of several indexes (41 in all). Finally, nearly 8,500 data items used to calculate the indexes and determine the WGI are taken from databases published annually by the main international organizations and by NGOs specializing in the area of governance [6, p. 6, 13].

The approach used to calculate the WGI is similar to the one used by the UNDP to establish its HDI. For each of the indexes and sub-indicators, all the collected raw data was rescaled into a “closed” scale ranging from 0 (the worst result) to 1 (the best possible score). The WGI is aggregated by means of the mathematical average. [6, p. 13]

However, the WGI was calculated only for 2008 and 2011 and wasn’t updated since. It is nevertheless useful to analyze the WGI dynamics for several countries and regions. Given that the author of this paper lives in Moldova, we consider it opportune to compare the WGI of Moldova with the WGI of the selected countries and regions.

In 2011, the WGI of Moldova was 0.619, or with 0.02 (3.13%) less compared to 2008. It is explained by a negative dynamics of RoL (-0.005 or -0.92%), HR&P (-0.065 or -9.97%), and SDev (-0.068 or -10.9%). On the other hand, we observe a weak growth of P&S (+0.02 or +2.34%) and HDev (+0.018 or +3.44%).

In spite of decreasing in the WGI, the rating of Moldova even increased by 1 – from 78 to 77 out of 179 countries (both in 2008 and 2011). In case of the WGI 5 main components, a negative trend transformed in a descending rating, and vice versa: P&S (from 103 to 98 or ↑5); RoL (from 68 to 73 or ↓5); HR&P (from 57 to 76 or ↓19); SDev (from 54 to 97 or ↓43); HDev (from 135 to 114 or ↑21).

Compared to other countries, the WGI of Moldova was higher than that of Russia and Ukraine, but less than the one of Romania, Japan and USA both in 2008 and 2011.
In relation to the WGI averages by regions, Moldova performed better than Africa, Arab states, Asia Pacific and CIS, but worse than EU-27, Latin America & the Caribbean (LA&C).

However, the most relevant gauge for comparison is undoubtedly the global average. In 2011, the global WGI had a negative trend vis-à-vis 2008, diminishing from 0.632 to 0.616 (-0.016 or -2.53%), including: P&S (+0.025 or +2.95%); RoL (-0.002 or -

0.41%); HR&P (-0.014 or -2.44%); SDev (-0.032 or -5.47%); HDev (-0.05 or -7.99%). Thus, Japan, EU-27, USA, LA&C, Romania and Moldova performed better than the WGI global average, while Ukraine, CIS, Asia Pacific, Russia, Africa and Arab states – worse both in 2008 and 2011 [2; 6].

The global financial crisis of 2007-2008 (but not only) certainly contributed to the WGI decline. Moreover, the WGI 2008 was calculated based on the 2007 or earlier data. The WGI 2008 for the 6 selected countries and 7 regions is represented in Figure 1, while the WGI 2011 for the same sample of countries and regions – in Figure 2. The WGI 2008 and 2011 selected rankings are depicted in Figure 3 and 4 accordingly.

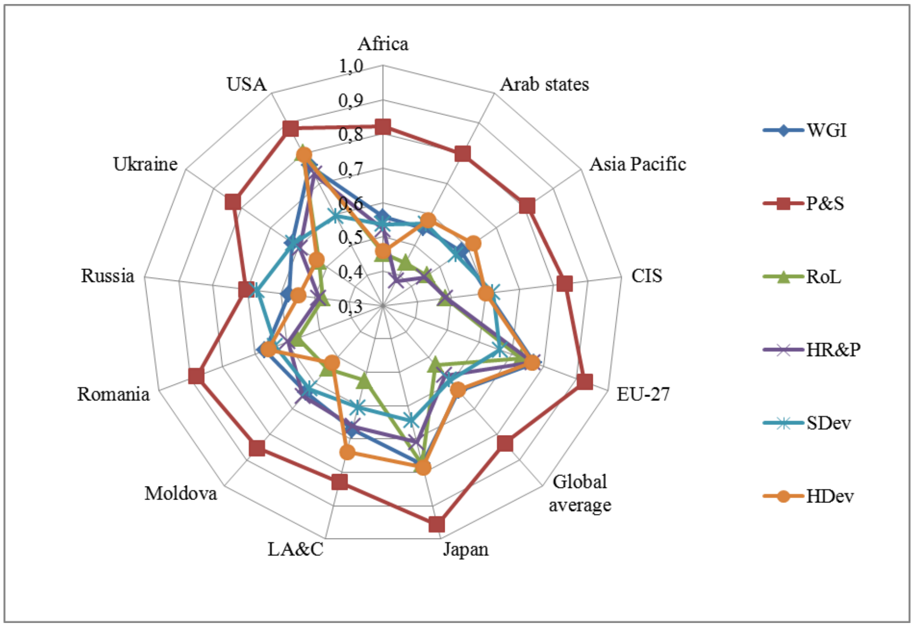


**Fig.1. WGI 2008**
*Source*: developed by the author based on [2].

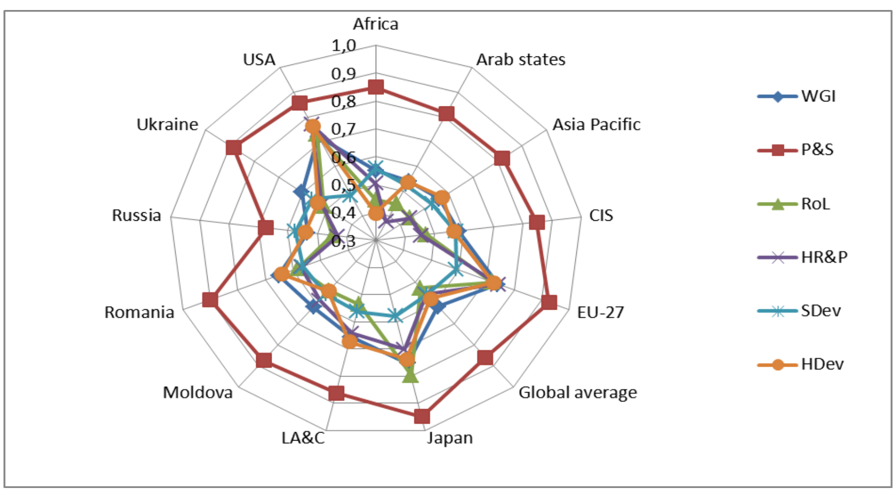


**Fig. 2. WGI 2011**
*Source*: developed by the author based on [6].

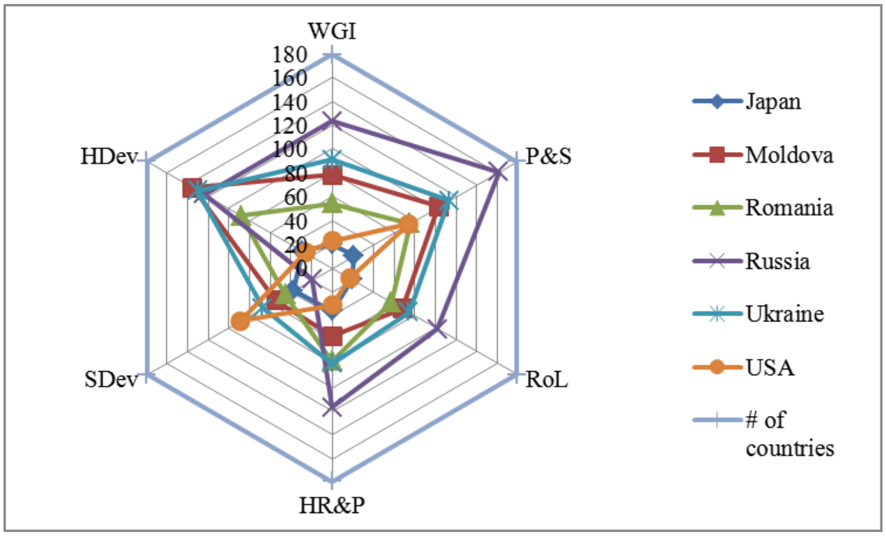


**Fig.3. WGI 2008 rankings**
*Source*: developed by the author based on [2].

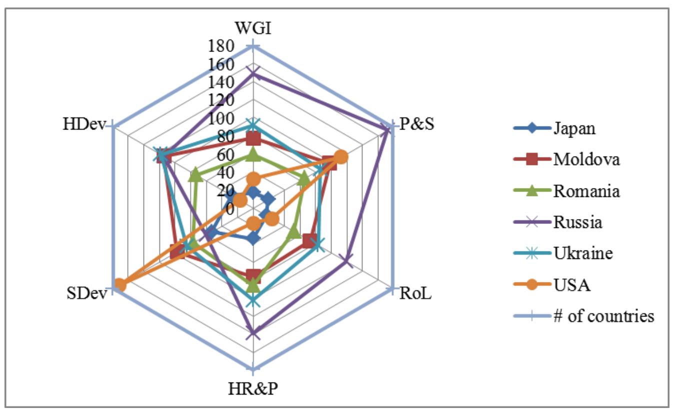


Fig.4. WGI 2011 rankings
*Source*: developed by the author based on [6].

Top and bottom 10 countries by the WGI are sorted in Table 1. As we observe, 10 top-performing countries are the most developed ones. 8 of them are European, in particular, Scandinavian ones. Bottom 10 countries are the least developed ones from Africa and Asia.

**Table 1. Top and bottom 10 countries by the WGI in 2008 and 2011**

| 2008 | | | 2011 | | |
|---|---|---|---|---|---|
| WGI rank | Top 10 countries | WGI | WGI rank | Top 10 countries | WGI |
| 1 | Iceland | 0.875 | 1 | Norway | 0.844 |
| 2 | Norway | 0.871 | 2 | Sweden | 0.843 |
| 3 | Sweden | 0.870 | 3 | Finland | 0.832 |
| 4 | Finland | 0.864 | 4 | Iceland | 0.830 |
| 5 | Denmark | 0.856 | 5 | Denmark | 0.826 |

| | | | | | |
|---|---|---|---|---|---|
| 6 | Luxemburg | 0.846 | 6 | New Zealand | 0.825 |
| 7 | New Zealand | 0.846 | 7 | Netherlands | 0.813 |
| 8 | Netherlands | 0.845 | 8 | Switzerland | 0.807 |
| 9 | Austria | 0.839 | 9 | Australia | 0.806 |
| 10 | Australia | 0.830 | 10 | Germany | 0.801 |
| WGI rank | Bottom 10 countries | WGI | WGI rank | Bottom 10 countries | WGI |
| 179 | Somalia | 0.290 | 179 | Somalia | 0.293 |
| 178 | Iraq | 0.402 | 178 | DRC | 0.408 |
| 177 | Sudan | 0.417 | 177 | Sudan | 0.408 |
| 176 | Democratic Republic of the Congo (DRC) | 0.419 | 176 | Myanmar | 0.413 |
| 175 | Gaza / West Bank | 0.421 | 175 | Afghanistan | 0.424 |
| 174 | North Korea | 0.423 | 174 | Iraq | 0.425 |
| 173 | Chad | 0.436 | 173 | Zimbabwe | 0.432 |
| 172 | Myanmar (Burma) | 0.446 | 172 | North Korea | 0.433 |
| 171 | Zimbabwe | 0.461 | 171 | Gaza / West Bank | 0.438 |
| 170 | Central African Republic (CAR) | 0.461 | 170 | Chad | 0.445 |

*Source*: developed by the author based on [2; 6].

It is mentionable that only Germany in 2011 (the 10$^{th}$) and none of the G8 countries in 2008 was represented in top 10, while Russia was ranked only 123$^{rd}$ in 2008 and 148$^{th}$ in 2011. One further comment would be that Czech Republic (22$^{nd}$) outpaced the USA (32$^{nd}$) in 2011, although it was vice versa in 2008 (32$^{nd}$ vs. 23$^{rd}$).

## SMART GOVERNANCE INDEX (SGI)

### Methodology

Smart governance is the future of public services, meaning greater efficiency, community leadership, mobile working and continuous improvement through innovation. It implies using technology to facilitate and support better planning and decision making, improving democratic processes and transforming the ways that public services are delivered. Smart governance includes e-government, the efficiency agenda and mobile working [3].

Unfortunately, the WGI wasn’t updated since 2011, although it would be very useful both for theoreticians and practitioners. The author hasn’t necessary resources and authority to update the WGI, but he developed an alternative indicator – the SGI. We hope that it will become food for thought and then for action for governance actors worldwide, especially in Moldova and Romania.

Like the WGI, the SGI is a complex index and includes almost all important aspects of governance. The SGI, as every other indicator, isn’t perfect, but is rather representative for each country.

The SGI includes 10 sub-indexes: economy (Econ), environment (Env), freedom (Free), globalization (Glob), human and social development (H&SD), peace and security (P&S), politics and statehood (Pol), rule of law (RoL), science and technology (S&T), well-being (W-B). Each of these 10 sub-indexes is broken down into 2-8 component sub-indexes (a total of 43 in 2010 and 48 in 2015). The SGI was calculated only for 2010 and 2015 given the large amount of work, time and data availability.

The SGI 2010 covers 151 countries and the SGI 2015 – 155 states. The condition of including of countries into the SGI was the presence of data for at least 1 sub-index of each of the 10 main SGI components.

Initially, the SGI could vary from 0 to 1000 points and was calculated as a sum of its 10 main sub-indexes. Each of them could vary from 0 to 100 points and was calculated as the arithmetic average of its own sub-indexes. Since most of the selected sub-indexes provided by different international organizations (such as the UN, WB or IMF), which were used for calculating the SGI 10 aggregate indicators, don't necessarily use a 0-100 scale, they were respectively recalculated.

Inasmuch as the WGI is measured on a 0-1 scale based on the UN tradition, we considered it rational to recalculate the SGI and its 10 aggregate sub-indexes on the same scale, simply dividing by 1000 or 100, where appropriate. In this way, the SGI and WGI, as well as their components, can be directly compared.

## SGI vs. WGI

As we observe, the SGI and WGI have 2 common sub-indexes – P&S and RoL. Other 3 WGI main indicators are more aggregate than the rest 8 SGI sub-indexes. For instance, HR&P is partially compatible with Free (only of press), Pol, and H&SD (only gender aspects); SDev covers Econ, Env and partially H&SD (social component); HDev comprises partially H&SD (human component) and W-B. Regrettably, Glob and S&T aren't explicitly presented in the WGI. This fact may be considered as a drawback.

On the other hand, the WGI covers some aspects that are not explicitly found in the SGI: judicial system, quality of life, etc. Also, the WGI covers more countries than the SGI and the same number of countries for both years.

If the WGI leitmotif is *sustainable development* – a process for meeting human development goals while sustaining the ability of natural systems to continue to provide the natural resources and ecosystem services upon which the economy and society depend [4], the SGI promotes the idea of *smart development* understood as sustainable development + knowledge(-based) society, which generates, shares and makes available to all members of the society knowledge that may be used to improve the human condition [1].

Therefore, both the SGI and WGI are imperfect, but are mutually compatible and complementary.

## SGI results

In order to be else more comparable, we used the same sample of countries and regions for presenting the SGI results as in case of the WGI.

In 2010, Moldova's SGI was 0.509, while in 2015 – 0.546. So, Moldova improved its result by 0.037 or by 7.24%. It is explained by a positive trend of Econ (+0.098 or +21.69%), Free (+0.011 or +1.95%), Glob (+0.018 or +3.33%), H&SD

(+0.006 or +0.97%), P&S (+0.1 or +14.47%), Pol (+0.098 or +22.25%), RoL (+0.024 or +5.79%), and S&T (+0.043 or +11.95%). However, Env (-0.012 or -2.31%) and W-B (-0.016 or -3.62%) had a negative dynamics.

Given that the number of countries compared varies depending on the year and sub-index, we used the percentile rank for attributing ranks to each country. Thus, we once more use a 0-1 scale.

Moldova improved its SGI percentile rank from 0.437 in 2010 to 0.419 in 2015 (-0.018 or -4.06%). In any case, Moldova remained in the first half of the list.

If we calculate Moldova's WGI percentile rank, than we also observe a positive trend: from 0.436 in 2008 to 0.43 in 2011 (-0.006 or -1.28%). In 2010 and 2011 we state almost the same percentile rank for Moldova. It means that both the SGI and WGI are rather representative.

In relation to other countries, the SGI of Moldova was higher than that of Russia and Ukraine, but less than the one of Romania, Japan and USA both in 2010 and 2015, as in case of the WGI.

In 2015, the global SGI was 0.535 (+0.024 or +4.66% as against 2010). 7 of 10 SGI components had a positive dynamics, including: Econ (+0.032 or +6.23%); Glob (+0.019 or +3.72%); H&SD (+0.045 or +7.4%); P&S (+0.071 or +10.86%); Pol (+0.019 or +3.69%); RoL (+0.004 or +0.74%); W-B (+0.037 or +8.69%). Other 3 SGI aggregate indicators declined in value: Env (-0.007 or -1.31%); Free (-0.012 or -2.14%); S&T (-0.004 or -1.29%).

Japan, USA, EU (27 member states in 2010 and 28 in 2015), Romania, and LA&C performed better than the SGI global average, while Ukraine, Asia Pacific, CIS, Russia, Arab states, and Africa – worse both in 2010 and 2015. Moldova was below the global SGI in 2010, but above it in 2015.

One can ascertain than the WGI values are mostly higher than the SGI ones. It is probably of methodological nature. For ex., the USA S&T sub-index is noticeably higher than even that of Japan and the EU due to including the Global Think Tanks Index and Webometrics, where the USA is the undisputed leader. It means that even the SGI and WGI can be directly compared, but it's only formally, because the methodology of their calculation is rather different and any comparisons should be made very carefully. The WGI and SGI for the selected countries and regions are represented in Figure 5.

The SGI 2010 for the selected sample of 6 countries and 7 regions is depicted in Figure 6, while the SGI 2015 – in Figure 7. The SGI 2010 and 2015 selected rankings are given in Figure 8 and 9 correspondingly.

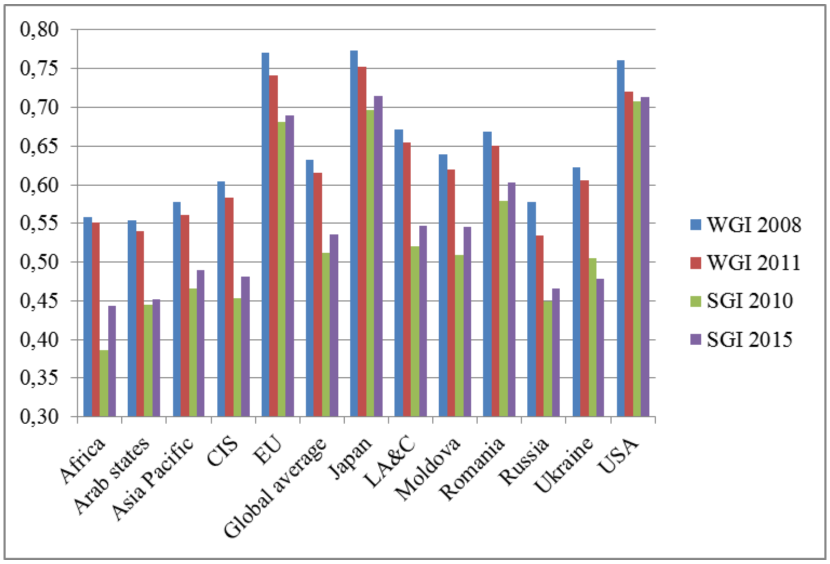


**Fig.5. WGI and SGI for the selected countries and regions**
*Source*: developed by the author based on [2; 6].

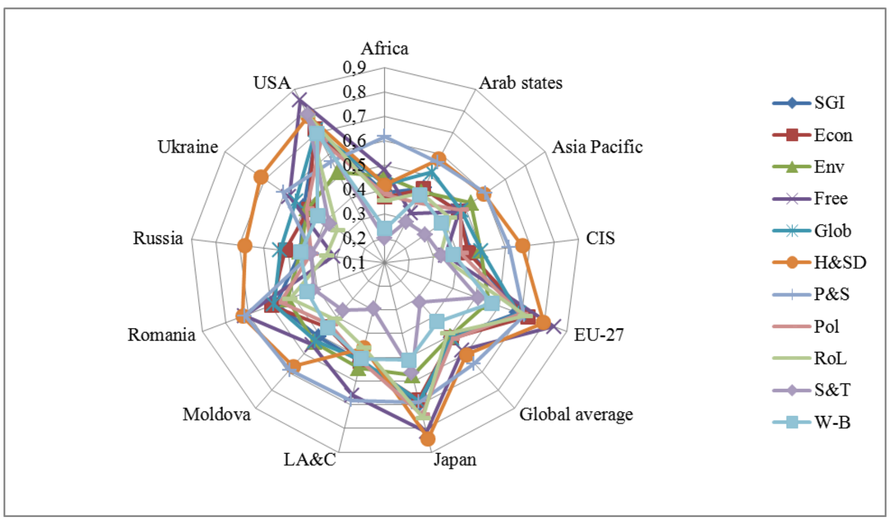


**Fig.6. SGI 2010**
*Source*: developed by the author.

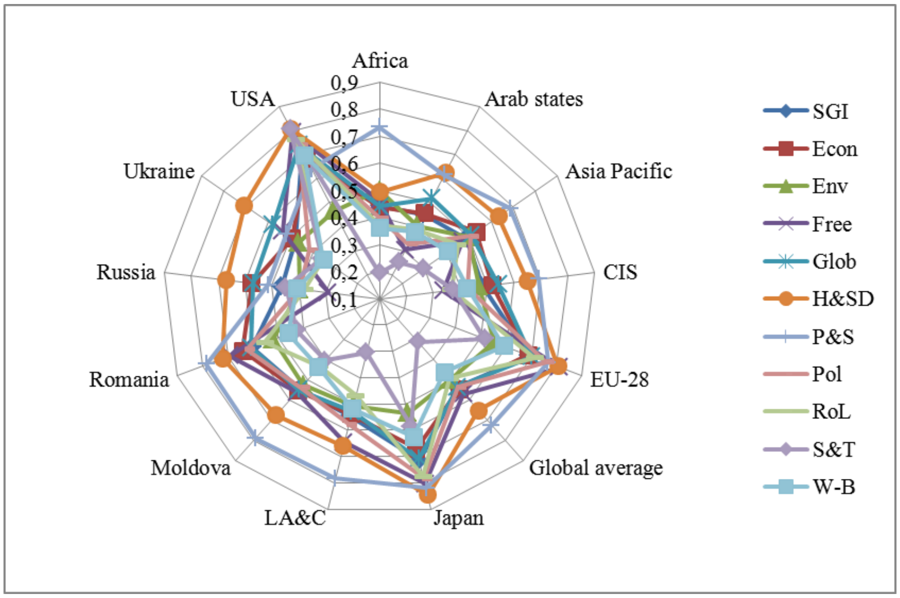


**Fig.7. SGI 2015**
*Source*: developed by the author.

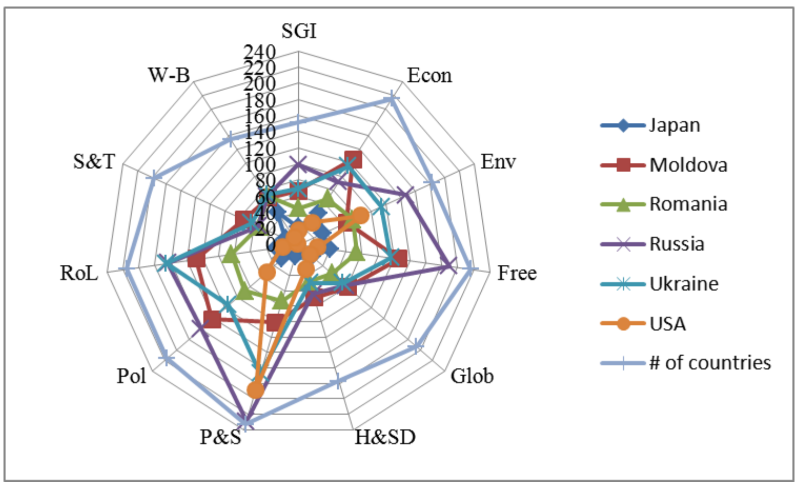


**Fig.8. SGI 2010 rankings**
*Source*: developed by the author.

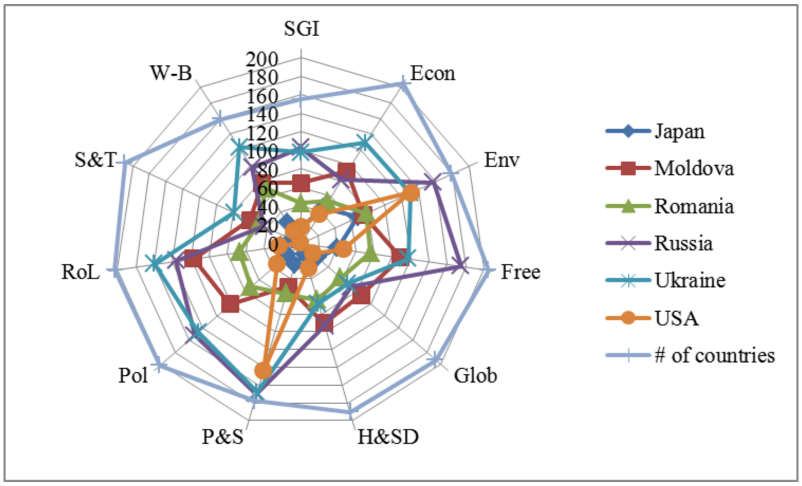


**Fig.9. SGI 2015 rankings**
*Source*: developed by the author.

Top and bottom 10 countries by the SGI are sorted in Table 2. As in case of the WGI, top 10 performers are the most developed countries, in particular Scandinavian ones, while the least developed African and Asian states have the poorest ranks.

Nonetheless, there are some differences. For instance, Canada, one of the G8 countries, entered top 10 both in 2010 and 2015. In 2015, Singapore, one of the 4 Asian Tigers, was ranked 8$^{th}$. Because of the recent wars in Arab countries, Syria, Yemen, and Libya were ranked in bottom 10 in 2015. Although, Turkmenistan had estimated $17,072 GDP (PPP) per capita, it was ranked only 146$^{th}$ in 2015 mainly due to its isolation from the world and violation of human rights [5]. Another tendency is that several ex-socialist countries, like Estonia, Czech Republic, and Slovenia, i.e. new EU members (since 2004), entered top 30 in 2015, while traditionally considered more developed Italy and Israel were ranked worse (37$^{th}$ and 41$^{st}$ respectively).

**Table 2. Top and bottom 10 countries by the SGI in 2010 and 2015**

| 2010 | | | 2015 | | |
|---|---|---|---|---|---|
| SGI rank | Top 10 countries | SGI | SGI rank | Top 10 countries | SGI |
| 1 | Denmark | 0.784 | 1 | Switzerland | 0.801 |
| 2 | Sweden | 0.784 | 2 | Norway | 0.789 |
| 3 | Finland | 0.781 | 3 | Denmark | 0.779 |
| 4 | Switzerland | 0.775 | 4 | Sweden | 0.775 |
| 5 | Norway | 0.773 | 5 | Finland | 0.774 |
| 6 | New Zealand | 0.764 | 6 | New Zealand | 0.774 |
| 7 | Netherlands | 0.761 | 7 | Netherlands | 0.766 |
| 8 | Canada | 0.752 | 8 | Singapore | 0.756 |
| 9 | Australia | 0.747 | 9 | Canada | 0.748 |
| 10 | Austria | 0.741 | 10 | Austria | 0.746 |
| SGI rank | Bottom 10 countries | SGI | SGI rank | Bottom 10 countries | SGI |
| 151 | Afghanistan | 0.246 | 155 | Afghanistan | 0.272 |
| 150 | DRC | 0.252 | 154 | Sudan | 0.304 |

| | | | | | |
|---|---|---|---|---|---|
| 149 | Sudan | 0.279 | 153 | Iraq | 0.314 |
| 148 | Chad | 0.283 | 152 | Syria | 0.315 |
| 147 | Myanmar | 0.290 | 151 | CAR | 0.317 |
| 146 | Iraq | 0.303 | 150 | Yemen | 0.318 |
| 145 | Burundi | 0.303 | 149 | DRC | 0.322 |
| 144 | Guinea | 0.311 | 148 | Chad | 0.333 |
| 143 | Zimbabwe | 0.317 | 147 | Libya | 0.358 |
| 142 | CAR | 0.318 | 146 | Turkmenistan | 0.368 |

*Source*: developed by the author.

## CONCLUSIONS

The success of governance depends on many factors. A poor score even of a sub-index may result in losing overall leadership. E.g., the USA and Japan are traditionally considered the most developed countries, but they aren't in top 10, because of underperformance in such areas as Env or P&S.

Although the WGI is a complex and useful indicator, it wasn't updated since 2011. An alternative to it would be the SGI. Both indexes have their strengths and weaknesses, but we consider them mutually complementary rather than substitutable or competitors. At least, we haven't found more complex and recent indexes yet. The evolution of both the WGI (-2.53%) and SGI (+4.66%) reflect global changes, trends and major events, such as crises and wars. The dynamics of the WGI and SGI components reveal particular governance tendencies worldwide. The comparison of both indexes by regions and countries identifies the best and worst performers. Maybe the most useful is to analyze the change of indexes and sub-indexes over time at the level of a particular country or region.

The Republic of Moldova had a slightly negative (-3.13%) WGI dynamics in the period 2008-2011, including a negative trend of 3 of 5 sub-indexes. In return, Moldova improved its SGI result by 7.24% in 2010-2015, including 8 of 10 aggregate indicators, and even overpassed the global average by 2.04%.

In case of Moldova, it is especially useful to compare its governance performance with that of neighbor countries, i.e., Romania and Ukraine, as well with the EU, CIS and Russia. Moldova performed better than its eastern partners, but worse than western ones. It's especially important in the context of signing the Association Agreement between Moldova and the EU in 2014. Scrupulous implementation of this Agreement and of the European standards as a whole should reduce Moldova's gap in governance performance, even despite Brexit or Grexit. Taking over the Romanian experience, in particular, in fighting corruption (probably the greatest vulnerability of Moldova), can considerably increase the effectiveness, efficiency and quality of Moldovan governance, provided that there is a certain level of political, economic and social stability.

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# *FINANCE*

# THE IMPACT OF DIVIDEND POLICY ON FIRM VALUE. A PANEL DATA ANALYSIS OF ROMANIAN LISTED FIRMS

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**Abstract**: *The aim of the paper is to investigate the impact of dividend policy on firm value. Our sample consists of sixty-three non-financial firms listed on the Bucharest Stock Exchange over the period 2001-2011. Employing a fixed effects model, we found that dividend pay-out ratio positively influences firm value after controlling for other firm-specific variables. Furthermore, leverage and firm size were found to have a positive effect on firm value.*
**Keywords**: *dividend policy, firm value, emergent economies, Romania, listed firms.*

## INTRODUCTION

Numerous factors affect the firm's dividend policy, among them legal constraints, contractual constraints, the firm's growth prospects, owner considerations, and market considerations (Gitman and Zutter, 2012). On the other hand, dividend policy affects significantly firm's ability to raise money and its value.

Several theories have highlighted the role of dividend policy. According to the dividend irrelevance theory (Miller and Modigliani, 1961), in perfect capital markets (no taxes, no transactions costs, and no other market imperfections), dividend policy does not affect firm value. The role of dividend policy has been reconsidered in imperfect capital markets. According to the residual theory, dividends are paid by a firm only after all acceptable investment opportunities have been undertaken. Gordon (1963) and Lintner (1962), in the dividend relevance theory, suggest a direct relationship between a firm's dividend policy and its market value. Their "bird-in-the-hand" argument states that existing and potential investors consider current dividends less risky than future dividends or capital gains. Baker and Wurgler (2004) argue for a "catering theory of dividends" in which firms cater to the preferences of investors, initiating or increasing dividend payment in periods when the exogenous demand for dividends is high.

Despite the importance of dividend policy, we still know little about its implications on firm value. Numerous papers studied the effect of dividend pay-out on firm value, but the results are still mixed and inconclusive.

The aim of the paper is to analyse the impact of dividend policy on firm value using a sample of Romanian firms listed on the Bucharest Stock Exchange (BSE) over the period 2001-2011. We contribute to the extant literature by providing new insights on the effect of dividend policy on firm value.

The paper is organized as follows. Section 2 presents an overview of the extant literature on dividend policy in Romania. Third section describes the data and methodology used in paper. Section 4 presents the empirical results, while the last section concludes.

## LITERATURE REVIEW ON DIVIDEND POLICY IN ROMANIA

Only a few papers studied the dividend policy in Romania and its implications on firm dynamics. Dragotă et al. (2009) focused on the effect of corporate taxation on dividend policy for the Romanian listed firms over the period 1998-2005. Using a sample of 65 firms, the authors found that corporate tax burden does not play a major role in the dividend decision making process. However, the authors highlighted that Romanian listed firms changed the dividend policy in 2005, after Romania introduced a flat tax system.
Barbuta-Misu (2013) analyzed the dividend policy of five Romanian Financial Invest Companies (FICs) over the period 2006-2012 and found that the financial crisis affected the dividend distribution rate in 2008 and 2009. Similar results have been obtained Berceanu et al. (2012) on the same sample of FICs. To the best of our knowledge, there is no paper on the effect of dividend policy on firm value.

## DATA AND METHODOLOGY

In this study we used financial data collected manually from the financial annual reports of sixty three five Romanian non-financial firms listed on the BSE over the period 2001-2011. Also, we retrieve data on stock prices from the BSE website.

Our dependent variable (TQ) is computed as the ratio between market value and replacement value of its assets (Lewellen and Badrinath, 1997). In order to minimize the influence of outliers we use the logarithm of firm value.

Dividend pay-out ratio (DPR), our independent variable of interest, is calculated by dividing the firm's cash dividend per share by its earnings per share. Similar to other studies (i.e., Rehman, 2016), we employ as control variables that could have an impact on firm value the following: leverage (LEVE), firm size (FS, proxied by total sales), profitability (ROAN), and liquidity (CURR_RA). Table 1 presents an overview of the dependent and independent variables employed in the models.

**Table no.1 Variables description**

| Variable | Abbreviation | Description |
|---|---|---|
| Firm value | TQ | Natural logarithm of market value of firm over replacement value of its assets |
| Dividend payout ratio | DPR | Dividend per share over earnings per share |
| Debt ratio | DEBTRA | Total liabilities over total assets |
| Firm size | FS | Natural logarithm of total sales |
| Profitability | ROAN | Net profit over total assets |
| Liquidity | CURR_RA | Current assets over current liabilities |

*Source: Research results*

To test the relation between dividend payout ratio and firm value, we consider the following model:

$$TQ_{i,t} = \beta_0 + \beta_1 * DPR_{i,t} + \beta_2 * DEBTRA_{i,t} + \beta_3 * FS_{i,t} + \beta_4 * ROAN_{i,t} + \beta_5 * CURR\_RA_{i,t} + u_i + \varepsilon_{i,t}$$

where: $TQ_{i,t}$ denotes the firm value for firm *i* in year *t* (i=1,….,N; t=1,…, T); $DPR_{i,t}$, our independent variables of interest, measures the dividend payout ratio for firm *i* in year *t*; $DEBTRA_{i,t}$, $FS_{i,t}$, $ROAN_{i,t}$, and $CURR\_RA_{i,t}$ represent control variables for firm *i* at time *t*; $\beta_0$, $\beta_1$, …, $\beta_5$ are parameters to be estimated; $u_i$ are firm-specific fixed effects; $\varepsilon_{i,t}$ is an idiosyncratic disturbance term.

We test the following research hypothesis:

Ho: dividend policy has a significant effect on firm value.

## EMPIRICAL RESULTS

Table no.2 present the descriptive statistics for all variables employed in the study. For our sample of firms, the mean value of dividend payout ratio is 0.22 (or 22.1%), with significant differences across firms and across time as highlighted by minimum and maximum values. The mean value is low if we compare it with the values reported in other studies – Kalay and Lemmon (2008) reported dividend payout ratio between 35% to 169% over the period 1972-2003 for their sample of US firms in the Compustat database. We also notice the difference between mean (0.22) and median (0.0) value for DPR, suggesting that a low number of firms are paying high dividends, while the rest is paying no dividends or low dividends. The value for debt ratio is in line with those reported by other studies for the Romanian listed firms over almost the same period (Botoc, 2013; Brendea, 2014).

**Table no.2 Descriptive statistics**

| | Mean | S. D. | Minimum | Maximum | Obs. |
|---|---|---|---|---|---|
| TQ | -0.22745 | 0.614136 | -2.58566 | 2.497648 | 475 |
| DPR | 0.221335 | 0.416423 | 0 | 3.630712 | 475 |
| DEBTRA | 0.390721 | 0.276235 | 6.52E-05 | 1.774894 | 475 |
| FS | 11.53006 | 1.566411 | 7.068249 | 16.63395 | 475 |
| ROAN | 0.016072 | 0.134402 | -1.23465 | 0.821012 | 475 |
| CURR_RA | 2.217458 | 2.287344 | 0.160397 | 18.22099 | 475 |

*Source*: *Research results*

In table 3 we present the Pearson correlations between variables. According to our expectations and to results obtained in other studies we found a positive correlation coefficient between dividend payout ratio and firm value. Firm size and the degree of indebtedness are positively correlated with firm value. We also found a negative correlation between debt ratio and dividend payout ratio, which imply that more leveraged firms are likely to pay lower dividends. Given the fact that correlations among explanatory variables are below 0.5, the multicollinearity is not a concern.

**Table no.3 Correlation matrix of variables**

| | TQ | DPR | DEBTRA | FS | ROAN | CURR_RA |
|---|---|---|---|---|---|---|
| TQ | 1 | | | | | |
| DPR | 0.086 | 1 | | | | |
| DEBTRA | 0.368 | -0.209 | 1 | | | |
| FS | 0.261 | 0.129 | 0.241 | 1 | | |
| ROAN | -0.015 | 0.206 | -0.451 | 0.020 | 1 | |
| CURR_RA | -0.062 | 0.012 | -0.492 | -0.174 | 0.168 | 1 |

*Source: Research results*

We employ Hausman test in order to choose between fixed effect model and random effect model (null hypothesis of a random effect model) (Anton et al., 2016). The results reported in table no. 4 reveal that $H_0$ is rejected and the fixed effect panel models provide better fit of data.

**Table no.4 Results for Hausman test**

| Correlated Random Effects - Hausman Test<br>Equation: EQ01<br>Test cross-section random effects | | | |
|---|---|---|---|
| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
| Cross-section random | 37.301287 | 5 | 0.0000 |

*Source: Research results*

The results of our models are presented in table no 5. In the first model we test the impact of dividend payout ratio on firm value during the period 2001-2011. In order to exclude the effect of financial crisis on firm value, in the second model we employ only data for the period 2001-2007. According to results obtained for the first model, dividend policy has a positive effect on firm value. Our results for the pre-crisis period confirm the previous findings – dividend payout ratio positively influences firm value. Hypothesis 1 is accepted at a significance level of 10 %. Our results confirm the findings of the previous studies focused on firms operating in emerging economies (i.e., Rehman, 2016). Investors value more the Romanian firms which pay higher dividends from their profits.

**Table no.5 Impact of dividend payout ratio on firm value**

| Variables | Model 1<br>(2001-2011) | Model 2<br>(2001-2007) |
|---|---|---|
| C | -2.729828 (0.524163) | -6.292270 (0.789697) |
| DPR | 0.106780* (0.062023) | 0.224469* (0.122060) |
| DEBTRA | 1.244533***<br>(0.157499) | 1.009904***<br>(0.213011) |
| FS | 0.173759***<br>(0.046296) | 0.516569*** (0.070185) |
| ROAN | 0.284002 | -0.234612 |

| | | |
|---|---|---|
| | (0.197861) | (0.305531) |
| CURR_RA | -0.007004 (0.014197) | -0.073298*** (0.023191) |
| R-squared | 0.556428 | 0.633881 |
| Adjusted R-squared | 0.483407 | 0.542351 |
| Total panel (unbalanced) observations | 475 | 475 |
| Standard error in parentheses *** p<0.01, ** p<0.05, * p<0.1 | | |

*Source:* Research results

Our results show that leverage and firm size have a positive impact on firm value. Our findings regarding the positive effect of leverage on firm value are in line with those reported by other studies (Masulis, 1983; Martínez-Sola *et al.*, 2013). On the other hand, profitability and liquidity do not have a statistically significant influence on firm value.

As a supplementary robustness test, following Lintner (1956), we include in our models the previous year dividend payout ratio. We ran again the models and the new results (available upon request) remained broadly consistent with the previous findings.

## CONCLUSIONS

An increasing number of Romanian listed firms decided to pay dividends in the pre-crisis period. The global financial crisis affected the Romanian firms' profitability and also their dividend pay-out policy. However, we know little about the effects of dividend policy on the firm value.

The aim of the paper is to investigate the influence of dividend policy on firm value for the Romanian listed companies. For this purpose, we employ a Romanian firm-level panel data-set over the period 2001–2011. The results of the fixed-effects model show that investors valued positively firms which paid higher dividends over the period 2001-2011. Our findings suggest that managers can create value by increasing dividends to an optimal level. We also found that firm value is positively affected by leverage and firm size. Our results are useful for managers, for existing and potential investors, and also for academics.

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# DEVELOPING ECOLOGICAL AGRICULTURE IN ROMANIA IN TIME OF ECONOMIC CRISES. ANALYSIS ON NATIONAL AND EUROPEAN REGULATIONS AND MEASURES

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**Abstract**: *The aim of the study is to analyze the way in which the national and European regulations regarding the developing of ecological agriculture can be a measure of reducing the impact of the economic crisis on the public agriculture policy in special and on the whole economy, in general. Through this paper, academics and practitioners will understand why in the time of economic crisis is important to develop new programs like that of ecological agriculture, which can contribute through its investments and by helping small business and cooperatives to the reduction of the crisis impact in the agricultural sector and in economy*
**Keywords**: *ecological agriculture, economic crisis, regulations, marketing instruments, European Union.*

## 1. INTRODUCTION

The consequences of the economic crisis extend well beyond the economy itself. It affected the entire World, with a great impact on the EU Member States, because of the Common Market to which all the 28 Member States are part. The economic positions of most countries have been altered dramatically.

The agricultural policy of all 28 EU members was dramatically affected by the crisis. The Common Agricultural Policy (CAP) is the agricultural policy of the European Union. It implements a system of agricultural subsidies (member states agricultural policies) and other programs and it address to all member states.

Revitalizing the economy involves increasing government spending, thus accepting the budget deficit and currency devaluation to boost exports. This economic policy was planned by British economist J. M. Keynes. He proposed, to increase public investment for a better income distribution and controlled limited inflation.

The assumption of this study is that developing ecological agriculture; represents a type of State public investment in the agriculture sector, and it can be an opportunity in surpassing the effects of the economic crisis.

This paper attempts to provide an answer to a number of main research questions:
In which consisted the economic crises in Europe, especially on agricultural sector?
What were measures and regulation taken in Romania for developing the ecological agriculture?
Which are the marketing strategies and instruments used for developing the ecological agriculture and how they contribute to the success of this measure?

The study will be mainly qualitative and it will try to identify in which consisted the impact of the economic crisis in the agriculture sector in special, and it will analyze the measures and regulations contributed to the developing of the ecological agriculture. The paper will focus on Romania, as case study, a country member of the EU and subjected to the EU regulations.

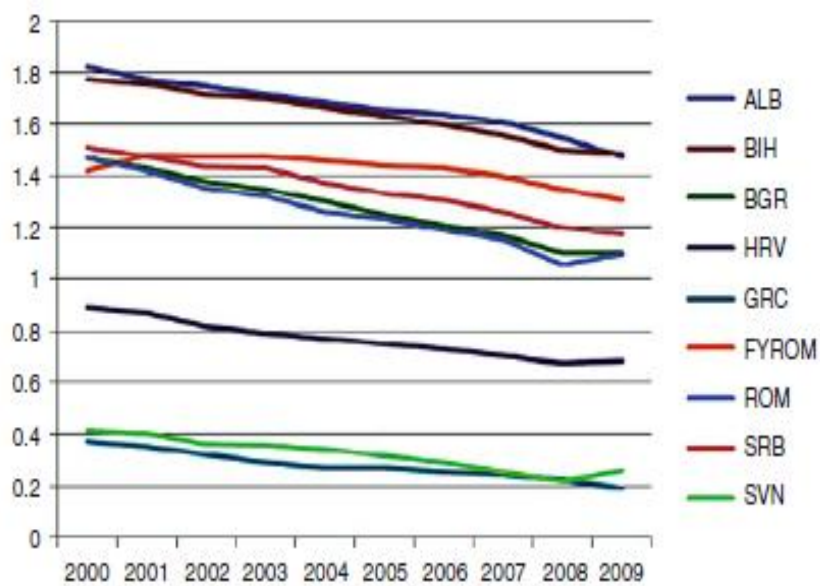
The qualitative analysis will try to identify the benefits of such a measure and also the importance of the marketing strategies in promoting this measure.

## 2. SHORT PRESENTATION OF THE ECONOMIC CRISIS IN EUROPE

The economic crisis in Europe has brought forward the complex interaction among States and Markets. At first instance, the European crises seemed to be originated in, and dominated by the Markets' financially-motivated preferences, especially in the case of Greece, Spain and Italy. However, the balance in the interplay was gradually restored due to the unrehearsed yet coordinated and still mighty, at the European Union, State-based Political decisions to overcome the crisis, apparently in favor of a political union throughout the EU (Koutsoukis & Roukanas, 2014).

The consequences of the crisis were not the same for all the countries of the region. Thus, some countries (Romania, Bulgaria, the Baltic countries) showed a stronger growth rate momentum compared with other countries, whereas countries that had serious structural problems (Western Balkan countries) benefited less from the boost in international demand for exports of their products. Finally, countries such as the Czech Republic, Poland and Slovakia experienced growth rates that supported their efforts to address the serious debt problems they were facing.

**Figure 1. The performance of the GDPPC differentials from EU15 average**




*Source: Karasavvoglou & Polychronidou, 2013, p. 26*

Romania. Romania has been a member of the EU since 2007 and of NATO since 2004. After 1989, the country had a large period of economic imbalance. There was a need of structural reforms and industrial renewal. From 2000, the Romanian economy showed macroeconomic stability expressed through high growth rates, low unemployment and low inflation rates. The global crisis affected the economy and a decline in growth rate was marked down. It should be mentioned that Romania has significant natural resources and important industrial activities such as metallurgy, petrochemicals and machinery.

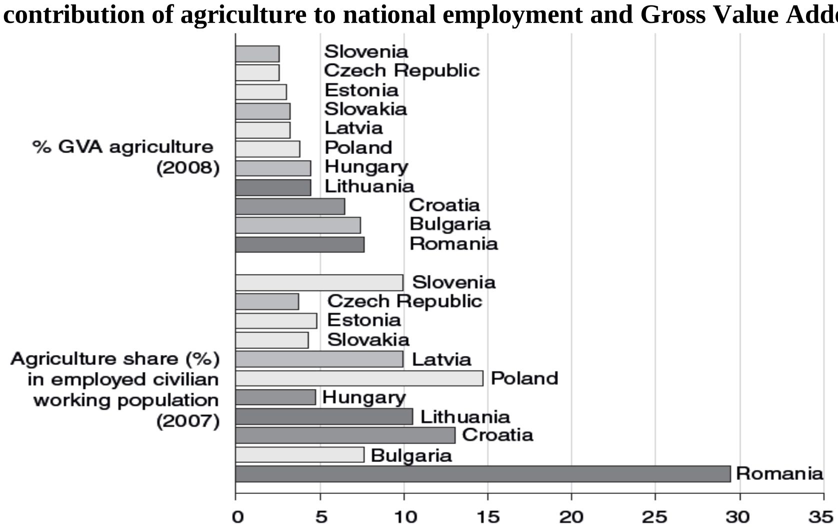
### 1.1. The agricultural sector and the economic crisis

The Common Agricultural Policy emerged with the signing of the Treaty of Rome in 1957 by six EU original member states. CAP objectives were pursued "by promoting technical progress and by ensuring the rational development of agricultural production and the optimum utilization of the factors of production, in particular labour", by providing a "fair standard of living for the agricultural community" and by ensuring that "supplies reach consumers at reasonable prices" (European Community, 1957: art. 39.1).

The early CAP introduced a system of guaranteed prices through public intervention, and some funding for structural actions, such as improving farm size and infrastructure. By bringing stable prices and a predictable planning horizon, the CAP helped the modernization of agriculture and the diffusion of technological change. At the same time, a considerable restructuring of the sector took place, with a rapid outflow of labor to jobs in the growing manufacturing and services sectors in the 1960s and 1970s, which resulted in larger average farm size (Bureau, 2005).

The CAP has been subjected to further modifications through passing a "Health Check" in November 2008. They represented a follow-up of the 2003 reforms aimed at modernizing, streamlining and simplifying the CAP.

**Figure 2. The contribution of agriculture to national employment and Gross Value Added**




Source: *Eurostat database, online, available at: http://epp.eurostat.ec.europa.eu and World Bank's World Development Indicators database, online, available at: http://databank.worldbank.org*

Figure 2 shows the importance of the agriculture in the economy of each member states. It can be observed that in both cases, the population working in agriculture and the added value were higher for Romania, demonstrating that the agricultural sector plays and important role of the Romanian national economy.

## 2. COMBATING THE ECONOMIC CRISIS TROUGH ECOLOGICAL AGRICULTURE

Some studies made in the EU regions, demonstrated some similar characteristics of the regions in particular in areas where the development of ecological products as niche market products can be an important element for the improvement of the competitiveness of the products are produced within their area and therefore for the increase of their GDP (Karasavvoglou & Polychronidou, 2013: 137).

The development of organic area in the EU should also be seen in light of the support provided for this farming practices through rural development and as a method of surpass the economic crisis. For this fact, in the last years, for the EU, the developing of ecological agriculture in the Member States became an important aspect of the CAP.

### 2.1 Some aspects regarding ecological agriculture

The ecological agriculture appeared as an alternative to intensive industrialized agriculture, being an accomplishment of agriculturists affectionate by nature, based on efficient methods and meanings for production, especially from the economic perspective.

The practice of ecological agriculture involves building the strengths of natural ecosystems into agro-ecosystems, purposely disturbed to produce food and fiber. The overall strategies include using practices that (Magdof, 2007: 109–117):

- grow healthy plants with good defense capabilities,
- stressing pests, and
- enhancing populations of beneficial organisms.

According to 2092/1991 regulation revised and completed through 834/2007 regulation, approved by Economic European Community Council, the community countries use with the same meaning the following terms:

- *organic agriculture* (England),
- *biological agriculture* (Greece, France, Italy, Netherland and Portugal)
- *ecological agriculture* (Denmark, Germany, Spain and Romania).

In the EU states, like in Romania, during communism, agriculture was not considered a strategic branch for a nation’s development. An ecological consciousness did not figure high on the agendas of authoritarian regimes. After 1990, some post-communist farm economies progressed slower than others, and environmental pressures mostly diminished with agricultural restructuring. In parts of Central and Southeastern European countries, increases in numbers of low-input small farms have resulted in some, though largely unintended, ecological benefits.

Central and Southeastern European countries capitalized on such potential to different degrees, also in response to increasing demand for organic products from

Western Europe and other developed countries. The more advanced economies (e.g. the Czech Republic, Hungary) supported organic farming via regulatory and institutional arrangements, such as issuing certifying procedures. Others (e.g. Romania) lagged behind, often being labeled as countries with emerging ecological agriculture as opposed to countries with rapidly expanding organic agriculture (Znaor, 2001).

EU accession and pre-accession preparations have partly helped to develop agri-ecological legislation in these countries. They have geared to some extent the agricultural and rural development process towards more environmentally aware pathways. The compulsory adoption of CAP elements under its second pillar (Rural Development Regulation) has acted as an important catalyst the economies of these countries to initiate ecological programs in agriculture (Bennett, 2001).

From 2014 onwards, the new Common Agriculture Policy (CAP), is a *greener* CAP. All Member States, all rural areas and all farmers will take simple, proven measures to promote sustainability and combat climate change. Between 2014 and 2020, over EUR 100 billion will be invested in the European Union's rural areas to help farming meet the challenges of soil and water quality, biodiversity and climate change (EC, Agriculture and Rural Development official website):
'Greening' of 30% of direct payments to farmers will be linked to three environmentally-friendly farming practices: crop diversification, maintaining permanent grassland and conserving 5%, and later 7%, of areas of ecological interest as from 2018 or measures considered to have at least equivalent environmental benefits.

At least 30% of the rural developments programmes' budget will have to be allocated to agri-environmental measures, *support for organic farming* or projects associated with environmentally friendly investment or innovation measures.

**2.2. Measures and regulations regarding ecological agriculture in Romania**

The new EU member states have adopted the EU legislation (the so-called *acquis communautaire*) pertaining to agriculture starting from the date of their accession.

As part of the EU, Romania, not only adopted the aqcuis communautaire regarding the CAP, but also implemented and created the framework for a good developing of the ecological agriculture.

In the E.U. organic agricultural products and food stuffs are defined by Council Regulation EEC 2092/91 as it has been amended up to date. This regulation with its amendments has established a specific framework within the EU as regards organic farming; it has also defined the requirements for agricultural products and food stuffs in association with the production methods used in organic farming as well as the development of the market of organic food.

The Regulations EC 834/2007 and EC, 889/ 2008 set a new course for developing organic farming further, with the following aims:

- sustainable cultivation systems;
- a variety of high-quality products;
- greater emphasis on environmental protection;
- more attention to biodiversity;
- higher standards of animal protection;

- consumer confidence;
- protecting consumer interests.

Furthermore, the European Commission launched its Organic Farming Campaign in 2008 aiming to inform consumers about the importance and benefits of organic farming and food production (EU 2011). The campaign focuses on increasing consumers' awareness and recognition of organic products.

Apart these regulations, which are applied directly on the national level, there are also some national regulations. The Order no.181/2012 for the approval of rules on the organization of inspection and certification, approval and certification and inspection bodies and supervising control bodies.

There are created bodies of inspection and certification. Operators complied with production rules will receive a certificate of organic product will be labeled with the words, environmentally friendly products. On an organic product label affixed following entries are required: refer to organic production, logos, names and code inspection and certification body which carried out the inspection and issued the certificate of organic product.

National Logo,, ae "specific organic products, together with the Community logo are used to supplement labeling for consumers to identify products produced in accordance with organic production methods.

**Figure 3: National Logo on Ecological Agriculture**

*Source: http://www.madr.ro/ro/agricultura-ecologica.html*

The right to use the logo,, ae "on products, labels and packaging of organic products are the producers, processors and importers registered with MARD. In order to obtain the right to use the logo 'ae' certification and logo "ae" communication, applicants will complete the request form.

## 3. MARKETING INSTRUMENTS IN DEVELOPING ECOLOGICAL AGRICULTURE

In order to develop the ecological agriculture, Romania and EU, created also a marketing strategy, in order to complete the legislative framework in the area. The strategy, wants also to underline the importance to change the attitude of persons to consume organic products and to understand the importance of ecological agriculture.

As marketing instruments which are used in the public administration and which are influencing the change of the system, we can underline: product, price, brand, distribution, personal sale, paid publicity, sales promotion, and packaging, manner of presenting, post-sale services, logistics and marketing research (Borden, 1964; Fernández Bendito & Ramírez,2011).

*The logo (see Figure 3, below)* and the labeling rules are an important part of the organic regulations. With this regulatory framework the European Union provides conditions under which the organic sector can progress in the line with production and market developments, thus improving and reinforcing the EU organic farming standards and import and inspection requirements.

The main objective of the European logo is to make organic products easier to be identified by the consumers. Furthermore it gives a visual identity to the organic farming sector and thus contributes to ensure overall coherence and a proper functioning of the internal market in this field.

**Figure 3. European Logo on Ecological Agriculture**

*Source: http://ec.europa.eu/agriculture/organic/downloads/logo/index_en.htm*

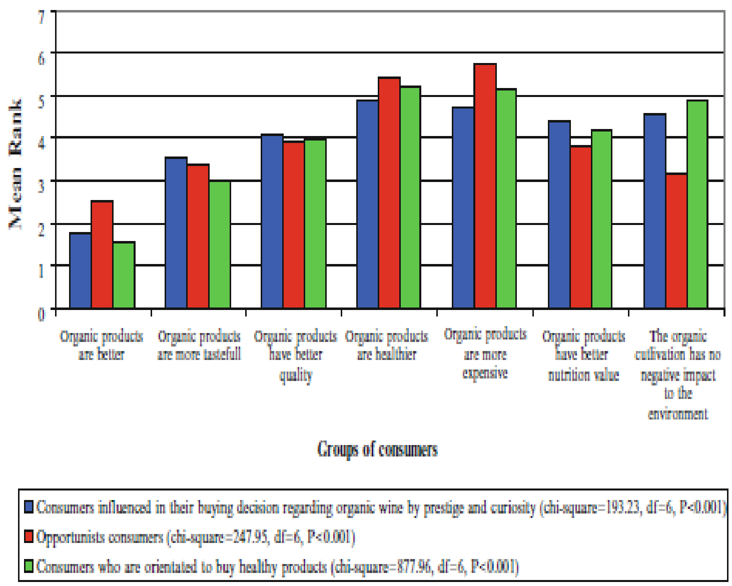
The use of the logo and correct labeling is obligatory for all organic pre-packaged food produced within the European Union. In certain cases, it is also possible to use it on a voluntary basis. This means that non pre-packaged organic food produced within the EU or organic products imported from third countries might display the new logo.

A large number of studies on *branding, product differentiation*, labeling issues and consumer behavior are mentioned in marketing and business literature. According to some authors (see Booth, 1988:39-54), cultural and economic factors, consumer's personality and attitudes, as well as values and emotions have an impact on consumers' decision making process regarding food selection. It was also argued that biological, psychological and socio-demographical consumer characteristics, marketing of the product, economic and cultural environment affect consumers' purchasing decisions. (Steenkamp, 1996)

Kotler (1994) as well identified that cultural, social, individual and psychological factors influence consumers' buying behavior.

In a study developed, it was identified that consumers mainly buy organic food products due to health reasons and the fact that they consider them more nutritious for kids. On the other hand, the main reasons consumers do not purchase organic food products are their high price and low availability in the market (Hutchins & Greenhalg, 1997).

**Figure 4. Consumer perception regarding ecological products**




*Source: Tsourgiannis L., Karasavvoglou A., 2013, p. 143*

The opportunists comprise the 21 % of the sample and are the consumers who act opportunistically. They buy organic wine but they are not influenced either by health and environment protection or by their curiosity or prestige (Tsourgiannis *et al.*, 2013).

On the other hand, consumers who are orientated to buy healthy products consist of the 60 % of the sample. These consumers are interested in buying products with no chemical additives. Furthermore, the environmental consequences of the product as well as the nutrition value of the product are also some factors that affect consumers buying behavior (Tsourgiannis *et al.*, 2013).

## 4. CONCLUSIONS

The early transition disruption of output or economic recession has had a much greater impact than the effects of other factors such as budgetary allocations, foreign credits and political pressure from environmentalists. In some cases, these unintended benefits were taken forward via improved formulation and enforcement of environmental protection legislation, particularly in the more advanced CEE economies. A dimension of this environmental protection legislation is also the *ecological agriculture*, which can be an opportunity to surpass the economic crisis.

Due to the support of the EU policies and regulations the agriculture from Romania and from Central and Eastern countries is economically recovering, bringing along a host of environmental problems specific to the intensification of production. The organic farming sector in Europe has rapidly developed in the past years. This increase characterizes not only the area under organic farming, but also the number of holdings and of overall organic operators registered in the EU-28. The EU's newest Member States have shown encouraging developments in this respect, in particular in the context of additional financing provided by the EU for this type of production since their accession.

Rendering any environmental improvements that have emerged throughout the post-communist region long lasting would require the support of robust regulation and institutional build-up at the national, regional and local level. Stronger and context-specific measures, in addition to general CAP regulations addressing environmental protection and animal welfare, would need to be incorporated into farm modernization strategies of states economies.

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# TOTAL FACTOR PRODUCTIVITY DETERMINANTS IN DEVELOPED EUROPEAN COUNTRIES

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**Abstract**: *In this paper we assess the determinants of total factor productivity (TFP) growth in a group of developed European countries, during the period 2000-2013. In this regard, starting from the existing literature, we considered as determinants of TFP, knowledge and technology, infrastructure development, education quality, health level, the intensity of capital use and the manifestation of the financial crisis. Our findings show that in the case of the analysed countries, accumulation and transmission of technology and knowledge, but also the infrastructure development have the most significant positive impacts on TFP growth. On the other hand, the manifestation of the financial crises and the low intensity of capital use have strong negative effects on TFP growth, while education quality and health play a small role in influencing productivity.*
**Keywords**: *total factor productivity, knowledge, technology, education, infrastructure, intensity of capital use, crisis*

## INTRODUCTION

On the background of the aims of each country to obtain sustainable development, economic growth and the welfare of its people, one of the most important issues to be addressed is represented by enhancing productivity, and particularly the total factor productivity, leading thus to the necessity of analysing the ways to do it. However, such a task is not an easy one, while productivity is a complex concept, and the process for achieving it depends on identifying and understanding its determinants and their both separate, but also combined, influences on it.

Moreover, while productivity is usually constantly influenced by some determinants, in time it may occur situations in which it may be influenced by new and important factors, including dangerous phenomena as economic and financial crisis.

Starting from the above considerations, we consider in this paper that the experience gained by developed countries in Europe, regarding their level of productivity, in the period starting from 2000 till 2013, can offer us the basis of an analysis on the impacts of some specific determinants on productivity.

## LITERATURE REVIEW

There is a general understanding that productivity, as dimension of efficiency, can simply be expressed as an output-input ratio, comparing the results achieved by using certain inputs. Starting from this idea, it can be considered that the final total output can be viewed as a sum of the outputs determined by each of the inputs, taken separately and, in the end, productivity can be assessed by assessing the productivity of each single input. Thus, in literature, we often find productivity assessed as single-factor productivity, one of the most common measures of this kind being labour productivity, measuring how many units of output are obtained per unit of labour input.

However, it is obvious that the level of the total outputs will depend also on the way each input is used in conjunction with the other inputs, such as capital or materials, and mainly on the capability to use more intensely each of the inputs. This is why, many times, even using apparently the same basic inputs, some entities reach better results than the others, or vice versa. Because of these facts, researchers have introduced and taken into consideration the concept of total factor productivity (TFP), as a different measure of productivity, which is invariant to the dimension of the specific known inputs.

The concept of total factor productivity was developed starting from the research of the neoclassical economist Solow (1956, 1957), who emphasized that part of the productivity growth cannot be explained by the capital and labour input. This residual part, which could be explained by the different intensity of the use of the capital, was later called total factor productivity or multifactor productivity. Under such circumstances, total factor productivity can explain why higher-TFP producers will get bigger outputs with the same set of observable inputs than lower-TFP ones (Syverson, 2011), and becomes so, in the opinion of many economists a much proper measure for the differences in efficiency.

However, total factor productivity remains difficult to assess, because of its residual nature, which makes it to depend on changes in not observable inputs as the dimension of capital or of labour, and these facts have led to different interpretations regarding its determinants.

Many researchers, starting with Solow (1957) and followed by Romer (1990), Prescott (1998) and others, have attributed the central role in determining the total factor productivity to differences in technology and sustained that knowledge is probably the most important factor which improves productivity, beside the observable inputs. In this regard, trying to measure the dimension of knowledge, most of the time authors proxied it with R&D expenses and patent data or with the information and communication technologies.

Empirical studies (Guellec and van Pottelsberghe de la Potterie, 2001; Ulku 2004, Bronzini & Piselli, 2009), have demonstrated the positive impact of R&D activities on TFP in several OECD countries, while other studies (Chen and Dahlman, 2004; Abdih and Joutz, 2005), used data on patents to prove the importance of knowledge in enhancing TFP. These authors sustain and demonstrate that technological knowledge, produced through R&D activity and diffused in economy has a direct effect on TFP, generating productivity growth. Moreover, Jorgenson & Stiroh (2000) proved also, for U.S., that technology, proxied by the production and the use of information and communication technologies, promotes growth.

At the same time, transfer of technology is usually considered important for enhancing productivity and some studies (Keller and Yeaple, 2003; Griffith et al., 2003) show that foreign direct investments (FDI) improves that transfer and also TFP. On the other hand, other authors found either a negative impact of FDI (Aitken and Harrison, 1999) or no effect of them (Hanson, 2001), leading to the conclusion that FDI may have ambiguous effects on TFP.

Human capital quality is accepted by most of the authors to be another important determinant of TFP. In this regard they consider that the level of schooling and the health of the labour force are essential variables that influence the productivity.

Most of the empirical studies (Romer, 1990, Barrett & O'Connell, 1999; Fleisher et al., 2010), show that the quality level of education and training is determining strongly the level of productivity.

At the same time, we found several papers (Bloom & Sachs, 1998; Cole & Neumayer, 2007) that confirm empirically that poor health impacts negatively on TFP, while illness reduce the workers capacity of production.

Another determinant of total factor productivity appears to be the physical infrastructure, as it can offer leverage for all the economic activities. It is usually proxied in studies, by electricity or energy, respectively by the total length of the disposable roads or railways. Regarding infrastructure one can find many studies (Aschauer, 1989; Bronzini & Piselli, 2009; Fleisher et al., 2010) that sustain empirically that infrastructure contributes to productivity improvement.

Literature also includes other studies that take into consideration factors as trade, institutions, competition, financial development or geography as potential drivers of total factor productivity, but only in some specific cases showed that they induced notable effects on productivity. On the other hand, most of the studies have agreed that the intensity of the use of the capital plays a major role in enhancing productivity, however not assessing it in a specific manner and concentrating on the other variables. Moreover, the impact of some dangerous phenomena, such as crises, on total factor productivity, was seldom approached.

## DATA AND METHODOLOGY

Based on the previous considerations, and starting from the point of view that total factor productivity is, at the same time, both a most important measure of the efficiency of an economy, but also a complex indicator, determined by less observable factors, we aim, further, to analyse the way some of the major determinants revealed in literature may influence it.

Our analysis will cover the period 2000-2013, partially marked by a severe financial and economic crisis, and will be focused on a group of 13 developed countries from Europe, also OECD members, including Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Portugal, Spain Sweden and United Kingdom. In this regard, we will use yearly data from OECD database and from World Development Indicators database of World Bank. We will use as dependent variable the annual total factor productivity growth (TFPG), from OECD database, and we will apply econometric techniques, including Pearson correlation and Panel Least Squares method, considering the independent variables presented in Table 1.

**Table 1. Determinants of total factor productivity growth**

| Independent variable/ Determinant | Indicator name | Indicator symbol | Expected influence (+/-) | Source |
|---|---|---|---|---|
| Low intensity of capital use | Gross fixed capital formation to GDP ratio | FCF_G | - | World Bank database |
| Education quality | Labour force with tertiary education growth | ΔLF_T | + | World Bank database |
| Low Health | Variation of Log of Length of hospital stay (days) | ΔLog(HD) | - | World Bank database |
| ICT Technology | Variation of broadband fixed subscriptions per 100 persons | ΔBS | + | World Bank database |
| Technology transmision | Variation of FDI inward flows as percentage of GDP | ΔFDII_G | +/- | OECD database |
| Knowledge | Lagged annual R&D expenses to GDP ratio | R&D(-1) | + | World Bank database |
| Energy | Variation of Log of annual primary energy supply | ΔLog(E) | + | OECD database |
| Infrastructure | Variation of Log of Length of roads | ΔLog(R) | + | OECD database |
| crisis | crisis | crisis | - | dummy |

As also the table shows, we have introduced as measure for the intensity of the use of fixed capital, the proportion gross fixed capital formation to GDP, while an decrease of this indicator shows that with the same capital it can be achieved a higher GDP or, reversely, the increase of this indicator shows a decrease in the intensity of the use of fixed capital. We also use indicators to catch the impact of the increase in the quality of education of labour force, considering the percentage of the high qualified workers in total workers and, on the other hand the level of health, estimated to increase as the length of hospital stay decreases.

Knowledge and technology are assessed through the lagged R&D expenses as percentage of GDP, considering there is necessary a certain period to implement the new knowledge and technology. We also assess the impact of ICT technology through the variation of broadband fixed subscriptions and the transmission of technology through the changes in FDI inward flows.

Infrastructure is assessed by the length of the roads and also by the primary energy supply. We notice also that the later indicator might be also considered to catch the intensification of capital use.

As table 1 confirms, we have considered necessary to take into account in estimating the effects on total factor productivity also of the financial crisis manifestation, which determined, in the analysed period, significant changes in economy and society. Thus, we introduced also the dummy variable "crisis", marking the crisis period.

## RESULTS AND COMMENTS

In order to identify the existence of the linkages between the total factor productivity growth and the considered determinants we used first Pearson correlations to process the panel of data for the developed European countries which are studied and we obtained the results presented in Table 2.

**Table 2. The correlation matrix of the variables**

| Covariance Analysis: Ordinary | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Sample: 2000 2013 | | | | | | | | |
| Included observations: 169 after adjustments | | | | | | | | |
| Balanced simple | | | | | | | | |
| Correlation | | | | | | | | |
| Probability | TFPG | FCF_G | ΔLF_T | ΔBS | ΔLog(E) | ΔFDII_G | ΔLog(HD) | R&D(-1) |
| TFPG | 1.0000 | | | | | | | |
| | ----- | | | | | | | |
| | | | | | | | | |
| FCF_G | -0.0561 | 1.0000 | | | | | | |
| | 0.0000 | ----- | | | | | | |
| | | | | | | | | |
| ΔLF_T | 0.0378 | -0.1040 | 1.0000 | | | | | |
| | 0.6260 | 0.1784 | ----- | | | | | |
| | | | | | | | | |
| ΔBS | 0.2349*** | 0.0861 | 0.0090 | 1.0000 | | | | |
| | 0.0021 | 0.2655 | 0.9078 | ----- | | | | |
| | | | | | | | | |
| ΔLog(E) | 0.3348*** | 0.1970** | -0.0786** | 0.0671 | 1.0000 | | | |
| | 0.0000 | 0.0103 | 0.3100 | 0.3861 | ----- | | | |
| | | | | | | | | |
| ΔFDII_G | 0.1428* | -0.0154 | -0.1298* | 0.0814 | -0.0185 | 1.0000 | | |
| | 0.0640 | 0.8423 | 0.0925 | 0.2930 | 0.8114 | ----- | | |
| | | | | | | | | |
| ΔLog(HD) | -0.0326 | -0.0119 | 0.0543 | -01466 | -0.0006 | -0.0382 | 1.0000 | |
| | 0.6736 | 0.8781 | 0.4832 | 0.0572 | 0.9937 | 0.6222 | ----- | |
| | | | | | | | | |
| R&D(-1) | 0.1310* | -0.1261 | -0.1638** | 0.0091 | 0.0274 | -0.0330 | -0.0010 | 1.0000 |
| | 0.0895 | 0.1024 | 0.0333 | 0.9069 | 0.7235 | 0.6706 | 0.8977 | ----- |
| | | | | | | | | |
| ΔLog(R) | 0.1320* | 0.2589*** | 0.0091 | 0.0766 | 0.1991*** | -0.1923** | -0.1554** | 0.1072 |
| | 0.0872 | 0.0007 | 0.9063 | 0.3224 | 0.0095 | 0.0122 | 0.0437 | 0.1654 |
| | | | | | | | | |
| crisis | -0.3238*** | -0.2031*** | 0.0865 | -0.4146*** | -0.2819*** | -0.1226 | -0.1308* | 0.1105 |
| | 0.0000 | 0.0081 | 0.2635 | 0.0000 | 0.0002 | 0.1122 | 0.0901 | 0.1525 |

***, **,* - denotes significance at 1%, 5%, respectively 10% level

According to Table 2, it appears that there are statistically very significant positive correlations, below the 1% threshold, between total factor productivity growth and the advanced use of technology, proxied by the variation of broadband subscriptions (coef.=0.2349, prob. = 0.0021) and increased supply of energy (coef.=0.3348, prob. = 0.0000).

Other statistically significant positive correlations, below the 10% threshold are found between TFP growth and the increase of foreign direct investments inward flows (coef. = 0.1428, prob. = 0.0640), the infrastructure development, proxied by the length of the national roads (coef. = 0.1320, prob. = 0.0872) and with the accumulation of knowledge, proxied by the lagged percentage of R&D expenses to GDP (coef. = 0.1310, prob. = 0.0895).

At the same time, data in Table 2 show the existence of a positive correlation between total factor productivity growth and the quality level of the education of workers, but this correlation is not significant (coef.=0.0378, prob. = 0.6260), in the analysed period.

On the other hand, data in Table 2, confirm also expected statistically significant negative correlations, below the 1% threshold, between total factor productivity growth and the manifestation of the financial and economic crisis (coef.= -0.3238, prob. = 0.0000), but also with the low intensity of capital use (coef.= -0.0561, prob. = 0.0000).

Moreover, even if not statistically significant, the negative correlation between TFP growth and the low health condition of the people (coef. = -0.0326, prob. =0.6736), is also confirmed.

Based the above considerations and results obtained regarding the correlations between total factor productivity growth and the considered determinants, we take into consideration the possibility of deepening our analysis by searching the fixed effects of the later on it. We chose to analyse the fixed effects on the total factor productivity growth while these action of the determinants on the dependent variable is considered independent on other major variables such as the levels of capital and labour used. In this regard, we use the Panel Least Squares method to build and test the following econometric regression model (1) for revealing the impacts of the considered determinants:

$$y_{jt} = c + \sum_i \beta_i \bullet X_{ijt} + \varepsilon \qquad (1)$$

, in which:
- j stands for the specific country
- t stands for the year
- y represents total factor productivity growth
- Xi represent the impact factors considered
- $\beta_i$ are the coefficients of the impact factors and
- ε stands for the error term.

We tested the proposed model on the data of the 13 developed European countries for determining the fixed effects of the impact factors on total factor productivity growth, for the period 2000- 2013, leading us to the results presented in Table 3:

**Table 3. Results of applying the proposed model**

| | | | | |
|---|---|---|---|---|
| Dependent Variable: TFPG | | | | |
| Method: Panel Least Squares | | | | |
| Sample: 2000 2013 | | | | |
| Periods included: 13 | | | | |
| Cross-sections included: 13 | | | | |
| Total panel (balanced) observations: 169 | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| FCF_G | -0.133419 | 0.060188 | -2.216705 | 0.0282 |
| ΔLF_T | 0.071231 | 0.128697 | 0.553477 | 0.5808 |
| ΔBS | 0.094098 | 0.045577 | 2.064607 | 0.0407 |
| ΔLog(E) | 12.07286 | 2.967283 | 4.068658 | 0.0001 |
| ΔFDII_G | 0.021670 | 0.011047 | 1.961668 | 0.0517 |
| ΔLog(HD) | 1.142691 | 4.669994 | 0.244688 | 0.8070 |
| R&D(-1) | 1.188359 | 0.646600 | 1.837859 | 0.0681 |
| ΔLog(R) | 0.894372 | 0.495327 | 1.805619 | 0.0730 |
| crisis | -0.819070 | 0.261804 | -3.128568 | 0.0021 |
| C | 0.876551 | 2.247189 | 0.390066 | 0.6971 |
| | Effects Specification | | | |
| Cross-section fixed (dummy variables) | | | | |
| R-squared | 0.338393 | Mean dependent var | | 0.331059 |
| Adjusted R-squared | 0.243878 | S.D. dependent var | | 1.513752 |
| F-statistic | 3.580300 | Durbin-Watson stat | | 2.054304 |
| Prob(F-statistic) | 0.000003 | | | |

Results from Table 3 are quite similar with the identified correlations, and the greatest majority of them are in line with the previous findings in literature.

In terms of coefficients and significance, we find that growth in primary energy supply (coef. = 12.0728, prob. = 0.0001) and the R&D activities (coef. = 1.1884, prob. = 0.0681) have strong impacts of enhancing the total factor productivity growth, in line with the conclusions of previous studies.

At the same time, we find that the development of infrastructure, namely, in our case, of the length of roads (coef. = 0.8944, prob. = 0.0730), but also the increase of the ICT technology use (coef. = 0.0941, prob. = 0.0407) had positive and statistically significant contributions to the total factor productivity growth in the analysed countries, between 2000 and 2013. Moreover, the transmission of technology, facilitated by the advance in foreign direct investments (coef. = 0.0217, prob. = 0.0517) had a positive effect on TFP growth. Thus, all these results are coming to confirm the expected influences on the dependent variable, as well as the conclusions from the former studies in literature.

However, we found also a positive impact of the quality level of education of the labour force but not a statistically significant one, both in terms of the coefficient and of the probability (coef. = 0.0713, prob. = 0.5808), which, even if shows the positive influence of this determinant on TFP growth, is does not confirm the relevance of this factor, which was sustained in other papers.

We also notice that, unexpectedly, low level of health has a statistically insignificant (prob. = 0.8070) role on TFP growth, but its positive coefficient, when following the fixed effects, contradicts the expectations on its influence on the dependent variable.

On the other hand, we notice the significant negative impact of low intensity capital use, proxied by the proportion of fixed capital formation to GDP (coef. = 0.1334, prob. = 0.0282) on TFP growth, which corroborated with the result regarding the energy supply, confirms the results of the theoretical and empirical previous studies, regarding the essential role of the intensive use of capital in enhancing the productivity.

In the end, data in Table 3 show, as expected, also a very significant negative impact of the manifestation of the financial and economic crisis (coef. = -0.8191, prob. = 0.0021) on the total factor productivity growth. Regarding this result, however, we consider that the presence of the crisis affects indirectly the productivity, while its impact can be sensed more clearly on some of the other determinants such as capital use, infrastructure development, R&D expenses or energy.

## CONCLUSIONS

While economic growth and development of any country is not possible without ensuring the conditions for reaching a high productivity, it is obviously necessary to find how productivity can be enhanced. At the same time, economists agree that beside the major observable inputs, such as capital and labour, that drive the productivity, its level is also influenced by some other factors, less observable that determine the total factor productivity (TFP), viewed as a residual productivity or an incentive to pure productivity. This is why, under the conditions of limited capital and labour, the total factor productivity becomes very important in enhancing the efficiency of economic activities, leading to the need for analysing its determinants.

Our study aimed to analyse which are the main drivers of total factor productivity, using econometric methods, such as Pearson correlations and Panel Least Square method, in order to find how TFP growth was influenced in the developed European countries and is conducted on a group of 13 such countries, between 2000 and 2013.

In our analysis we found, first, that TFP growth is significantly positively correlated with technology, both with the implementation of ICT technologies, but also with the percentage of R&D expenses in GDP. Moreover, technology transmission, through foreign direct investment inward flows is positively correlated with TFP growth. The development of the infrastructure, as well as the level of the primary energy supply are also positively correlated with TFP growth, while the low intensity of capital use and also the low level of peoples' health and the manifestation of the financial crisis are negatively correlated to TFP growth. Thus, all these results confirm the theory in this area. However, even we found a positive correlation of the education quality of labour force with TFP growth; data did not prove its significance.

Deepening our analysis by building a testing a regression model in order to evaluate the fixed effects transmitted on TFP growth by the considered determinants we found, for the analysed countries significant positive impacts induced by the use of high level knowledge and technology, FDI inward flows, the development of infrastructure and negative effects of the low intensity of capital use and of the manifestation of financial crisis, which, in our opinion impacts indirectly on TFP.

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# SMALL STEPS OR BIG CHANGES IN ACTUAL SOCIETY: THE IMPACT OF INTERNET OF THINGS

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**Abstract**: *The Internet of Things is capable of transforming the business area and generating an impact among many areas covered political, from health to commerce. As a result, the Internet of things technology becomes the spotlight for both business area and governmental leaders who are striving to adapt the new digital landscape. The number of potential application of the IoT is in a continuous growth and development, across all areas of everyday life of individuals, enterprises, and society as a whole. The digitization has to transform the computer from past years from a memory card into a button that represents the computer from nowadays. This makes Moore's law remain valid in our days and transform the Internet information and people in the Internet of Things.*
**Keywords**: *IoT, Intelligent systems, intelligent devices, Mobile Applications.*

## INTRODUCTION

The Internet of things - IoT concept was first defined by Kevin Ashton in 1999. In 2016, the Internet of things is already a disruptive technology capable of determiningfundamental changes that are happening in everyday life and it is considered the fourth industrial revolution after steam engine, mass-production and the appearanceof the Internet.

The Internet of things represents an ecosystem where ordinary objects around us, objects likephones, cars, clothing, appliances, and even food that are communicated and they are connected to theInternet using smart processors and have the ability to collect and exchange data.

Currently, an average person owns at least two objects that are connected to the Internet, it isestimated that the number of objects it is in a continuous increase, so the number of owned objectsconnected to the Internet will increase to six or seven by 2016, when worldwide will be in use 6.4billion connected things. By 2020, their number could double reach 20.8 billion, according to areport by Gartner.

According to Gartner Group, the Internet of Things will supporttotal services spending of $235 billion in 2016, up 22% from 2015. In the top of services is the professional category (in whichbusinesses contract with external providers in order to design, install and operate IoT systems), however, connectivity services (through communications service providers) and also consumerservices will grow at a faster pace. According to IERC[5], whose vision is "the major objectives for IoT are the creation of smart environments/spaces and self-aware things (for example smart transport, products, cities, buildings, rural areas, energy, health, living, etc.) for climate, food, energy, mobility, digital society and health applications" (1).

## THE IMPACT OF THE INTERNET OF THINGS

The Internet of Things has a major impact in our future of mankind and on the daily life of the individuals. We are part of a world where everything has the potential to be connected. As a matter of fact, it is estimated by Gartner that by 2020, the installed base for the Internet of Things will exceed $212 billion and will be over $30 billion of "connected things" (2). From a Financial perspective, the IoT project value it is expected to strive for $30 billion by 2020 and will be a major factor in the global economy.
Social impact

The Internet of Things technology will influence our society by facilitating the possibility to work from different workspaces, increase the rate of migration abroad without loose the contact with family or friends, making physical environments more accessible and easier for old people and by using surveillance improve the personal security. Of course, using this technology will generate negative aspects like the exposure of formerly private personal behaviors, loss of livelihoods and affectspolitical implications (in the case of bad solutions or mismanagement of major flood events may lead to disconnect or loss of trust in state, authorities or governments).

## TECHNOLOGICAL IMPACT

According to Nick Jones[6] (3), "The IoT demands an extensive range of new technologies and skills that many organizations have yet to master. A recurring theme in the IoT space is the immaturity of technologies and services and of the vendors providing them. Architecting for this immaturity and managing the risk it creates will be a key challenge for organizations exploiting the IoT. In many technology areas, lack of skills will also pose significant challenges."

The technology will have a very broad impact on companies, will affect the business strategy and risk management by transforming the business. IoT combines the physical and digital worlds and even if the changes for physical spaces hasn't been fully realized it can be observed changes in the manner in which the good are manufactured, distributed, serviced, refined and how networks are managed and protected.

[5] IERC – European Research Cluster on the Internet of Things
[6] Vice President and analyst on Gartner

## ECONOMIC IMPACT

The increasing of total number of Internet of things devices has an economic impact in the way of cost saving, general economic growth, productivity improvement and value creation.

According to McKinsey Global Institute, the potential economic impact of Internet of things technology will be $6.2 trillion per year by 2025, the largest of which will be felt in the manufacturing and health care industries(4).

## APPLICATION AREAS

Our society has experienced in recent years major challenges and transformationscaused by the evolution of marketplaces and applications, challenges and transformations that are creating important opportunities in the marketplaces of consumer electronics, automotive, medical applications, and communications. These societal trends can be grouped by domains: transport, health, security, e-society, energy, industry, etc.The applicability area of Internet of Things brings together existing area of daily life, enterprises and society as a compact group where are developed a large number of applications designed to make life easier and smart.More exactly,a smart life can be obtained by transforming various vertical domains into a single and unified horizontal domain.

According to Strategic Research Agenda (SRA), the main applications of IoT (also named "vertical domains") are smart energy, smart buildings, smart health, smart living, smart cities, smart transport, smart industry.

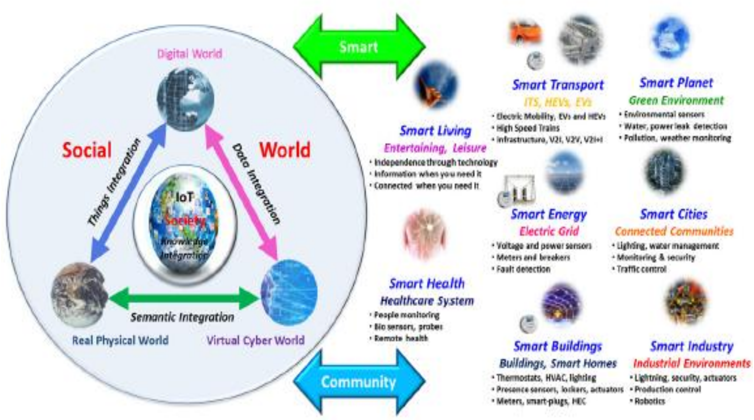


**Figure 1 The Internet of Things – Smart Environmentsand Applications**[7]

## SMART LIVING

Smart living is referring to the use of Internet of Things applications for houses, payments, offices, security and industries. The main idea of smart living is to equip home

[7] Source: https://www.linkedin.com/topic/smart-environments

using technologies that allowpeople to control all the existing electronic devices. The solutions are using open platforms and a network of smart sensors in order to procure information about the state of the home (see Figure 2). Systems like air conditioning, lighting, ventilation, security, heating and so on are monitored using smart sensors, that provide information using smartphones, tablets, touch screen (5).

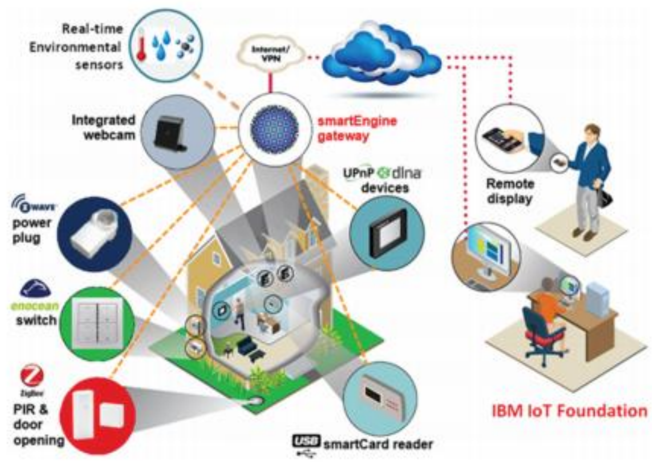


**Figure 2 Home equipment and appliances (6)**

Examples of applications:

- Applications used to heat efficiently your home by using smart thermostats (for example Nest products[8]) that allow saving energy;
- Application for Smart refrigerator with LCD screen that displays a list of products that are in the refrigerator, that are about to expire, or gives the person the possibility to create a list of the needed products and send directly to the application;
- Application for weather stationable to transmit information like humidity, temperature, wind speed, rain levelsno matter the distance involved.

Applications that provide the possibility to light you home in many ways, for example, Philips's Hue[9] enabled user to change to ambient lights when the owner is 5 minutes away, automatically turn the light off when the room is empty, secure home by turning lights on and off when everyone is away.

Use devices like the Ninja Block[10] that allows tracking if a water pipe has burst or if there is motion inside your home and send automatically a notification using e-mail or text message when something changes at the home.

Example of companies: Nest, Ecobee, Ring and August.

[8]For details, visit websitehttps://nest.com/
[9] For details, visit website http://www.postscapes.com/wifi-lights/
[10] For details, visit website http://www.postscapes.com/home-wireless-sensor-systems/

## SMART ENERGY

Because the changes that are happing in the world we must no longer base on fossil resources when itcomes to obtaining energy, and based on various renewable resources. The energy consumption behavior must be prior because of the fact that the energy is wasted in many places and influence in a negative way our society. When we discuss Smart Energy, the most popular applications are relatedto Smart grid and Smart meters. Smart grid represents an electrical grid which includes a range of operational and energy measures, among which may include smart meters, smart appliances, renewable energy resources, and energy efficiency resources (7).The most known projects of Smart Energy are implemented in Tucumán, Argentina(8)and Jeju Island, South Korea (9).

Other applications are:

- Wind Turbines – Analyze consumption patterns obtained by controlling the flow of energy obtained by wind turbines and two-way communications with consumers smart meters;
- Water Flow –Measure water pressure in water transport systems;
- Radiation Levels–Generate leakage alerts according to radiations levels in nuclear power stations;
- Photovoltaic Installations - Monitoring and optimization the obtained performance in solar energy plants.

## SMART HEALTH

Using Internet of things technology in the Healthcare industry is adding more value and improving the quality and accessibility of devices.Advantages that can be obtained by using this technology are Medical Fridge, Drug tracking, Ultraviolet Radiation, remote monitoring, Sportsmen care, Ambulance telemetry, etc. This will have a positive impact on our lives helping us to live a happily life avoiding medical issues. For example, we can use Medical Fridge to control the conditions inside freezers that storing vaccines, medicines and organic elements, or we can measure the UV sun rays by using Ultraviolet Radiation that can send alerts to people to avoid exposed in certain hours.

## SMART CITIES

We can define the Smart city as a city that has the ability to control and supervise conditions of all of its critical infrastructure, water, power, roads, airports, rails, subways, communications, buildings in order to track and optimize its resources, create preventive maintenance plans while maximizing services to its citizens. Also, problems like traffic congestions, pollution or shortage of energy supplier can be solved by using Internet of things application. The impact of the Smart city on society is obtained by creating sustainable economic development and increase the quality of life by exceeding in other multiple areas like mobility, economy, living and government.

Example of applications:

- Smart belly trash – use cellular communication to send alerts when a bin is full to the municipal services;
- Find available park slots by installing sensors and send them to the web applications
- Smart parking - monitoring the available parking spaces;
- Structural health – monitoring the material conditions and vibrations in bridges, buildings and historical monuments;
- Smartphone detection – detect any device that has use WiFi or Bluetooth interfaces;
- Traffic congestions – optimize driving and walking routes by monitoring cars and pedestrian (e.g. Intel and Siemens developed Smart Parking solution available in te city of Berlin);
- Smart lighting – control adaptive light for street lights.
- Smart roads – track warning messages and diversions depending on the weather or unexpected events. We ca consider an example, the Indians that are developing the first Indian smart city that's located near Gujarat' capital, named Gandhinagar (10).

## SMART TRANSPORT AND MOBILITY

The Smart Transport and Mobility represent the connection of vehicles to the Internet in order to create new possibilities and applications which bring new functionalities to the individuals and making transport safer and easier. Internet of Things represents an inherent part of the vehicle control and management system, enables new transport scenarios (for multi-modal transport), and enables traffic management and control.

Example of applications:

NFC Payment: Process payments in different locations and based on activity duration for transport tickets, gyms, parks, so on;

Item Location: Find individual products in big surfaces;

Quality and shipments conditions: Control and apply insurance in the case of vibrations, strokes, container openings;

Storage incompatibility Detection: Control emissions and prevent the storing of inflammable goods across others inflammable goods;

Vehicle Auto-diagnosis: Send real-time advices and alerts to drivers in the case of emergencies;

Road pricing: is referring to automatic vehicle payment systems that allow improving traffic conditions;

Smart Industry

The Smart Industry it's based on IoT projects footprint in Oil & Gas and in factory environments that contain a wide range of"connected" things from shop floor machinery (for example, the German food producer Seeberger (11) ) to printing equipment. One of the most known example of monitoring equipment is RasGas´ LNG (12), located in Laffan, Qatar, that allows the provider to perform predictive maintenance on its assets.

Example of applications:
Tank level: Control and manage the water, oil or gas levels in big cars like thanks or cisterns.
M2M Applications:Machine auto-diagnosis and assets control;
Maintenance and repair: Control products and create reports based on sensors located inside equipment in order to provide service maintenance and repair in the case of part failure.
Indoor Air quality: Management of toxic gas and oxygen level to maintain workers and goods safety.
Ozone Presence: During the meat, the process allows the control of the level of ozone levels in food factories.

## INTERNET OF THINKS APPLICATION RANKING

According to K. Lasse the most ten popular applications available in 2015 on the Internet of things are:

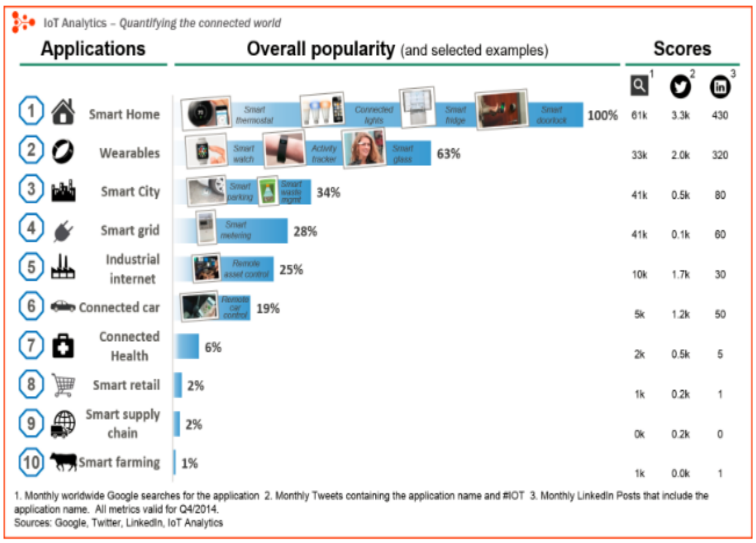


**Figure 3 Internet of things applications ranking (13)**

As we can see in Figure 4, the Manufacturing market segment is the largest IoT market segments. The analysis is based on the reports that are trying to forecast revenue or device specific development per segment (14).

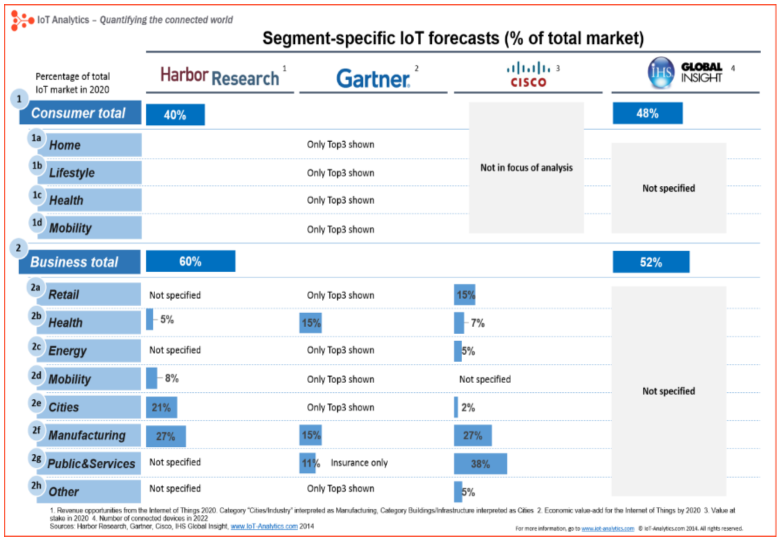


**Figure 4 Internet of Things markets segments forecasts**

As we can observe the Internet of things is about data, devices and connectivity. The IoT and Big data represent the interconnected by the massive amount of data, obtained by connecting objects. In 2015, the IDC[11] notes that "Today, over 50% of IoT activity is centered in manufacturing, transportation, smart city, and consumer applications, but within five years all industries will have rolled out IoT initiatives." (15)
Major advantages and benefits can reside by sensing big data model: built-in cloud computingby inheriting all the benefits from cloud models; participatory sensing by enabling a rapid deployment of sensors across a wide area of locations from where we can capture various phenomena; sharing and reusing by accessing others sensors and pay a fee to the sensors owner.

## INTERNET OF THINGS: 4G VS 5G

Even if the 4G[12] networks incorporate the latest technologies and offe faster data access, the road beyond LTE[13] and LTE-A is far from clear. Due to increased demand for wireless communications, the industry has difficulties in offering faster data and greater access. The mobile Internet has inspired researchers to think beyond faster data and greater capacity.These new networks, referred to 5G (fifth generation), may transform our lives and unleash enormous economic potential.

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[11] IDC – International Data Corporation
[12] 4G – is the short name for fourth generation wireless, the stage of broadband mobile communications that will supercede the third generations (3G) (18)
[13] Mobile communication standard

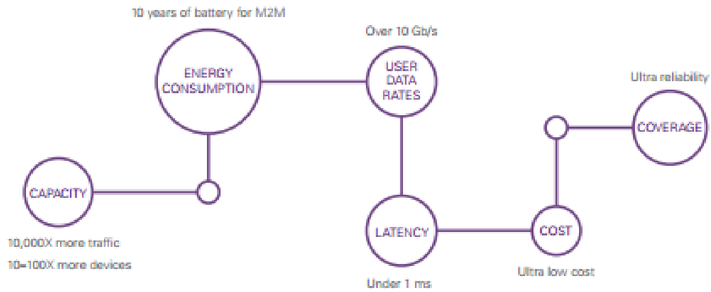


**Figure 5 The Fifth-generation technology challenges**

5G will appear and its impact will be transformational, but this will take the time to design tools and technologies. The 5G technologies are moving forward, and the vision of IoT applications for everyone and everything comes closer to reality every day.

## CONCLUSIONS

The explosion of devices connected to the Internet has been dubbed the Internet of Things (IoT). These devices may incorporate sensors to measure pressure, temperature, or stress and perhaps include actuators to turn on and off devices or make adjustments in real time. The Internet of things minimize the human interventions and will have a major impact in the way we live and work.Ways of how The Internet Of Things will change every Business are allow companies to make smarter products, enable smarter business operations and smarter decisions and change the business model.

The IoT impact in the industry it is significant for operational efficiency. Rising low costs for sensors and the increased demand for optimized processes will lead to an expansion of IoT applications in this sector.

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# INSIGHTS ON THE EVOLUTION OF FISCAL DISCIPLINE IN THE EUROPEAN UNION

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**Abstract:** *Fiscal discipline is a highly discussed subject in EU politics, media and the general public. But, as a part of a bigger picture – the fiscal integration process, fiscal discipline doesn't appear from sudden; instead it evolves over time through carefully thought steps and decisions. In this paper we discuss the evolution of fiscal discipline components over time and how they correlate inside the EU framework, sample period being 1994-2015. As our analysis proves, EU governments are more than ever committed in maintaining sound public finances and fiscal discipline through the implementation of fiscal rules at a national level, and also by accompanying the rules with independent enforcing and monitoring institutions. In order to make the commitment more credible, EU states have also introduced sanctions for non-compliance and automatic correction and sanction mechanisms.*
**Keywords**: *fiscal integration, fiscal rules, fiscal discipline, evolution*

## INTRODUCTION AND LITERATURE REVIEW

Concerns about fiscal discipline and fiscal rules became more and more obvious after the Maastricht Treaty entered in force in 1993 and also more important as the most recent crisis stroke. As a heterogeneous formation of states, the UE needs to keep its public finances as solid as possible in order to ensure fast responses and balance in face of economic and financial shocks. The public debt crisis and the deterioration in budget deficits of most EU member states in 2010 made the issue of fiscal stability and fiscal discipline extremely relevant [1]. As some authors state, fiscal discipline and flexibility are the main principles governing budgetary policies [2]. Fiscal discipline allows the credibility of governments to strengthen, while flexibility is required to deal with country-specific shocks.

Fiscal discipline in a monetary union can be even more challenging, as the lack of central fiscal authority makes this objective harder to reach [3]. Some authors even ask the question: what kind of fiscal policies in a monetary union? [4] Same authors state that national governments of member states should be subjected to additional budgetary discipline compared to stand-alone countries. The main reasons for this targets moral hazard and the common pool argument. But, other studies contradict this statement, data revealing that intense fiscal rules can reduce the capacity of national governments to deal with asymmetric shocks and makes them more vulnerable to financial instability [5]. This case may be related to the fact that government revenues and spending are both directly influenced by fluctuations in income, spending, transactions and employment [6]. As so, introducing harsh fiscal rules limits the power of governments to respond to shocks regarding the mentioned economic indicators.

As we have proven on other occasions [7], fiscal rules tend to have a negative impact on public debt, leading to higher levels. Also, an increased number of institutions that supervise budgeting leads to the same effect. As so, more rules and institutions do not necessary lead to positive results regarding fiscal policies, but, their absence would not contribute with anything also. For example, although fiscal rules bring with them higher public debt levels, they also bring smaller public deficits for EU member states, as shown in our previous work [8].

In order for states to lower public debt to GDP ratio fiscal adjustments are required [9] but, in order to maintain the solidity of the public finances, the fiscal discipline and fiscal rules should not get of the site of EU governments.

Nevertheless, fiscal rules can play a vital role in promoting fiscal sustainability over both the economic cycle and the longer term [10], by setting limits for public spending, debt and deficits levels, thus creating a credible commitment for fiscal discipline. In order to analyse the evolution of fiscal rules and discipline as a part of the fiscal integration process in the EU we propose two key hypotheses for validation:

H1: the fiscal integration process has evolved over time as countries became more disciplined and engaged in follow the same fiscal guidelines;

H2: as the fiscal integration process has evolved, so did the fiscal discipline of countries denoted through strong positive connections between our chosen variables.

## DATA AND METHODOLOGY

Nevertheless, fiscal rules can play a vital role in promoting fiscal sustainability over both the economic cycle and the longer term [10], by setting limits for public spending, debt and deficits levels, thus creating a credible commitment for fiscal discipline. In order to analyse the evolution of fiscal rules and discipline as a part of the fiscal integration process in the EU we propose two key hypotheses for validation:

We used in our analysis data composed of 28 countries, meaning the member states of the European Union, the sample period being years 1994-2015 (annual records). Data regarding our variables was collected from Eurostat and the Fiscal rules database provided by the European Commission. In order to analyse the evolution of the fiscal integration process and the fiscal and budgetary discipline of the EU member states, we have taken into account the next related descriptive variables: Number of countries which have implemented at a national level a Balanced Budget Rule (BBR) regarding their general or central government (ImplementedBBR); Number of countries which have implemented at a national level a Public Debt Rule regarding their general or central government (ImplementedPDR); Number of countries which have implemented at a national level a Public Expenditure Rule regarding their general or central government (ImplementedPER); Number of countries which have implemented at a national level a Public Revenues Rule regarding their general or central government (ImplementedPRR); Number of countries which have an Independent Enforcement Body for their BBR (IEBforBBR); Number of countries which have an Independent Monitoring Body for their BBR (IMBforBBR); Existence of sanctions for non-compliance regarding the BBR for policy-makers (SanctionsBBR); Existence of an Automatic Correction and Sanction Mechanism Regarding the BBR (AutoCorrectionSanctionBBR); Number of states which register a public deficit level lower than 3% of their GDP (PublicDEF3); Number of states which register a public debt level lower than 60% of their GDP (PublicDEBT60); Number of states in which the growth level of their public expenditures is lower than the growth level of their GDP (GRPEvsGRGDP).

First, we analysed how all these variables evolved over time, a positive evolution being related to an increased number of EU members that implemented, have or register them. This part of our analysis is presented in graphics 1 to 4 in section Preliminary analysis. Second, we analysed the correlation that establishes between our chosen variables in order to identify if there is a strong connection between them and if that connection is a positive or a negative one. This part of our further analysis is depicted in section Empirical results.

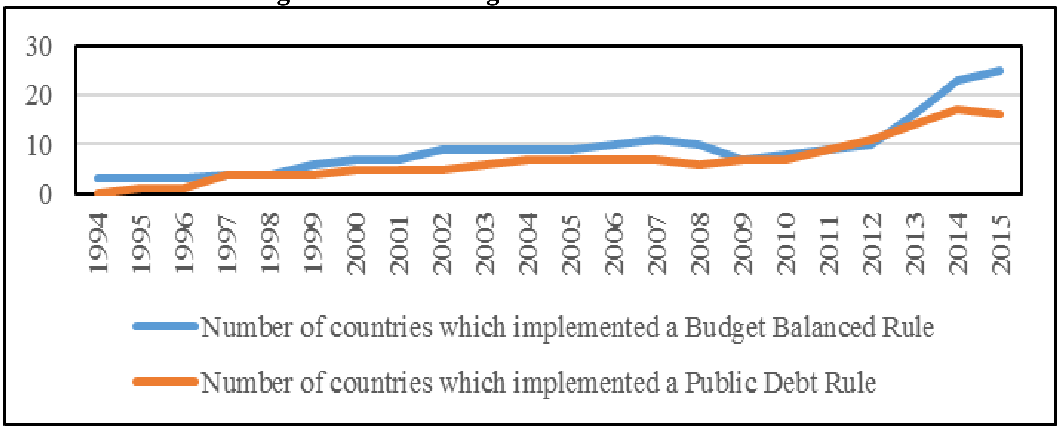
## ANALYSYS

### Preliminary analysis

As we've presented our variables and methodology in the previous section of the article, we will continue with presenting a preliminary insight on how the fiscal integration process evolved over time in the EU, how members of the European Union reacted to the crisis and before from a fiscal discipline standpoint, and what are the measures that they've taken in order to gain more solidity and balance regarding their fiscal policies and constraining their policy-makers.

The evolution of the fiscal integration process has been, is and it will be marked by the existence of fiscal rules. Two extremely important rules are those which target public deficits and public debt. These two rules can be found in EU treaties as The Maastricht Treaty, SGP (Stability and Growth Pact) and the most recent Fiscal Compact that entered in force in 2013. In order to achieve the so desired fiscal stability and solidity of the public finances, these two rules need to exist in national legislation, to be correctly implemented, respected and overseen.

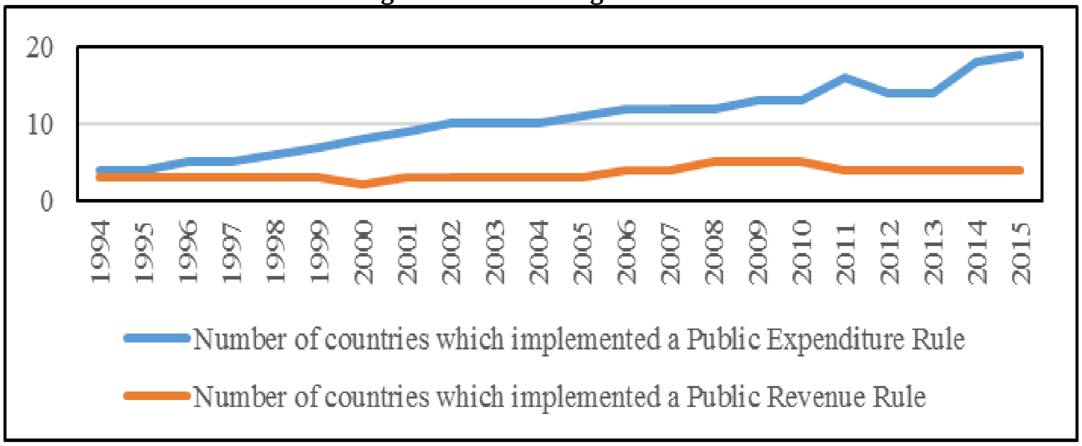
**Graphic 1. Evolution of the number of EU members which implemented a Budget Balance Rule and a Public Debt Rule for their general or central government 1994-2015**




*Source: Author calculations*

As our first graphic depicts, the number of EU states that implemented these rules has growth over the two analysed decades, with the exception of years 2008 and 2009. As the crisis emerged, countries become unable to respect these two specific rules, due to fast rising levels of debt and deficits. Some of them even suspended the rules, especially the one regarding balanced budget. EU member states didn't expect such a powerful swift in their budgetary positions, as levels of public expenditures increased in order to save economies and fiscal revenues hit a high fall due to low economic activity, stopped investments and problems regarding financial systems. Nevertheless, as the situation was stabilized, and most importantly, after learning a harsh lesson regarding the importance of maintaining solid public finances as a key to maintain economic and financial stability, more and more countries implemented the two fiscal rules, especially the one regarding balanced budgets. Also, as the graphic clearly shows, the signing of the Treaty on Stability, Coordination and Governance had a huge impact in 2013 when in entered in force. Most of the EU member states have now implemented a Budget Balance rule (25 to be more precise), and 16 have implemented at a national level a rule that regulates the evolution and dimension of their public debt levels.

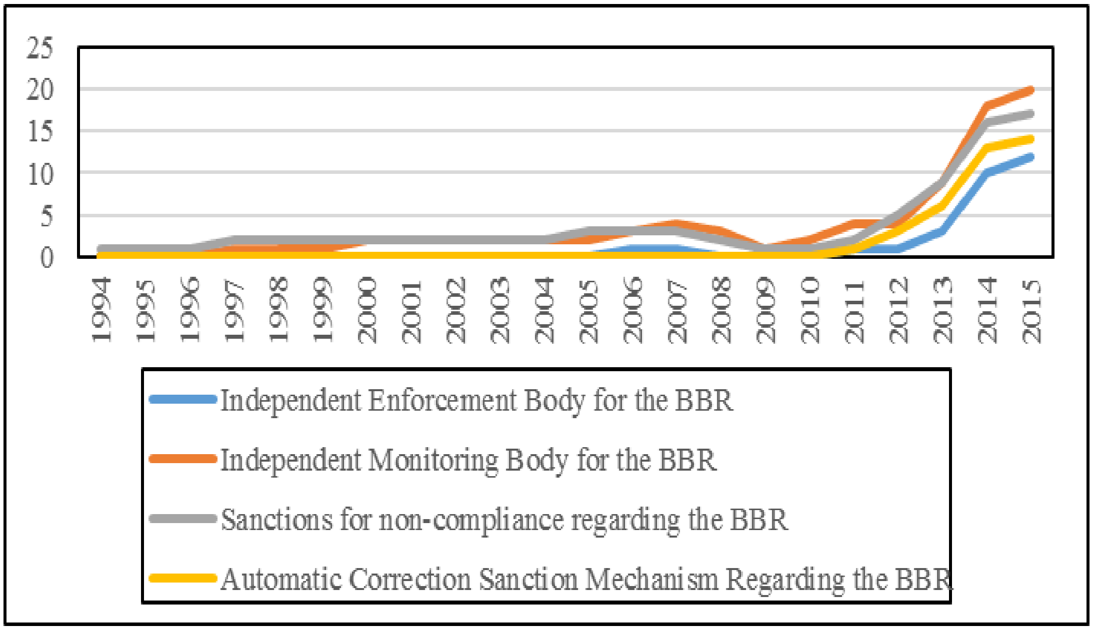
**Graphic 2. Evolution of the number of EU members which implemented a Public Expenditure Rule and a Public Revenue Rule for their general or central government 1994-2015**




*Source: Author calculations*

As history has proven, especially years 2008-2011 of crisis, only enforcing the Budget Balance Rule (BBR) and the Public Debt Rule may not be enough to maintain sound public finances. The two fiscal rules that came to enhance the framework are the Public Expenditure Rules and the Public Revenue Rule. These two rules tell governments how they should design their fiscal and budgetary policies in order to achieve sound public finances, and regulate the dimensions of the two indicators. Graphic number two depicts our analysis on the number of EU members that have implemented at a national level these rules for their general or central government. We need to point out from the begging that from these two rules, the most important one is the rule that targets governmental spending, because if the expenditures overcome revenues, then countries plunge into deficits and have to balance their budgets by lending, thus influencing debt levels in a negative term. Although the number of EU members that have implemented at a national level a revenue rule hasn't modified to much over time, variation seeing from 2 EU countries that implemented the rule (year 2000) to 5 EU member states (2008-2010) in the crisis period as the need to collect more public revenues become more and more pressing to cover deficits and higher debt levels, we cannot state the same about the expenditure rule. While in 1994, only 4 countries had implemented at a national level a public expenditure rule, in 2015 almost 20 countries have implemented a similar rule. Although the evolution of the number of countries which implemented this rule was clearly influenced by the increasing number of EU member states over time, when comparing to the evolution of states that implemented revenue rule the difference in notable. This difference is given as we stated before because of the higher impact that expenditures have on debt and deficit levels on one hand, an on the other hand because of the EU treaties and the need to control the policy-makers in order to restrain the growth rate of expenditures in order to maintain equilibrium and sound public finances.

**Graphic 3. Evolution of existing Independent Enforcement Bodies, Independent Monitoring Bodies, Sanctions for non-compliance and Automatic Correction and Sanction Mechanisms for the Budget Balance Rule in EU member states 1994-2015**

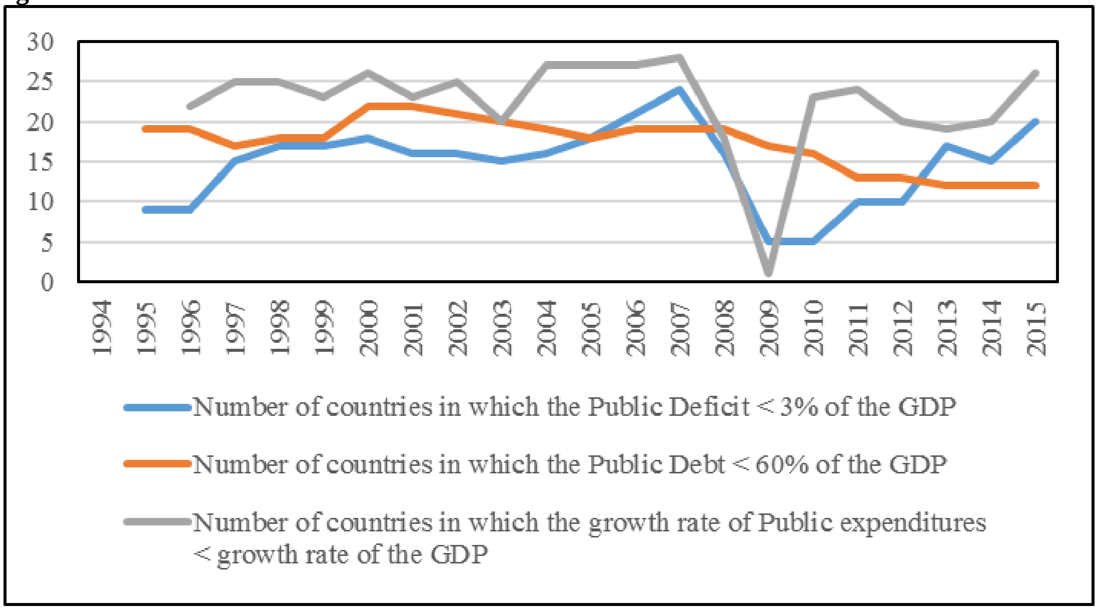



*Source: Author calculations*

As we've seen so far, more and more EU member states implement rules that regulate fiscal and budgetary policy-makers in order to achieve sound public finances on the long run. But, rules become in most cases partially inefficient because of the lack of monitoring and enforcement bodies, and sanction and correction mechanism. In our point of view, a child needs more than rules (EU governments in this case). It also needs its parents as guiders and enforces of the rules, as governments need the four indicators depicted in our third graphic. As strange as our comparison seems at a first glance, it only depicts the deep truth. Governments are lead and have in their membership politicians, that don't always care about the soundness of the public policies, general welfare and especially respecting rules, as they see them more as guidelines rather than laws. As so, the need for monitoring and enforcement bodies is an obvious one, and a more necessarily one for independent bodies. Also, non-compliance for rules, especially for the Budget Balance Rule (as it influences public expenditure and revenue levels, and also debt levels) needs to be sanctioned, because if there are no consequences, there is no compliance. As our graphic indicates, little attention was given to these aspects until the middle of 2000', and also more and more attention was given starting with years 2010-2011. As the crisis emerged and leaved more and more wounds in EU budgets, economic policies and economies itself, the need to constant oversee compliance to existing rules became obvious.

While between 10 and 15 EU member states introduced an automatic correction and sanction mechanism for non-compliance with the BBR and an independent enforcement body, over half of EU members have introduced sanctions for non-compliance regarding the BBR and have an independent monitoring body (20 states in 2015).

**Graphic 4. Evolution of the number of EU member states which have a Public Deficit < 3% of their GDP, Public Debt < 60% of their GDP and a growth rate of their public expenditures smaller than the growth rate of the GDP 1995-2015**




*Source: Author calculations*

Our last graphic depicts the evolution of three of the most common indicators for public finances solidity and allows us to analyse if and when the previous mentioned rules and mechanism we're taken into account by governments.

First of all, we need to remember that during the crisis most of EU member states stopped taking into account mentioned rules or weren't able to comply with them due to the economic downfall. For example, while most of EU states were able to maintain their public deficit below 3% of their GDP and a growth rate of their public expenditures under the growth rate of their GDP, situation changed in years of the recent crisis, begging with years 2007 and 2008, the year 2009 being the worst from this perspective (only 1 country was able to maintain the growth rate of their public expenditure smaller than the growth (most downfall) of their GDP. As governments struggled to maintain economic activity and give an impulse to their economies, expenditures went up too fast, while revenues go down. As the effects of the crisis passed, and countries started to recover through different measures, the situation balanced, in 2015 over 20 EU members presenting a growth rate of their expenditure smaller than the growth rate of their GDP, and exactly 20 members kept their public deficit under 3% (in compliance with the BBR).

Unfortunately, the crisis showed us how vulnerable EU economies are to shocks, how weak the solidity of the public finances is, and that states need to take further actions in order to prevent this disaster repeat itself – previous graphics indicate indeed that measures are taken and that rules and mechanisms are implemented in order to maintain stability in the future.

## EMPIRICAL RESULTS

**Table 1. Correlations between our key variables**

| | | ImplementedBBR | ImplementedPDR | ImplementedPER | ImplementedPRR | IEBforBBR | IMBforBBR | SanctionsBBR | AutoCorrectionSanctionBBR | PublicDEF3 | PublicDEBT60 | GRPEvsGRGDP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Implemented BBR | Pearson Correlation | 1 | | | | | | | | | | |
| | Sig. (2-tailed) | | | | | | | | | | | |
| | N | 22 | | | | | | | | | | |
| Implemented PDR | Pearson Correlation | ,936** | 1 | | | | | | | | | |
| | Sig. (2-tailed) | ,000 | | | | | | | | | | |
| | N | 22 | 22 | | | | | | | | | |
| Implemented PER | Pearson Correlation | ,864** | ,917** | 1 | | | | | | | | |
| | Sig. (2-tailed) | ,000 | ,000 | | | | | | | | | |
| | N | 22 | 22 | 22 | | | | | | | | |
| Implemented PRR | Pearson Correlation | ,383 | ,460* | ,642** | 1 | | | | | | | |
| | Sig. (2-tailed) | ,079 | ,031 | ,001 | | | | | | | | |
| | N | 22 | 22 | 22 | 22 | | | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IEBforBBR | Pearson Correlation | ,907** | ,801** | ,679** | ,243 | 1 | | | | | | |
| | Sig. (2-tailed) | ,000 | ,000 | ,001 | ,276 | | | | | | | |
| | N | 22 | 22 | 22 | 22 | 22 | | | | | | |
| IMBforBBR | Pearson Correlation | ,963** | ,885** | ,767** | ,300 | ,982** | 1 | | | | | |
| | Sig. (2-tailed) | ,000 | ,000 | ,000 | ,175 | ,000 | | | | | | |
| | N | 22 | 22 | 22 | 22 | 22 | 22 | | | | | |
| SanctionsBBR | Pearson Correlation | ,935** | ,865** | ,695** | ,222 | ,975** | ,986** | 1 | | | | |
| | Sig. (2-tailed) | ,000 | ,000 | ,000 | ,320 | ,000 | ,000 | | | | | |
| | N | 22 | 22 | 22 | 22 | 22 | 22 | 22 | | | | |
| AutoCorrectionSanctionBBR | Pearson Correlation | ,907** | ,842** | ,683** | ,246 | ,982** | ,980** | ,989** | 1 | | | |
| | Sig. (2-tailed) | ,000 | ,000 | ,000 | ,271 | ,000 | ,000 | ,000 | | | | |
| | N | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | | | |
| PublicDEF3 | Pearson Correlation | ,344 | ,186 | ,068 | -,317 | ,242 | ,282 | ,296 | ,175 | 1 | | |
| | Sig. (2-tailed) | ,127 | ,420 | ,769 | ,162 | ,291 | ,215 | ,192 | ,448 | | | |
| | N | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PublicDEBT 60 | Pearson Correlation | -,644** | -,796** | -,696** | -,509* | -,661** | -,692** | -,696** | -,729** | ,182 | 1 | |
| | Sig. (2-tailed) | ,002 | ,000 | ,000 | ,018 | ,001 | ,001 | ,000 | ,000 | ,430 | | |
| | N | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | |
| GRPEvsGR GDP | Pearson Correlation | ,027 | -,096 | -,180 | -,519* | ,045 | ,044 | ,045 | -,018 | ,616** | ,179 | 1 |
| | Sig. (2-tailed) | ,911 | ,687 | ,448 | ,019 | ,850 | ,853 | ,849 | ,939 | ,004 | ,450 | |
| | N | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |

**. Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

*Source: Author calculations*

Table Number 1 depicts our detailed analysis on the links between fiscal rules, enforcement and monitoring bodies, correction and sanction mechanism and different variables related to the state of public finances (public debt, public deficits and difference between the growth rate of public expenditures and the growth rate of the GDP).

We continued our preliminary analysis in order to analyse how our chosen variables influence each other and answer the question: is it a positive or negative influence. Also, our deepened analysis allows us to further confirm our two hypotheses: the fiscal integration process has evolved over time as countries become more disciplined and follow the same guidelines and that fiscal integration implies more and more discipline denoted through positive links between our variables.

One of the most important variables is the implementation at a national level of the balanced budget rule – as it exercises an influence on most of the other variables. The implementation of the BBR at a national level by more and more EU member states can be positive linked (strong positive correlation) with variables such as the implementation of a public debt rule, of the public expenditure rule, existence of independent enforcement and monitoring bodies regarding compliance with the BBR, existence of sanction and correction mechanisms and the levels of the public debt. The strong connection with all these variables depicts a clear fact: setting up fiscal rules isn't as simple as it would seem at a first glance. In order for a fiscal rule to achieve its potential (positive effects on specific indicators), other pieces of the puzzle need to be established or implemented. As stated in previous paragraphs, in order for a rule to become 'fully functional' it needs at least one independent enforcement body, an independent monitoring body (that also enhances reporting), sanctions and correction mechanisms in order to achieve compliance and correction if let's say, a temporary shock hits an economy. So, treaties aren't near far enough in order to achieve sound public finances, mainly because governments are lead and composed of politicians who don't always follow the general welfare, or aren't economic specialists.

The implementation of a public expenditure rule is significant correlated with the implementation of a public debt rule. So, rules aren't always implemented as a single piece of a bigger picture. In order to achieve sustainable public policies, rules come as a package of constraints that regulate limits or boundaries that should not be crossed. Also, there seems to be strong connection between the implementation of the public expenditure rule and the implementation of a public revenue rule, existence of independent enforcement and monitoring bodies for the BBR, implementation of sanction and correction mechanisms regarding the BBR in EU member states and the levels of public debt.

There also seems to be a strong connection between the implementation of a monitoring body and an enforcement body for the BBR, and between these two and sanction and correction mechanisms and public debt levels. So, as a new monitoring or enforcement body arises as a backup power for the BBR, sanction and correction mechanism accompany them. In fact, it would be highly improbable for governments and policy-makers to be sanctioned for non-compliance if there are no enforcers. First, the monitoring body keeps a close eye on the evolution of the balance of the budget, and if long-term deviations manifest themselves as a result of wrong decisions, policy-makers are sanctioned and the correction mechanism is activated in order to bring back equilibrium and to maintain the solidity of the public finances. Also, only the existence of independent monitoring and sanction bodies has a positive influence on the balance of the public budgets, as they send a clear message to policy-makers: comply or pay.

Maintaining debt levels less than 60% of the GDP is also clearly connected with our other chose variables except public deficits. As so, it would seem that as more rules, monitoring and enforcement bodies, and sanctions and correction mechanism are taken into account and implemented, the more likely there is a change and EU debt levels are kept under the 60% of the GDP limit. This positive influence represents a drop of hope for future lower debt levels being registered through the European Union.

What is extremely surprising is that the variable Number of countries which have a public deficit of 3% isn't connected with the other variables, especially as we've expected with the budget balance rule. This is quite an unexpected result, mainly because most of our variables are linked to compliance with the BBR (implicit with deficit levels under 3%). The only strong connection that can be established is between maintaining deficits under 3% of the GDP and the growth rate of the public expenditure. As states restrain the growth rate of their expenditures under the growth rate of the GDP, the correlation between public expenditures and revenues leads to equilibrium, and thus to balanced budgets.

## CONCLUSIONS

The European Union, as a heterogeneous formation of European states, represents a dream that became true, a reason and an impulse for further collaboration and integration. In this context, a common ground for discussions is being represented by the fiscal integration process and the solidity of public finances. These two concepts, fiscal integration and solid public finances are related to the point that they intertwine on the case of the EU. In order to achieve future economic stability, all EU members need to contribute by enhancing the solidity of their fiscal and budgetary policies, using a particular strange path engaged by fiscal integration: using fiscal rules as constraints on policy-makers.

It was our goal for this article to offer an insight on the development of the fiscal integration process, in particular on the evolution of certain variables highly related to the solidity of the EU member states public finances, solidity rendered through variables such as low public debt and deficits levels and maintaining the growth rate of the public expenditures under the growth rate of the GDP. Both of our hypotheses were confirmed: the fiscal integration process has evolved in a positive manner over time and EU member states became more disciplined and more careful regarding the solidity of their public finances.

First, we analysed how our chosen variables evolved over time (years 1994-2015), depicted by the number of countries which implemented them at a national level, the main focus being the BBR (Balanced Budget Rule), as it exerts influence on all our other variables, as our analysis proved. Analysing data from 1994 until 2015 regarding all EU member states, it is clearly that countries evolved in a positive matter as the fiscal integration process got deeper. First, as our graphics depict, more and more EU member states implemented a rule regarding the balance of their budgets, a rule regarding debt levels or public expenditure levels. Second, while in 1994 only 4 states had implemented a public expenditure rule for the general or central government, in 2015 19 states had implemented such a rule.

Also, as we've stated over the article, the existence of rule isn't sufficient to ensure solid public finances, enforcement and monitoring bodies, sanctions and correction mechanisms being also necessary. Unfortunately, these instruments evolved in EU after years 2010-2011, after the crisis proven that having rules without related instruments that ensure compliance to them is inefficient.

While the number of states that register a public deficit lower than 3% of their GDP had a positive evolution until the crisis, and also after states started to recover (the worse year being 2009), less and less countries register a public debt level lower than 60% of their GDP, thus suggesting non-compliance with the debt rule stated also in treaties. Although it is clear that treaties signed by EU countries had an important contribution, there exists a need that the rules stated in treaties should be implemented at a national level with other specific mechanisms at hand.

As we've continued our preliminary analysis, we discovered that most of our accounted variables are correlated in a positive direction. For example, the implementation of the Budget Balance Rule at a national level can be positively linked (significant positive correlation) with other variables such as public debt and expenditure rules, existence of independent enforcing and monitoring bodies, existence of correction and sanction mechanisms and registered public debt levels. As so, formulating a fiscal rule as a constraint on policy-makers isn't enough, other variables and mechanisms need to be accounted. First, the rule needs to be formulated in a manner that it permits for states to comply with it. Secondly, the rule needs to be approved at the EU level and after implemented at a national level. And third, in order for a fiscal rule to become functional, it needs an enforcer, a monitoring body, and existence of sanctions for the policy-makers if they do not comply, plus a correction mechanism to re-establish the equilibrium.

What we found strange is that while the BBR mainly targets EU member states maintaining a public deficit lower than 3% of their GDP, we didn't find any correlation between the number of countries which have a public deficit lower than 3% of their GDP and almost all of the variables, including the specific rule. The only variable that can be linked to countries that register low deficits is the growth rate of public expenditures being smaller than the growth rate of the GDP.

As we have seen so far, the fiscal integration process, rendered through our depicted variables, registered a positive evolution over time. Nevertheless, in order to form a fiscal union and to achieve more solid public finances, the process must go on. New crises and shocks will strike EU economies in the future, and the more disciplined the policy-makers are, the smaller the impact will be, allowing for faster economic recovery and better crisis management.

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# THE FINANCIAL PROFILE OF THE COMPANY AND OF ITS FIELD OF ACTIVITY

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**Abstract**: *The essential characteristics of the company from a financial point of view represent the financial profile of that company. When analyzing the financial situation, these characteristics help understand a certain behavior in investments, financing and operation. These characteristics are mainly defined by the following factors: the business that company deals with; the groups of interests which revolve around the company; the financial flows which take place between the company and the environment; the management's attitude towards the financial reports. If the first three categories have an objective character, the last one has a subjective character.*
**Keywords**: *the financial profile, the stakeholders, financial flows*

## 1. THE FINANCIAL PROFILE OF THE COMPANY

### 1.1. The company's lifecycle and financial profile

One of the most modern techniques used to define the financial profile results from the strategic analysis. The method is based on the lifecycle of the business, being the consequence of statistic observations and studies made in different sectors of activity. This method was taken by the financial analysts and correlated with Du-Pont system of rates for companies and with the averages on the fields of activity. From the point of view of the financial analysis, the characterization of the four main stages of the business lifecycle reveals the following conclusions with a general character. (Van Horne & Wachowicz, 2005).

*a) The startup stage* is characterized by a slow rhythm of growth of the turnover. The liquidity rates are reduced while the rotation speed of the management rates of the current activity (the rotation of stocks, the rotation of clients and the rotation of suppliers) is high. This fact, apparently contradictory, is due to the fact that at this stage the level of stocks and debts to clients is reduced. At this stage the company has a negative treasury and an acute need of liquidities necessary for investments. This fact is due to its incapacity to build a substantial working capital. The profits and the operation cash flows are much reduced or even negative. The global debt, respectively the long, medium and inclusively short-term global debt is usually very high. In consequence, the profitability and reliability indicators have satisfying levels.

b) *The expansion stage* has other characteristics. The accelerated rhythm of growth of the turnover is followed by the increase of the profit. Nevertheless the operational treasury flows remain below the profits, the company starting to give more substantial client credits as value and duration in time in order to stimulate the sales. Thus the indicators which have as a basis of calculation the turnover and the profit improves in a more accelerated rhythm compared to those which have as a basis of calculation the cash flows. The company's capacity to invest increases too, generating the reduction of the fixed assets' rotation. The margin rates based on profit do not reach the highest levels (due to the gap between the dynamics of the turnover and the profits). At this stage, although the operation risk reduces substantially, the operation doesn't act at its full power, the level of fixed costs (resulted on the basis of the growth of the depreciation resulted from the increased volume of investments materialized in fixed assets) still being high compared to the level of the turnover. The economic profitability of the assets is reduced as a consequence. The debt rates, although they have a tendency to get reduced, still present pretty high levels.

*c) The maturity stage* is characterized by the maintenance or the growth with a slow rhythm of the turnover. The company reaches constant and normal levels of the operation indicators. The financial rates tend to get close to the average rates in the field of activity. The profitability rates and the rotation speed of the assets are high, generating high levels of the productivity rates. The debt on term reduces to minimum levels or it disappears. The global debt degree is much reduced. The liquidity and solvency are high. The cash flows are also very high, much above the company's needs, at this stage the level of the investments being minimum.

d) *The decline stage* is characterized by a low rhythm of decrease of the turnover. The company orientates the liquidities to other investments. A large process of disinvestment of old technologies takes place.

The concept of company's lifecycle, although it is very useful in the evaluation, is not applicable in the case of the companies that have a multiple object of activity, in several fields of activity. Although it assumes the existence of a large range of products, they must belong to the same field of activity.

## 1.2. The groups of interests which revolve around the company

The company's stakeholders are represented by those individuals or groups who in carrying out their interests and objectives depend on the company, and on whom the company depends at its turn. The notion of stakeholder in free translation means the owner of a part (a piece) of the company.

In every sense, the stakeholders represent the groups of interests whose satisfaction of needs and interests depends on the company, and the company at its turn depends on them. In a large meaning, they are represented by shareholders, employees, managers, clients, suppliers, banks and the community understood in a large meaning. Strictly speaking, the stakeholders represent the groups of interests who have a direct contact with the company in order to satisfy their needs. The company depends on the way their needs are satisfied. Given the pecuniary nature of their interests and needs, the majority of relations between these groups are regulated legally.

There are two perspectives regarding the meaning of having a part (a piece) of the company: strategic and financial. (Palepu, et al., 2010)

1. The strategic perspective has the advantage it offers a large vision, because it focuses on the company's vision from the point of view of the market orientation. In this sense, the stakeholders are represented by the groups of interests from the external environment of the company: shareholders, final consumers (not clients), suppliers, partner banks and the community in a large sense. Each of them depends on the satisfaction of their needs by the company and, at their turn, they satisfy the company's needs. The needs are not understood only with a pecuniary meaning, they also have ethical, moral, social and ecologic components. The disadvantage of this perspective is that it enlarges too much the sphere to groups that sometimes have interests too vaguely defined, and the company depends too little on them. Also it ignores other groups of interests that have a direct impact on the company, but come from the internal environment, such as the employees or the managers.
2. The financial perspective has as a starting point the bankruptcy law and the priorities to satisfy the needs. This criterion limits the group of stakeholders from the external environment to the groups of interests that have direct relations with the company and to the groups of interests from the company's internal environment, relations which are well regulated legally and have a pecuniary goal. This perspective makes possible the clear delimitation, from a financial and legal point of view, of those who are interested by the good development of the company.

In order to work accordingly on long term, the company's strategies must take into account the main interests of the stakeholders and correlate them with the company's interests. The encouragement of an interest specific to a specified stakeholder, to the prejudice of another or of the company, respectively the failure to harmonize the company's objectives with those of the groups of interests, endangers the relation of mutual dependency, existing the possibility to emphasize the already existing conflicts of interests (however normal) and to influence in a negative way both parts.

Each stakeholder comes from an organized environment. The company has financial relations with each of these environments, being suppliers and users of financial resources just as the company. The company's relations with the stakeholders are complex, but they can be grouped on categories of relations of a financial nature which come from the operation, financing, investment and distribution activity. At its turn, the company also acquires the quality of stakeholder to certain actors from these organized business environments.

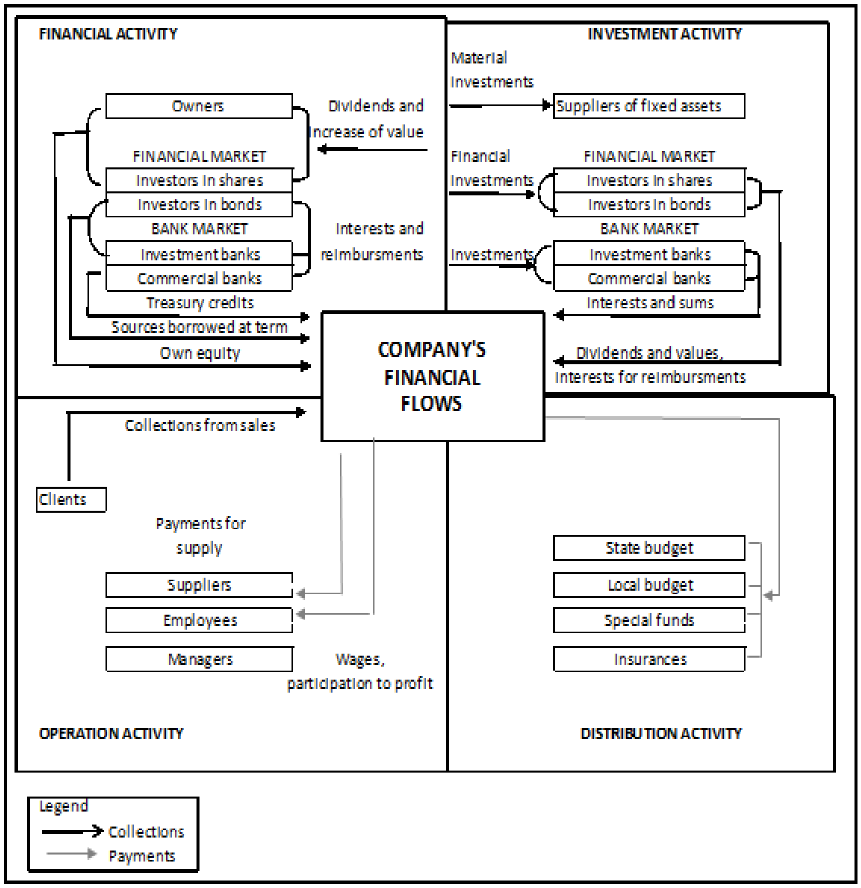


**Chart 1. The positioning of the stakeholders' financial interests to the company's activity**

Each category of stakeholders has different informational needs regarding the company's financial situation. These informational needs are formed depending on the positioning of the stakeholders' financial interests to the company's activity. They are specific to each category, being different according to the area of interest they come from and the asked detailed level.

## THE COMPANY'S FINANCIAL FLOWS

Within the company, like in the relations with the external environment, a series of economic flows, of a complex nature, take place. Being in a continuous activity and in permanent contact with the environment, the company has permanently flows inside and outside it. Among these flows, the most important are those with the company's stakeholders.

From the point of view of the economic nature of the flows, we have:

- real flows, which include the goods and services which circulate in the company as well as in the relation with the environment;

- financial flows, which include the value circuit in the company as well as in its relations with the environment.

From the perspective of the financial analysis, the financial flows present a special importance.

*The financial flows* represent the set of movements which have an immediate or future impact on the company's results and liquidities. They are diverse, heterogeneous, being generated by the operation, financial and investment activities.

From the point of view of the financial management, there are: (Lala-Popa & Miculeac, 2012)

- financial flows from the operation activity, which reflect the essence of the company's object of activity;
- financial flows from the financing activity;
- financial flows from the investment activity;
- financial flows from the distribution activity;
- extraordinary flows, which result from situations which are not usually assignable to the company's activity.

The totality of the financial flows, their volume, dynamics and structure define, at last, in a defining way, the company's financial profile.

## 1.4. THE POSITIONING OF THE MANAGEMENT TOWARDS THE FINANCIAL REPORTS

The management must report to the General Meeting of the Shareholders the way it managed the patrimony within a financial year. The company's financial situation is reflected synthetically in the forms of accounting report. The goal of the financial analysis is to evaluate the company's financial situation and performances, to show on the basis of a diagnosis which is the strong and weak points, and to decide on the financial potential. The shareholders are essentially interested in this situation. Also, the managers are very interested, because on their basis is evaluated the performance of the management, respectively the persons in charge for the possible unfavorable situations.

There are two behavioral attitudes of the management towards the financial situation: (Brealey, et al., 2006)

- the passive attitude, which let the things follow their normal way;
- the active attitude, which allows in a certain measure the "make-up" of the situation.

In the practice of developed countries, it was noticed an active attitude of the managers to the possibilities offered by the accounting system. The temptation of "changing a little the truth" (within the legal limits) is already a common practice to companies no matter their size. This managerial practice is called the technique of arranging the window. That is why the financial analyst must pay a lot of attention to the way they approach the situation.

*The manipulation of rates in the annual reports* is possible if there is no standard system of rates at the level of the company or sector, or if the reports are not drafted by consulting companies. This thing allows the use of the most advantageous rates or the change of their calculation basis. The managers transform the limits of using the rates to their advantage. For example, to rotations of the active elements are more favorable if correlated with the total revenues instead of the turnover which is more reduced, especially in the case of companies with serious dysfunctions in operation, but with substantial financial revenues as result of treasury maneuvers, or with exceptionally substantial revenues as result of assets cession. In this case can also be used the profitability rate which has as a basis the result of the exercise, which in these conditions can be substantial, hiding the losses from the operation activity. This technique can be counteracted in the easiest way by detailing the situation on the operation activity.

*The managerial effect on the treasury* is practiced in the case of companies which have long-term credit lines to banks, where the credit is done through drawing, and if the sum is paid back within a month, there are no interests or they are minimum. In order to improve the treasury, the managers draw a rate from the credit at the end of the last month of the financial exercise, which they pay back within the first days of the first month of the following exercise. Because the balance reflects the situation of the patrimony at the moment of the last day of the financial exercise, it presents a better situation, because the working capital increases with the sum from the long-term credit.

*The managerial effect on the solvency* is practiced in the case of companies which benefit of special credit lines, from which they draw the needed sum and they pay it back in less than a year. In this case, given the specific legal nature of the contractual relation of the company with the credit bank, these credits are in the category of those on short term, changing substantially the debt rates on term and the solvency of the company.

The managerial effect on the liquidity is practiced through the changes brought to the elements of the current assets and current liabilities. In this case the managers try to postpone a little bit forcedly the payments and they try to accelerate a little bit forcedly the receipts, sometime appealing to the opportunist liquidation of stocks. Another solution is the payment of some debts, but only in a certain proportion, so that the reduction of the current assets in relative values is less than the one of credits.

*The leasing effect on the debt* is practiced by omitting to mention in the different reports (if they are not required clearly) if the company benefits or not of the leasing. The leasing is a special form of debt, being reflected in the accounts outside the balance. The drawing up of the functional balance, which incorporates the leasing, may emphasize the real degree of debt which, in this case, increases.

*Managerial techniques to bring up-to-date the inflation* refers to the possibility to use in reports the different techniques of bringing up-to-date. If the bringing up-to-date to the general rate of inflation is unanimously accepted, it doesn't mean that it is the most correct one, it being an average made up on those from the activity sector (which can be superior or inferior). It can be noticed that in the reports of the managers, the rates which favor them most are used.

In practice there are very many possibilities to alter the true reflection of the financial situation without breaking the law. These accounting tricks alter substantially the evaluation of the financial situation. It is up to the financial analyst to identify them. On the contrary, wrong conclusions can be drawn regarding the real performances of the companies and the contribution of the managers to these results.

## 2. THE FINANCIAL PROFILE OF THE FIELD OF ACTIVITY

The financial profile of a field of activity is given by the combination of the financial profiles of all the companies which work in that field of activity.

The use of the financial rates allows the analysis of the features of the different fields of activity. On their basis, the profile of that field of activity can be defined. The essence of building the average financial rates on the sector consists in emphasizing the differences between the sectors. There were several specialized studies which emphasized the differences of rates on fields of activity. In the U.S.A. each year the annual report of the average rates of fields of activity is published, which in essence includes the Du-Pont system of rates. The annual report includes data on the last 10 years, on sectors of activity, and within them on subsectors, there being a differentiation depending on the dimension of the companies.

*These average rates evaluate the financial profile of a certain sector of activity.* However, these rates are not relevant in the case of multinational corporations (due to the specificity of the business within each economy of the branches) and of the companies that have a multiple object of activity, belonging to several sectors of activity. Although they are very useful in the comparisons used by the financial analysis, there still are specific criteria to evaluate the average rates on sector, which must be taken into account because of precaution reasons, which can be materialized in the following aspects: (Brealey, et al., 2006)

- the proportionality hypothesis which implies that the report of the values at numerator and denominator would lead to the minimization of the differences related to the business dimension and the reporting period, but there are different dimensions (such as scale economies) which cannot be eliminated, and some elements do not evolve proportionally to the reality (the stocks compared to the turnover);
- the basis of comparison must be unitary, while the interests of the analysis users are different (the high liquidity is favorable to the creditors on short term, but for the shareholders it may represent a precarious management of liquidities);
- the analyzed period must be unitary, the beginning and the ending of the exercise is standardized at the level of the entire economy, giving not only a strong static character to the rates, but also a certain level of irrelevance (some activities are strongly seasonal, which means that the calculated rates are not relevant for the operation activity, implicitly endangering the relevance of the sector average);
- the accounting methods, whose periodical change cumulated with financial techniques such as reevaluations of the patrimony elements may alter the relevance of the rates at the company's level as well as at the sector's level;
- the unitary basket, which means that the average is made by all the members of the population, fact which can alter the average value through the presence of negative numbers (some companies have profit, and other companies register losses).

The financial profile of the sector also depends on the following specific aspects which are essential:

- the different informational power of the rates, certified by specialty studies;
- the different practices of the suppliers of economic and financial information;

- complications when too many rates are used;
- the specific of the economy and sectors, respectively of the accounting system.

In Romania, the main supplier of financial rates on sectors is the National Trade Register Office. The offered set includes 18 rates.

The comparisons are made depending on values delimited on intervals. The statistic technique splits the interval of comparison in four subintervals: interval 1 (maximum rare - superior quartile); interval 2 (superior quartile-median); interval 3 (median - inferior quartile); interval 4 (inferior quartile - minimum rate). The use of interquartile intervals and median instead of average is based on the following statistic grounds. The median is the value which has the highest possibility to appear, eliminating the influences due to exceptional values. The interquartile range takes into account the variation of the phenomenon, being more precise than the one made on the basis of the median. The delimitation presents the advantage of inclusion in several subintervals (4), compared to those offered by the average (2 subintervals). The difference between the inferior and superior quartile covers 50% of the companies.

## 3. CONCLUSIONS

The utility of the financial profile in represented by the evaluation of the sector's activity and the comparisons that can be made. The studies concluded that the individual results converge to the average of the sector, because the companies' managers tend to report permanently to them. It allows the evaluation of the financial profile and the general efficiency of a sector. It also makes possible comparisons between different sectors of activity, emphasizing clearly the differences and the elements specific to each sector, the identification of main tendencies at this level.

Still there is a series of risks which result from the abusive use of the average rates on the sector of activity. The different informational power of the rates may alter the global evaluation of the situation. The managers' tendency to correct the deviations from the average of the sector they compare themselves permanently may lead to the renunciation to some solutions which are more effective to those companies, the effect being known under the name of management to the average. The financial profile does not reflect the strategic alliances in the sector of activity. Also, the average of an industry where the majority of the companies is in decline is from the beginning irrelevant. The majority of the rates have a static character.

The main users of the average rates on sector are the banks, the consulting companies, the brokerage companies and the profile professional organizations. The managers of the companies frequently appeal to comparisons based on the average of the sector in order to evaluate the positioning of their own performances.

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# THE MACROPRUDENTIAL POLICY STRATEGY IN THE LIGHT OF THE LATEST GLOBAL FINANCIAL CRISIS

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**Abstract:** *In a domestic and international environment marked by a high degree of uncertainty, only a coherent mix of macroeconomic, structural and macro-prudential policies can sustain the lasting growth path and to ensure price stability and financial stability. The purpose of our paper is to analyze the macro-prudential policy strategy in the light of the latest global financial crisis, In order to ensure an adequate management of the imbalances to financial stability; an adequate macroprudential policy configuration is of prime importance. We highlight the particularities of macroprudential arrangements for safeguarding financial stability at European, and respectively national level. In order to reinforce financial system stability, the National Bank of Romania decided to pursue, aside from the EU-recommended intermediate macroprudential policy objectives, two other objectives: increase in financial intermediation and an improvement of financial inclusion. Our analysis shows that the banking system in Romania has an appropriate level of capitalisation, as highlighted by the Common Equity Tier 1 capital ratio which shows higher values than the combined buffer requirement applicable in 2016. The rest of the paper is organized as follows. Section 1 briefly surveys the major contributions of the literature review. Section 2 and 3 explain the particularities of macroprudential arrangements for safeguarding financial stability at European versus national level, while section 4 brings the main conclusions.*
**Keywords:** *monetary policy, financial stability, risks, central banks*

## 1. LITERATURE REVIEW

Ensuring and maintaining macrostability has become a key objective and a new design of financial stability policy is one of the key elements of reforms to achieve this objective. The implementation of macro-prudential policy is underway, in particular, on the role of central banks. The role of monetary authorities was reviewed, following the events triggered in 2007.

Therefore, the academic literature converge towards the idea that the central banks should be involved in formulating and implementing financial stability policy, given that such a policy is effective and not inconsistent with the monetary policy responsibilities. We invoke a number of reasons why the central bank should have a prominent role in the financial stability policy:

- financial instability can affect the macroeconomic environment, with remarkable consequences on economic activity, price stability and the monetary transmission mechanism;
- central banks represent lender of last resorts;
- performance of the functions in monetary policy provides to central banks a superior understanding of the macroeconomic environment, the financial market

infrastructure and institutions - essential for the performance of macro-prudential functions.

Therefore, the central bank can play an important role in macro-prudential policy because has expertise in systems analysis from a global financial perspective and has incentives to mitigate systemic risk ex ante. On the other hand, the increasing degree of financial innovation, especially on the instruments of credit risk transfer and upward trend of derivatives market, led to increasing complexity of monetary policy and raise challenges regarding its impact on the real economy (Anton, 2009), which motivates a suitable macroprudential policy configuration. Lastly, the central bank involvement in macro-prudential policy would ensure effective coordination between monetary policy and financial stability policies in a manner that preserve their autonomy (Weidmann, 2011). Also, Vinals (2010) considers that central banks can bring expertise, information and strong incentives to increase the effectiveness of macro-prudential policy.

The expertise of monetary authorities in the analysis of systemic risk is useful in calibrating macro-prudential policy. Central banks have a strong interest in design and implementation of effective macro-prudential tools, whether or not they are directly responsible. The reasons supporting this statement are (Vinals, 2010):

- ineffective macroprudential tools put additional pressure on monetary policy responsibility to avoid financial imbalances;
- ineffective macroprudential tools increase the likelihood of LOLR function in order to avoid a system-wide financial collapse, an aspect which can affect the successful implementation of monetary policy;
- ineffective application of macroprudential instruments is likely to affect the monetary policy transmission mechanism, both in normal times and in times of stress.

Also, Nier (2009) highlight three reasons why central banks want to implement effective macro-prudential policy:

- upward trend of financial excesses may generate substantial cost for macroeconomic policy objectives of a central bank, including price stability and the economic growth;.
- if prudential instruments are not applied effectively, the burden of monetary policy in combating the accumulation of financial imbalances increases;
- a greater frequency of financial excesses may compromise the effectiveness of monetary policy.

Once established the importance of central bank on financial stability policy, the post crisis dominant view in academic literature is that should be conferred to the monetary authority the financial stability objective associated with a clear mandate. The report “Rethinking Central Banking” published by Committe on International Economic Policy and Reform in late 2011 recommends to the central banks the followings:

- Central banks need to look beyond traditional interest-low inflation and adopt an explicit goal of financial stability. Macroprudential tools should be used alongside monetary policy to achieve this objective.

- increasing independence and credibility of central banks by recognizing and addressing tensions between inflation targeting and competing objectives.

Despite strong arguments in favor of a central bank's dual mandate, we find in literature and a series of contradictory arguments. We made a summary of them in the following table.

**Table 1. Pros and cons of dual mandate (price stability and that financial stability) of central banks**

| ***Pro arguments*** | ***Counter arguments*** |
|---|---|
| ✓ central bank's expertise in analyzing financial systems from a global perspective;<br>✓ central bank has incentives to mitigate systemic risk ex ante, because the financial instability affects macroeconomic environment, with remarkable consequences on prices and on monetary policy transmission mechanism;<br>✓ dual mandate would ensure effective coordination between monetary policy and financial stability policy in a manner that preserve their autonomy (Weidmann, 2011);<br>✓ an explicit mandate confer institutional power to issue macro-level regulations and to monitor their implications;<br>✓ The central banks participates, through its representatives, in the procedures of various structures and working groups of European bodies, and those international financial institutions have a countercyclical role during crises by providing financial assistance (Anton, 2013) | ✓ it is difficult to determine the right time for a proactive response of monetary policy and also makes it difficult for monetary authority to increase interest rates in the absence of inflationary pressures over short term;<br>✓ it is difficult to calibrate the size of a proactive monetary policy reactions and trying to respond to financial imbalances could exacerbate economic volatility (Hunter, Kaufman and Pomerleano, 2005);<br>✓ there is a risk to overload central bank objectives and a risk of losing credibility, if a goal is missed;<br>✓ there is a challenge drived from rarity, non-liniaritatea unpredictable nature of financial crises. It is particularly difficult to predict the circumstances in which financial stability policy actions may be required in order to prevent imbalances (Caruana, 2010); |

***(Source: summary based on literature review)***

We subscribe to the necessity to assign the mandate to safeguard financial stability to the central banks in the light of the arguments set out above, but also because if there are two structures of governance would appear a several incompatibilities:

- two institutions would be involved in liquidity management- central bank, in normal times, and the authority on financial stability in times of stress and it could be forced to operate as lender of last resort;
- authority on financial stability would act only in special cases it is possible to lose macroeconomic expertise;
- a new governance structure in time of crisis would generate further innovations and new regulations at the microeconomic level, and this structure will be exceeded by innovations in the field (Croitoru, 2013);

- quiet periods means inaction of financial stability authority and the economic agents might speculate this aspect, assuming excessive risk.

## 2. MACROPRUDENTIAL ARRANGEMENTS FOR SAFEGUARDING FINANCIAL STABILITY -PARTICULARITIES AT EUROPEAN LEVEL

Creating an appropriate framework for conducting macro-prudential policies in EU Member- whose necessity was revealed unequivocally by the global financial crisis- is a process carried out in accordance with Recommendation of European Systemic Risk Board (ESRB) of 22 December 2011. Each country has opted for a specific institutional framework, whose features depend, largely, on national supervision of financial markets.

In 13 countries (Belgium, Cyprus, the Czech Republic, Estonia, Greece, Hungary, Ireland, Latvia, Lithuania, Malta, Portugal, Slovakia, UK), the central bank has been designated as national macro-prudential authority. The choice is based mainly on the dominant role of the banking sector in the national financial system, which makes the central bank to hold the relevant expertise and the ability to translate quickly into practice the adopted measures. Such an institutional arrangement presents however the disadvantage that any error - whether real or only perceived by the public as such - in co-ordination of macro-prudential policies can have a negative impact on the credibility of the monetary policy.

On the other hand, in the following 13 countries: Austria, Bulgaria, Croatia, Denmark, France, Germany, Italy, Luxembourg, the Netherlands, Poland, Slovenia, Spain and Romania were established committees which should function as interinstitutional cooperation structures, bringing together representatives of the central bank, the national financial supervisory authority and the government. The main advantage is pooling of expertise of all financial market supervisors and the government, while the preponderant representation of central bank is likely to ensure the pro-active attitude of macroprudential policy. There are two EU countries (Finland and Sweden) where macroprudential mandate was assigned to national financial supervisory authorities, because their prerogatives have a broad enrollment, including the supervision of credit institutions.

Regardless of the chosen macro-prudential governance at national level, it is essential to be clearly defined, coherent, transparent and functional, with appropriate mechanisms for efficient cooperation of all authorities in order to ensure financial stability.

In the context of the single European market, financial stability can only be ensured by implementing correlated macroprudential measures. Effectiveness of macroprudential measures and achieving its objectives can be significantly affected by regulatory arbitrage. Although the EU financial sector is characterized by a high degree of integration, not all categories of macroprudential policy requires recognition by the Member States. Thus, the EU legislative framework provides more degrees of cross-border recognition on macroprudential measures, as follows: mandatory recognition, mandatory recognition to a certain threshold and voluntary recognition (reciprocal) by the ESRB involvement.

**Table 2. European framework for recognition of macro-prudential measures**

| ***Macroprudential measure*** | ***The legal framework*** | ***Mandatory recognition of prudential measures in National legislation, according to the European framework*** |
|---|---|---|
| Countercyclical capital buffer | art. 130, 135-140 CRD IV | Mandatory (up to level 2.5 percent) |
| A higher level of requirements for credit risk related to institutions using the standard approach | art. 124 CRR | Mandatory |
| A higher level of LGD for institutions using internal ratings | art. 164 CRR | Mandatory |
| Measures at national level | art. 458 CRR | voluntary |
| the systemic risk buffer | art. 133-134 CRD IV | voluntary |
| Pillar II measures | art. 103 CRD IV | No mention |
| the buffer for other systemically important institutions | art. 131 CRD IV | No mention |
| LTV and DTI limits | national legislation | No mention |
| The loan / deposit ratio | national legislation | No mention |

***(Source: NBR Financial Stability Report, December 2016, p. 10)***

## 3. THE PARTICULARITIES OF MACROPRUDENTIAL FRAMEWORK IN ROMANIA

In the years following the global financial crisis has become increasingly evident the need to adopt measures specifically designed to strengthen financial stability, increasingly the role of macro-prudential policy. At European level, the recommendations of the European Systemic Risk Board (ESRB) and new legislative package CRD IV / CRR (Capital Requirements Regulation and Directive) has been a defining element to create the macro-prudential policy. The literature on macroprudential policy does not provide a consensus on its objectives and instruments (Galati and Moessner, 2011). In Romania, an essential step in the process of finalizing the macroprudential policy framework was to define the macro-prudential strategy, which aims to link objectives, indicators and tools. In order to achieve the ultimate objective, to safeguard financial stability, NBR selected, in addition to intermediate objectives of macro-prudential policy recommended by EU - reduce and prevent excessive credit growth and indebtedness, reduce the maturity mismatches and prevent lack of market liquidity, limit direct and indirect exposure concentrations, reduction of moral hazard and strengthening the resilience of financial infrastructures - two specific national targets - the sustainable growth of financial intermediation and financial inclusion improvement. From the perspective of operational macroprudential policies, the National Bank Romania introduced instruments such as debt service-to-income (DSTI) and loan-to-value (LTV) for lending to households since 2004.

Also, in line with the requirements of implementing in national legislation the European regulation (CRD IV / CRR), the National Committee for Financial Stability (CNSF) issued Recommendation CNSF. 1/26 November 2015 regarding the implementation of capital buffers and, respectively, Recommendation No. 3/18 December 2015 regarding implementation of systemic risk buffer in Romania, based on which National Bank of Romania introduced the following tools (NBR, 2015):

- the capital conservation buffer- defined as a reserve built up during economic upturns to improve the capacity to absorb losses during periods of crisis, its amount being 2.5 percent of the total risk exposure of the institution ( level to be reached no later than 1 January 2019).
- the countercyclical capital buffer- built up during excessive growth period lending and can be released during contraction to absorb losses, aiming to increase the resilience of the banking sector to potential losses induced by excessive credit growth.
- the buffer for other systemically important institutions (O-SII buffer)- used as a reserve for mitigating systemic risk generated by the size of credit institutions, which may account for up to 2 percent of the total risk exposure.
- -he systemic risk buffer- intended to mitigate the structural risks which can be transmitted via the following channels: common exposures; the direct interconnectivity (through the interbank market) or indirect interconnectivity (information contagion informational) and concentration of the financial system.

**Table 3. Capital buffers according to CRD IV and the national legislation**

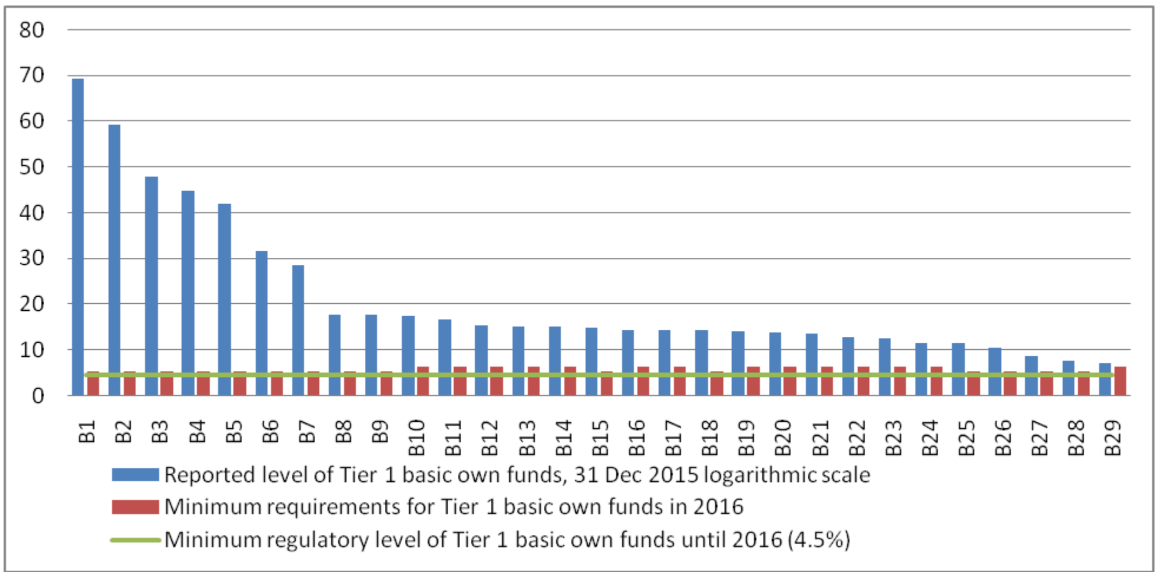
| ***Buffer*** | ***Level established in Romania*** | ***Deadline for implementation*** |
|---|---|---|
| Capital conservation buffer | 2.5 percent of total risk exposure amount of the institution by 2019 | Gradual phasing-in, i.e. 0.625 percent per annum during 2016-2019. The first rate of 0.625 percent has been activated as of 1 January 2016 |
| Countercyclical capital buffer | 0 percent | The buffer has been applied since 1 January 2016 |
| O-SII buffer | 1 percent of total risk exposure amount of the institution, solely for systemically important banks | The buffer has been activated as of 1 January 2016 |

| | | |
|---|---|---|
| Systemic risk buffer | 1 percent of total exposure amount to which it applies, solely for selected banks; it does not add to the O-SII buffer | The buffer has been activated as of 31 March 2016 |

***(Source: NBR Financial Stability Report, April, 2016, p.85)***

In accordance with the provisions of the CRD IV framework, capital buffers should consist of Common Equity Tier 1 capital. The banking system in Romania has an appropriate level of capitalization, as highlighted by the Common Equity Tier 1 capital ratio which shows higher values than the combined buffer requirement applicable in 2016 (see figure 1).

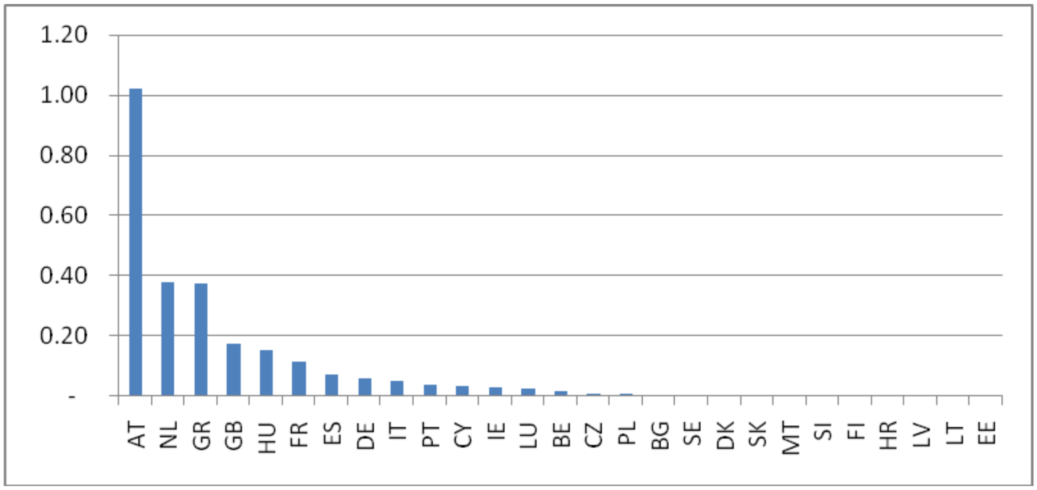
**Figure 1 The level of Tier 1 basic own funds reported by banks (Dec 2015) and of capital requirements applicable in 2016 (logarithmic scale)**




***(Source: NBR data sets)***

NBR is monitoring the situation changes in exposures of credit institutions. According to data available at 30 June 2016, the largest exposures of the Romanian banking sector against EU Member States are registered in Austria, Greece and the Netherlands, with share in total assets of between 0.22 and 0.39 percent (Figure 2)

**Figure 2 Romanian banking system exposures to EU member states (share of total assets)**




***(Source: NBR data sets)***

In the next period, central bank envisages to define the action plan, start the process of achieving the two new specific national targets and continue to develop the analytical framework to identify structural or cyclical systemic risks, by calibrating and introducing appropriate macro-prudential tools in order to increase the resilience of the financial sector, with benefits to financial stability. The objectives and instruments selected at national level will be reviewed and updated regularly, based on assessments and analyzes conducted by the NBR and the empirical experience acquired on the application of macroprudential tools at international level.

## 4. CONCLUSIONS

The post-crisis orientation emphasizes the need to reconcile potentially short run conflicting objectives, namely, price stability and financial stability. In addition to analyzing risks and vulnerabilities that could affect the soundness of financial system, it becomes increasingly evident the necessity to adopt specific measures designed to reinforce financial stability, defining a new role of macroprudential policy.

The institutional arrangements in the field of macroprudential supervision in the EU Member States differ, but the most important aspect for each national macroprudential governance framework is to be clearly defined, coherent, transparent and functional, in order to ensure the effective cooperation between all the authorities that can contribute to safeguarding financial stability. At European level, the recommendations of the ESRB and the new package CRD IV/CRR, were a defining element for macroprudential policies in the Member States. Recently, more and more European countries have been focused on operational stage of introducing various tools designed, primarily, to reduce excessive lending exposure in certain markets or risks associated to institutions that have acquired a systemic character.

In Romania, the central bank selected, in addition to intermediate objectives of macro-prudential policy recommended at EU level, two specific national objectives - sustainable growth of financial intermediation and financial inclusion improvement - in order to achieve the ultimate objective, to safeguard financial stability. International financial crisis has shown the need to create a new regulatory framework which provides to national authorities mechanisms to identify structural and cyclical risks, as well as with the macroprudential instruments necessary for mitigating such risks.

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# EUROPEAN FINANCIAL INTEGRATION AND ECONOMIC GROWTH

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**Abstract**: *Financial integration contributes to the development of the financial system by increasing competition, increasing stability, and the efficiency of financial intermediation, resulting in lower intermediation costs and a more efficient capital allocation. Financial integration increases the depth and liquidity of financial markets and thus enhances the resilience of the European financial system. The purpose of this paper is to analyze the impact of European financial integration on economic growth using the factors through which financial integration affects growth. Thus will be seen which of these factors had a significant impact on economic growth in the EU countries.*
**Keywords**: *financial integration, Europe, economic growth.*
**Jel Classifications**: F15, F36.

## INTRODUCTION

Financial integration contributes to the development of the financial system by increasing competition, increasing stability, and the efficiency of financial intermediation, resulting in lower intermediation costs and a more efficient capital allocation.

Financial integration increases the depth and liquidity of financial markets and thus enhances the resilience of the European financial system. It offers opportunities for risk diversification, geographic and promoting consumer income.

Measurement of financial integration in the EU countries is one of the main concerns of the responsible persons for policies applicable, and researchers in this field. Both studies theoretical and empirical findings indicate that integration contributes to more efficient capital allocation, which in turn support economic growth.

The purpose of this paper is to analyze the impact of European financial integration on economic growth using the factors through which financial integration affects growth. Thus will be seen which of these factors had a significant impact on economic growth in the EU countries.

The analysis can be extended then a greater number of years, depending on the availability of data, and research results will continue to be used both in econometric purpose, for improving the method used, and for financial consideration, to notice which the factors are causing problems of growth and economic development.

## LITERATURE REVIEW

Guevara and Maudos (2012) conducted a study where they analyzed the impact of development and financial integration on economic growth from the introduction of euro and the implementation of the Programme of Financial Sector Assessment (1999), quantifying the differential impact of the financial crisis in period 2008-2010.

Using data at the industry level, Friedrich, Schnabel and Zettelmeyer (2010) showed in their study that the European transition region benefited from financial integration in terms of economic growth, unlike others developing countries in the period that preceded the crisis. In the group of transition countries, the effect of financial integration is stronger in those countries that are politically closer to the EU.

Chen and Quang (2012) found that countries that are able to reap the benefits of international financial institutions fulfill certain conditions regarding the economic level, the institutional level and the inflation level.

Edison (2002) uses new data and econometric techniques to investigate the impact of financial integration on economic growth, and also to assess if this relationship depends on the level of economic development, financial development, the developing of legal system, corruption and macroeconomic policies. According to the results, the richer and the most educated countries tend to be more open to international financial transactions.

Mougani (2012) aimed in his study the providing of an empirical analysis about the impact of international financial integration on economic activity and macroeconomic volatility in African countries. The empirical results show that the impact of external capital flows on economic growth seems to depend mainly on the conditions and policies starting to stabilize foreign investment, increase domestic investment, productivity and trade, develop the domestic financial system, and expand trade openness and other actions to stimulating economic growth.

Abiad, Leigh, and Mody (2009) showed that Europe does not comply with the paradigm that capital flows "up" from poor countries to rich ones, and they bring few dividends when growth falls to poor countries.

Bonfiglioli (2008) stated that understanding the mechanism through which financial globalization affects economic performance is essential to assess the costs and benefits of opening financial markets. This paper tried to separate the effects of financial integration on two main determinants of economic performance: productivity and investment.

Hoxha, Ozcan and Volrath (2009) used in their study a model of optimum savings, which includes a production function. This production structure is consistent with empirical estimates of the real elasticity of substitution between the types of real capital.

Guevara and Maudos (2010) aimed in their study analyzing financial integration in Europe and its impact on growth from the introduction of the euro in 1999. Another important point of this paper is to focus on how the financial crisis international that began in 2007 affected the economic integration and growth. The results illustrate that a significant part of financial development can be attributed to progress in integration.

## DATA AND METHODOLOGY

The empirical analysis will be performed based on simple and multiple linear regression between the dependent variable and the independent variables set, and as econometric software will be used the programs Eviews Statistics and SPSS, which will help me to create a clearer picture on the correlations between different variables .

The dependent variable used will be the real GDP growth per capita and the independent variables will be: EONIA (Euro Overnight Index Average), interbank lending rates, exchange rates of interest, government bond rates and gross capital formation.

EONIA is the standard rate of interest for deposits in Euro currency. The European Central Bank is responsible for calculating the indicator EONIA daily. Eonia is the effective euro reference rate. It is calculated as a weighted average of all overnight unsecured lending transactions in the interbank market, countries in the European Union and European Free Trade Association (EFTA).

The data used for empirical analysis focuses on the period 2000 - 2014, with an annual frecuency. These informations were obtained from the Eurostat, World Bank and European Central Bank databases.

The equations for the two regressions are expressed by the following formulas:

Method: Least Squares

Residual = Growth - (C _ ((1)) * EONIA)

Method: Panel Least Squares

Residual = Growth - (C _ ((1)) * Gross_capital_formation + C _ ((2)) * Interbank_landing_rates + C _ ((3)) * Exchange_rates + C _ ((4)) * Government_bonds_rates).

## RESULTS

According to the indicator R-squared value, the variation in the dependent variable (economic growth) is explained in proportion of 19.3% by the variation of the independent variable (EONIA) of simple linear regression model.

Durbin-Watson test has a value of less than 2, which indicates that there isn't a serial correlation of errors, ie these does not have significant influence on the results of the regression model.

Akaike and Schwarz tests are used to compare two or more models. But in this paper is not the case (lower values are preferred).

As it can be seen in the attached table probability to T-test statistic is less than the benchmark (0.05) for variable EONIA, which means that this ratio is considered statistically significant. Also, the coefficient associated to this variable positively influences the model, having a positive value (0.45).

**Fig.1 Results of regression from economic growth and EONIA in the euro zone countries**

Dependent Variable: EC_GROWTH
Method: Least Squares
Date: 08/26/16 Time: 09:53
Sample: 1 15
Included observations: 15

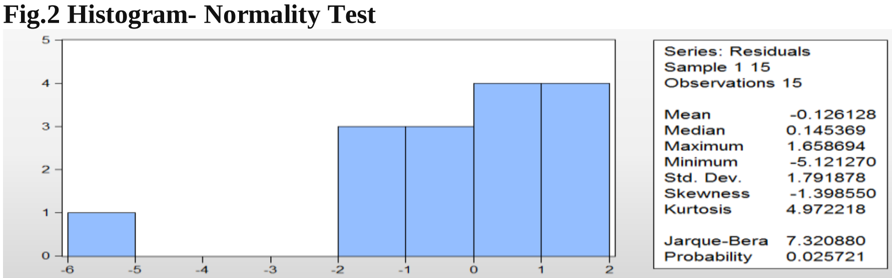
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| EONIA | 0.458957 | 0.179639 | 2.554889 | 0.0229 |

| | | | |
|---|---|---|---|
| R-squared | 0.193167 | Mean dependent var | 0.826667 |
| Adjusted R-squared | 0.193167 | S.D. dependent var | 2.000167 |
| S.E. of regression | 1.796628 | Akaike info criterion | 4.074040 |
| Sum squared resid | 45.19020 | Schwarz criterion | 4.121244 |
| Log likelihood | -29.55530 | Hannan-Quinn criter. | 4.073538 |
| Durbin-Watson stat | 1.827808 | | |

*Source: Own Eviews Estimations Statistics.*

According to the graph below, the distribution model variables has an average less than 0, presents an asymmetry negative (coefficient of asymmetry Skewness is less than zero), which means that the influence of variables in time registered a downward trend. How Jarque-Bera probability associated test is 0.02, lower than the reference level, it appears that the series is not normally distributed.

**Fig.2 Histogram- Normality Test**




*Source : Own estimations Eviews.*

According to the indicator R-squared value, the variation in the dependent variable (economic growth) is explained in proportion of 21.8% by the variation of the independent variables (gross capital formation, interbank lending rates, exchange rates of interest, government bond rates) of linear regression model.

As it can be seen in the table probabilities attached to test T-statistics are lower than the benchmark (0.05) for the variables gross capital formation, exchange rates and interest rates of government bonds, which means that these coefficients are considered significant statistically. The coefficients of the variables gross capital formation and interbank lending rates positively influences the model, with positive values, and the coefficients of the variables exchange rates and interest rates of government bonds have a negative influence.

**Fig.3 Results of regression from economic growth and the others variables for the EU 28**

Dependent Variable: REAL_GDP_GROWTH
Method: Panel Least Squares
Date: 10/06/16 Time: 11:15
Sample: 2000 2014
Periods included: 15
Cross-sections included: 28
Total panel (balanced) observations: 420

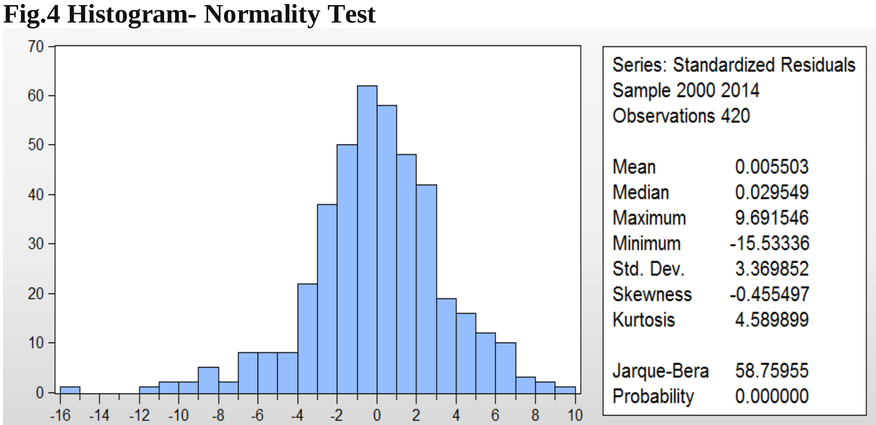
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| INTERBANK_LANDING_RATES | 0.122226 | 0.070517 | 1.733276 | 0.0838 |
| EXCHANGE_RATES | -0.051063 | 0.010360 | -4.928854 | 0.0000 |
| GOVERNMENT_BONDS_RATES | -0.410142 | 0.092314 | -4.442897 | 0.0000 |
| GROSS_CAPITAL_FORMATION | 0.368105 | 0.040581 | 9.070954 | 0.0000 |

| | | | |
|---|---|---|---|
| R-squared | 0.218351 | Mean dependent var | 1.982619 |
| Adjusted R-squared | 0.212714 | S.D. dependent var | 3.811584 |
| S.E. of regression | 3.381986 | Akaike info criterion | 5.284281 |
| Sum squared resid | 4758.136 | Schwarz criterion | 5.322760 |
| Log likelihood | -1105.699 | Hannan-Quinn criter. | 5.299490 |
| Durbin-Watson stat | 1.054991 | | |

*Source: Own estimations Eviews.*

According to the graph below, the distribution model variables has an average greater than 0, presents an asymmetry negative (coefficient of asymmetry Skewness is less than zero), which means that the influence of variables in time registered a downward trend. How Jarque-Bera test probability associated is 0, lower than the reference level, it appears that the series is not normally distributed.

**Fig.4 Histogram- Normality Test**




*Source: Own estimations Eviews*

Table Model Summary provides the value of the regression coefficient, denoted $R^2$, which is identical to the correlation coefficient between the two variables. Its value indicates that 21.9% of the variation in the dependent variable (GDP growth) is explained by the variation of the independent variables.

**Table nr.1**
Model Summary[b]

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .468[a] | .219 | .211 | 3.38527 | 1.071 |

a. Predictors: (Constant), Interbank_landing_rates, Investments, Exchange_rates, Government_bond_rates

b. Dependent Variable: GDP

*Source: Own estimations SPSS*

According to ANOVA table, its Sig value (0.000) is less than the threshold alpha (0.05), which entitles us to reject the null hypothesis and accept that there is a significant relationship between GDP growth and the independent variables taken into account.

**Table nr.2**
ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1331.372 | 4 | 332.843 | 29.044 | .000[b] |
| | Residual | 4755.932 | 415 | 11.460 | | |
| | Total | 6087.303 | 419 | | | |

a. Dependent Variable: GDP

b. Predictors: (Constant), Interbank_landing_rates, Investments, Exchange_rates, Government_bond_rates

*Source : Own estimations SPSS*

According to the table Coefficients, the coefficients of the variables investment and lending rates of government bonds are statistically significant. (Sig <α).

**Table nr.3**
Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .954 | 2.175 | | .439 | .661 |
| | Investments | .363 | .042 | .380 | 8.543 | .000 |
| | Government_bonds_rates | -.410 | .092 | -.205 | -4.432 | .000 |
| | Exchange_rates | -.059 | .021 | -.128 | -2.829 | .005 |
| | Interbank_landing_rates | .115 | .072 | .072 | 1.597 | .111 |

a. Dependent Variable: PIB

*Source: Own estimations SPSS*

Similar results were obtained others authors, such as Chen and Quang (2012), which demonstrated in their study that FDI and portfolio liabilities stimulate economic growth. Capital accumulation is a major channel that leads to increased financial integration, directly controlling the volume of domestic investment in the regressions. According to Guevara and Maudos (2012), both financial development and integration have been drivers of European growth. Also, Friedrich, Schnabel and Zettelmeyer (2010) demonstrated in their study that the effect of financial integration on growth is not only statistically significant but also important economically.

## CONCLUSIONS

Empirical analysis was based on achievement regressions between the two indicators, economic growth, expressed by the growth of the gross domestic product, and European financial integration, expressed by several indicators (EONIA, interbank lending rates, exchange rates of interest, government bond rates and gross capital formation). The results of the regression coefficient shows that the most significant of the variables used are EONIA and the gross capital formation. Empirical analysis also reveals that the exchange rates of interest and government bond rates have a negative influence on economic growth.

Therefore, increasing the share exchange interest rates and government bond rates would influence the growth rate of economy contraction in European Union countries.

Following the analysis we noticed that there is a significant relationship between the two variables, namely financial integration and economic growth. Consistent with most studies on this subject, the results confirmed that financial integration has a positive impact on economic growth in the European Union, during the time under review.

Financial integration affects several aspects of economic performance, particularly increasing rates of investment, technology transfer, trade openness, stimulates the development of the domestic financial system and economic growth. Financial integration is known as a potential source of macroeconomic instability.

In the future, financial integration should facilitate access to investment opportunities in less developed countries, leading to increased competition in these countries and to improve financial efficiency by reducing intermediation costs.

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# BUILDING A LVCSR SYSTEM FOR ROMANIAN: METHODS AND CHALLENGES

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**Abstract**: *The aim of this paper is to present a brief survey in the field of Automatic Speech Recognition (ASR) and major advances made in the last decades of research in order to highlight the fundamental progress that has been made so far. After years of development, the accuracy of Large Vocabulary Continuous Speech Recognition (LVCSR) systems remains the most important research challenge due to several degrading factors such as variations of the context, speakers, and environment. Various methods adopted by research workers when building Large Vocabulary Speech Recognition systems are presented based on the architectural components of such systems. Challenges existing in LVCSR for Romanian language and various techniques to deal these challenges have been presented in chronological order.*
**Keywords**: *Large Vocabulary Continuous Speech Recognition, Feature Extraction, Acoustic Modelling, Language Model, Hidden Markov Model, Speaker Adaptation*

## 1. INTRODUCTION

In past years, there has been a significant growth in the field of ASR for high-resource languages. Researches in this area have been focused on the most spoken languages of the world (such as English, for example) for which there is a notable commercial success of ASR systems. ASR systems such as: systems for name-dialing (Suontausta et al. 2000; Gao et al. 2001), travel reservations (Pellom et al., 2001), getting weather- information (Zue et al., 2000), accessing financial accounts (Davies et al., 1999), automated directory assistance (Jan et al., 2003), and dictation systems (Wegmann et al., 1996; Saon et al., 2003) are already integrated in powerful solutions that are on the market.

The main advantage of these languages is the fact that speech resources needed to build acoustic models and linguistic resources needed to build general or domain-specific language models are widely available. On the opposite side, due to lack of such resources, some languages have received much less attention.

For Romanian, as under-resourced language (Berment, 2004; Cucu et al., 2014), there are just a few freely usable speech and linguistic resources such as transcribed and annotated speech corpora, phonetic dictionaries. Even though several research groups have been focused on creating such resources, these are not publicly made available. In this way, a LVCSR system for Romanian has not been developed yet. This is the main reason which calls for further research in this domain.

There are some important aspects that need to be taken into consideration when building a LVCSR system for Romanian language. Firstly, specifics of Romanian become a challenge for computational processing of the language. Romanian is a highly inflected language with various linguistic particularities (Trăndăbăț et al., 2012) that influence the acoustic process modeling. Secondly, developing a high accuracy LVCSR system is a difficult task. Variability in speech due to several degrading factors such as speaker's vocal tract, environment characteristics or transducer type become a research challenge in building speech recognition systems.

The remainder of the paper is organized as follows: Section2 provides the ASR classification based on variation parameters that influence the ASR task. Then, in Section 3 is described the mathematical formulation based on Bayesian model of a speech recognizer. Architectural details and main algorithms of each component of a LVCSR system are explained in Section 4. Section 5 presents national effort in building speech recognition systems for Romanian language. The last section concludes the paper.

## 2. ASR CLASSIFICATION

ASR systems can be classified according to some variation parameters that are related to the task as it is illustrated in Figure 1. Type of speech or speaking mode, dependence on speaker, size of vocabulary and bandwidth are the different basis on which researchers have worked (Ghai and Singh, 2012). Some of these parameters are:
-vocabulary size: one dimension of variation in speech recognition tasks is the vocabulary size. Speech is easier when the vocabulary to recognize is small or medium. For example, the task with two word vocabulary, like recognizing ”yes“ or ”no“ words, or the task with ten word vocabulary, like recognizing digits, are relatively easier when compared to large vocabulary tasks. Tasks like transcribing broadcast news or telephone conversations involve vocabularies of thousands of words and are much harder to handle (Adami, 2010).
-speech mode: A second dimension of variation is how natural the speech is and determines what types of utterances the speech recognition system is able to recognize. In isolated word recognition (such as digit recognition) or connected words recognition (such as sequence of digits recognition) each word is surrounded by pause. These types of recognition are much easier than continuous recognition, where users speak almost naturally and the ASR system has to determine the utterance boundaries.
-speaking style: The level of difficulty of continuous speech recognition task depends on the type of interaction. Recognizing speech from human-human interactions (such as spontaneous speech recognition by transcribing business meetings conversations, telephone conversations or broadcast news) is more difficult than recognizing speech from human-machine interactions (such as read speech which simulates the dictation task) (Jurafsky and Martin, 2009).
-speaker mode: Another dimension of variation is speaker characteristics (regional accent, gender, speaking rate, vocal effort etc.). There are two types of speech recognition systems regarding the speaker mode: speaker dependent and speaker independent systems. Speaker dependent systems can be used by a specific speaker; meanwhile

speaker independent systems can deal with different accents and pronunciations (Rabiner et al., 1979).
-transducer type: The type of device used to record the speech can affect the speech signal. The recording may rage from high-quality,head-mounted microphones to cell phones.
-background noise: A final dimension of variation is noise. Noise of any kind makes the recognition harder. Thus recognizing a speaker dictating in a quiet office is much easier that recognizing a speaker dictating in noisy environments.

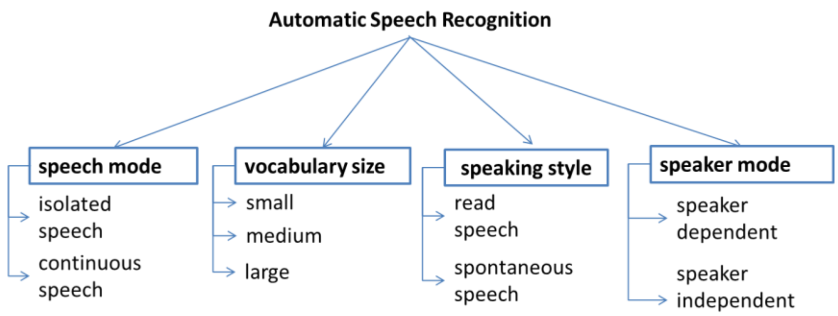


**Figure 6 ASR classification based on some variation parameters related to the task**

## 3. MATHEMATICAL FORMULATION OF LVCSR

The standard approach to LVCSR is to assume the probabilistic or Bayesian model whereby a speech signal corresponds to a word or sequence of words, in the vocabulary, with a certain probability. The input speech signal from a microphone is converted into a sequence of acoustic observations $O = o, o_2, \dots, o_n$ in a process of feature extraction. Assuming that a sequence of words $W = w_1, w_2, \dots, w_n$ was spoken, the decoder computes a probability for matching these words with given acoustic observations$O$. Finally, from all possible sequences of words, the decoder selects the one with highest probability. This sequence of words with highest probability is more likely to be produced given the observed acoustic evidence.

The implementation of the probabilistic model described above can be expressed as follows:

$$\hat{W} = \underset{W}{argmax}\, P(W|O) \quad (1)$$

Using Bayes' rule, Equation (1) can be rewritten as:

$$\hat{W} = \underset{W}{argmax} \frac{P(W)P(O|W)}{P(O)} \quad (2)$$

Since $P(O)$ is independent of W, the equation (2) is equivalent to:

$$\hat{W} = \underset{W}{argmax}\, P(O|W)P(W) \quad (3)$$

The first term in equation (3), $P(O|W)$ is generally called the acoustic model (AM), as it estimates the probability of a sequence of acoustic observations *O* when a speaker utters a sequence of words *W*. Thus, $P(O|W)$ is closely related to phonetic modeling. The probability $P(O|W)$should take into account speaker variations, pronunciation variations, environmental variations, and context-dependent phonetic co-articulation variations.

The second term in equation (3), $P(W)$ is called the language model (LM) and expresses how likely a given sequence of words *W* is to be the source sentence uttered. The LM is typically an*n*-gram model in which the probability of each word is conditioned only on its *n-1*predecessors.

Given the AM and LM probabilities, the probabilistic model can be operationalized in a search algorithm that tries to generate the word sequence that has the maximum probability for a given acoustic waveform (Jurafsky and Martin, 2009).

## 4. ARCHITECTURE OF LVCSR

The principal components of a LVCSR system are illustrated in Figure 2. A LVCSR system takes as input the speech from a recorded audio signal and produces as output the sequence of words corresponding to the input speech signal.

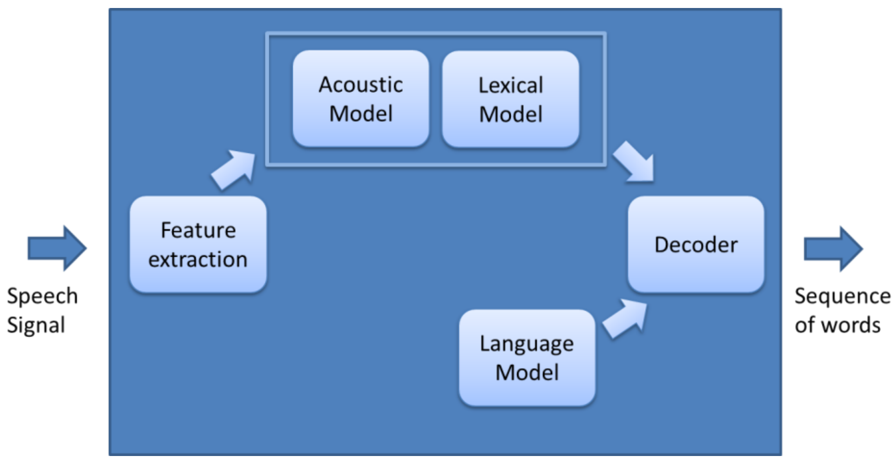


**Figure 7 LVCSR system components**

## 4.1. FEATURE EXTRACTION

Feature extraction or signal processing requires much attention because the performance of an LVCSR system depends heavily on this stage. Feature extraction seeks to provide a compact representation of the speech waveform. This representation should compress the speech data while keeping the linguistic information, despite the speaker, channel or environment characteristic. Thus, the acoustic waveform is sampled into frames (usually of 10, 15, or 20 milliseconds), each frame having a duration of 20 to 25 milliseconds. These frames are then transformed into a sequence of acoustic features. The most used methods for feature extraction are Mel Frequency Cepstral Coefficient (MFCCs) (Davis and Mermelstein, 1980) and Perceptual Linear Prediction (PLP) (Hermansky, 1990). MFCCs are the results of a cosine transformation of a log of short-term power spectrum expressed on a non-linear Mel scale of frequency. Although this method is proven to be more efficient than other methods (Tiwari, 2010), PLP can give better results than MFCCs, especially in noisy environments (Young, 2008). PLP computes linear prediction coefficients applying several psychophysically-based spectral transformations on the short-term power spectrum and then transforms the linear prediction coefficients to cepstral coefficients.

### 4.2. ACOUSTIC MODEL

The acoustic model is the main component of a speech recognition system and is developed in order to establish a statistical representation for the feature vector sequences computed from the input speech. This model computes the probability of the observed feature vectors given linguistic units (words, phones). It is responsible for detecting the spoken phoneme which is defined as the smallest unit of speech that distinguishes a meaning according to (Gruhn, Minker and Nakamura, 2011).

For LVCSR it is important to decompose a word into sub-word speech units (such as phones) and build statistical models for these sub-word speech units. For every spoken word, the corresponding acoustic model is built by concatenating phoneme models to make words as defined by a pronunciation dictionary.

The most effective type of AM model is Hidden Markov Model (HMM) (Baum, 1972). According to HMM based AM, it is assumed that the feature vector sequences corresponding to each word is generated by a Markov chain. Thus, the speech is modeled as a sequence of states, where each state of the Markov chain corresponds to a single phone. In such model, a word HMM consists of a sequence of HMM states concatenated together. What it is important to mention here is that there are not allowed arbitrary transitions between states due to sequential nature of speech; states can only transition to themselves or to successive states (Jurafsky and Martin, 2009).

In order to compute for each HMM state the likelihood of a given feature vector, there are several classifiers used to estimate the AM model. For example, Subspace Gaussian Mixture Models (SGMMs) have been proposed to deal with under-resourced languages and recent studies (Povey et al., 2011) show that SGMMs can outperform the conventional Gaussian Mixture Models (GMMs), particularly with smaller amounts of training data which consist of audio recordings of speech and their text scripts. Due to SGMMs' limitations (Povey et al., 2011), most speech recognition systems use GMMs as the likelihood function to estimate acoustic model. GMMs expose several advantages such as flexibility and capability of representing a large class of sample distributions (Jurafsky and Martin, 2009), insensitiveness to the temporal aspects of the speech (Reynolds, Quantieri and Dunn, 2000).

### 4.2.1. HMM CONTEXT MODELLING

When building a HMM based speech recognition system, there exist two options: training context-independent (CI) models, known as monophones, or training context-dependent (CD) models. The CI models have the advantage of a good coverage of the training data but they are too general and do not model the contextual phonetic variations (Junqua and Haton, 1996). In contrast, CD model take into consideration the co-articulatory effect of speech is much more consistent (Waibel and Lee, 1990). The most common kind of context dependent model is a triphone HMM (Huang, Acero and Hon, 2001) which represents a phone in left and right context. For example, in the triphone "Z – o + k" that corresponds to SAMPA transcription (Young, 2008) for the Romanian word "joc", the phoneme "o" has as left context "Z" and as right context "k" (Munteanu and Vizitiu, 2008). CD models ensure a better modelling accuracy of speech recognition systems, but the number of triphone models increases heavily when building LVCSR systems. To handle this problem, Young (1992) proposed first model-based tying technique. Another strategy known as state tying is proven to be more efficient (Odell, 1992; Woodland and Odell, 1994) and is generally adopted when modelling triphones. According to this technique, acoustically similar states of the models built for triphones corresponding to each context are grouped together into clusters. The clustering in phonetic classes is achieved using phonetic decision trees.

### 4.2.2. MODEL ADAPTATION

The AM can be adapted to new speakers in order to achieve an improved accuracy when creating a SI system. In addition to minimize the differences between the model and the new speaker, model adaptation can be used to estimate models on a limited amount of training data. There are three main adaptation techniques, including Maximum A Posteriori (MAP) adaptation, which is the simplest form of acoustic adaptation, Vocal Tract Length Normalization (VTLN), which warps the frequency scale to compensate for vocal tract differences, and Maximum Likelihood Linear Regression (MLLR), which adjusts the Gaussian density parameters or feature vectors so as to increase the likelihood of the adaptation data.

### 4.3. LEXICAL MODEL

Lexical model is developed to provide the pronunciation of each word from the text scripts corresponding to the audio recordings of speech. This model provides a pronunciation dictionary which contains the list of words and the phone sequence they consist of. It describes how a sequence of sub-units, such as phones, is used to represent larger speech units, such as words from the uttered sentence.

## 4.4. LANGUAGE MODEL

Language model is the largest component of a LVCSR system and it is developed for detecting the connections between the words in a sentence. This model includes syntactic and semantic rules of a language that constraints the way in which words can be combined into acceptable sentences. Some recognized sentences can be grammatically correct but they are meaningless for Romanian language. For example, the sentence "ceaparoșieestesănătoasă" and the sentence „ceaparoștiieestesănătoasă" are grammatically correct but the second one has no meaning (Cucu, 2014).

If only syntactic constraints are expressed, the LM is reduced to a grammar. Finite state grammars (Aho et al., 1986) are the simplest way of expressing a language model for speech recognition. These grammars are expressed as an unweighted regular expression that represents a finite set of recognizable statements (Zweig, 2004). N-gram models are currently the most widely used LMs in LVCSR. An*n*-gram LM provides the correct word sequence by predicting the likelihood of the *n*-th word on the basis of the *n*-1 preceding words, as it is shown in equation (4):

$$P(W) = P(w_1, w_2, \dots, w_{n-1}, w_n) = \\ = P(w_1) \cdot P(w_2|w_1) \cdot P(w_3|w_1 w_2) \cdot \dots \cdot P(w_n|w_1 w_2 w_3 \dots w_{n-1}) \quad (4)$$

In order to estimate the above probabilities, whether the LM is a unigram (n=1), bigram (n=2) or trigram (n=3) model, it used a method called Maximum Likelihood Estimation (MLE). According to MLE, the parameters of the LM are estimated by taking counts from a corpus and normalizing them so they lie between 0 and 1 (Jurafsky and Martin, 2009).

During the construction of n-gram language models for LVCR systems, two problems are being encountered. Firstly, large amount of training data generally leads to large models which are difficult to handle when building a speech recognition system. In order to overcome this issue, there have been proposed different approaches for reducing the size of LMs, including: count-cutoffs, Weighted Difference pruning, Stolcke pruning, and clustering.

The second problem addresses sparse data faced during the training of domain specific models. This issue is caused by the fact that if a training corpus is limited then some acceptable words sequences of a given language are bound to missing from it. This missing data means that the MLE for some word sequences is zero. Smoothing the probabilities of a language model is essential to deal with the unseen words from the training corpus. In order to deal with data sparsity problem, several smoothing techniques have been developed, such as: additive smoothing, Good-Turing estimate, Jelinek-Mercer smoothing, Katz smoothing, Witten-Bell smoothing, Absolute discounting.

Kneser-Ney smoothing algorithm is the state of the art in this domain (Kneser and Ney, 1995) and it outperforms all other smoothing algorithms in LVCSR applications.

### 4.5. DECODER

The task of the decoder is to find the best word sequence given the AM and LM. One approach is to search for all possible sequences. However, for LVCSR systems, the search space can become prohibitive. The search space can be described as a finite state machine, where the states are HMMs of words and the transitions between these states are defined by the language model. In recent years, several decoding algorithms have been developed in order to reduce the search space: Stack decoding algorithm, Viterbi algorithm for HMMs (Rabiner, 1989), or multipass search (Huang, Acero and Hon, 2001).

## 5. ROMANIAN LANGUAGE-CHALLENGES AND DEVELOPED ASR SYSTEMS

Although it is one of the European Union languages, Romanian is still considered a low-resourced language from the point of view of speech and language processing resources. An under-resourced language usually displays some features (Berment, 2014) such as: limited presence on the web, lack of linguistic expertise, lack of electronic resources for natural language processing (NLP) such as monolingual corpora, bilingual electronic dictionaries, and transcribed speech data.

Since 1980's there has been a high interest in developing a speech recognition system for Romanian (Burileanu, L., 1983; Drăgănescu and Burileanu, 1986) and several studies in this field have been driven. Various research workers focused on simple tasks such as vowels recognition (Grigore, Gavăt and Zirra, 1998) or isolated words recognition (Burileanu et al., 1998; Valsan, Sabac and Gavăt, 1998; Sabac, 1998; Burileanu and Popescu, 2004).

Even though there have been made improvements in the field of ASR, the LVCSR problem for Romanian language is far from being solved. The main problem that inhibited the development of large vocabulary tasks is the absence of speech and language resources for Romanian. However, specific speech databases have been created over the years by Romanian research groups but these researches are not widely available.

The latest work in speech recognition is still limited to small-vocabulary tasks. For example, in (Oancea et al., 2004) the authors report a small-vocabulary (approximately 3000 words) continuous speech recognizer in which the number of speakers is limited to 10. The work from (Dumitru and Gavăt, 2008) presents recognition result of 11 speakers for a small-vocabulary task (approximately 4000 words).

In spite of small speech database used for training the speech recognition systems, researchers have successfully adopted different acoustic modelling techniques. For example, Artificial Neural Network (ANN) based approaches are presented in (Dumitru and Gavăt, 2008; Domokoş, 2009), a vector-quantization (VQ) algorithm is illustrated in (Burileanu and Popescu, 2004) and hybrid recognition techniques are proposed in (Dumitru and Gavăt, 2008).

Regarding the lack of Romanian linguistic resources needed for developing a LVCSR system, researchers have tried to overcome this issue using different methodologies. For example, (Cucu et al., 2013) have proposed a methodology that aims to create domain-specific language resources using statistical machine translation.

## CONCLUSIONS

In the past decades, several advances in the field of ASR were accomplished for high-resourced language of the world. The availability of speech resources has been facilitating the development of successful ASR commercial solutions. New methods have been created for acoustic and language modeling and the number of deployed speech-based applications reflects the research advances made over the years. Despite the advances, the LVCSR problem is still not solved. There are some variation parameters that influence the high accuracy development of a LVCSR system such as background noise or speaker characteristics.

In Romania, the technology progressed from systems that could recognize digits or a few words to small vocabulary speech recognizers. Due to lack of acoustic and language resources, a LVCSR system has not been developed yet. In order to overcome these issues, several research groups have been focused on creating necessary resources in building such systems, but these resources are not widely available.

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# INFLUENCE OF DEMOGRAPHIC AND SOCIAL FACTORS OVER VOLUNTARY PENSION AND LIFE INSURANCE IN ROMANIA

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**Abstract**: *The European Union faces major demographic changes on medium and long term, the elderly population increasing in contrast to the young generation [17]. Demographic trends presented in the Ageing Report [7] look unpromising for the next decades. In the context of the pressure which demographic aging puts upon social protection systems, pension systems' management is a challenge even for the developed countries. Another challenge is the low penetration of life insurances in emerging economies, although life insurance has become an effective tool to encourage savings, and compete with other forms of saving. This paper is a comparative analysis on how the residence environment of respondents, the development region, education and income level influence the possession of a voluntary pension and life insurance in Romania. Our study uses the descriptive analysis as research methodology, and the practical documentation is based on data provided by a representative survey among Romania's active population (aged 18-65 years).*
**Keywords**: *Voluntary pension system, demand for life insurance, Romania, demographic factors, poverty line.*

## INTRODUCTION

In order to address the challenge of the aging population, the European Commission and the Social Protection Committee (SPC) cooperate with Member States to support, monitor and assess the impact of pension system reforms on the double objective to accumulate adequate pensions (prevent and combat poverty) and to ensure long-term sustainability of the pension systems. Over the last decade of pension system reforms, in response to population aging, more and more countries have expanded the role of existing private pension schemes and introduced new elements of private pension schemes in their pension systems. This occurred specifically to improve the sustainability of pensions by adding private components to the scope of the public scheme, offsetting the reductions of future replacement rates of public systems.

Another method of long-term saving that offers individuals financial security while contributing to the economic growth of a country is the life insurance. According to Beck and Web (2002), insurance products are important elements that encourage long-term savings, which can be redirected towards investment projects in both the private and public sectors; insurance companies are leading providers of financial services in developed countries [3]. Although life insurance has become an effective tool to encourage savings, and competes with other forms of savings (bank deposits, securities), its penetration degree records low levels in many of the emerging economies.

This study achieves a comparative analysis of the manner in which demographic and social factors influence the possession of private pensions and life insurance for a representative sample of Romania's active population. Our analysis will take into account the residence environment from where the respondents originate – urban /rural, region of development, level of education and income levels.

Our study begins with a review of the factors that influence the demand for life insurance, continues with a presentation of the Romanian pension system, the research methodology and the results of the comparative study and ends with the conclusions section.

## FACTORS INFLUENCING THE DEMAND FOR LIFE INSURANCE - LITERATURE REVIEW

Life insurance is defined as "a contract concluded between a natural person or legal entity and an insurer, the insurer is the one who undertakes to pay an amount of money upon the occurrence of disability of the policyholder, and the policyholder undertakes to pay a fixed amount to the insurer at the designated term" [21].

The study of life insurance and the factors influencing the demand for life insurance is an issue carefully researched by the specialists in the field, especially in the last century when life insurance has been deemed a force for the economic growth.

The first researchers who developed a theoretical framework to explain the demand for life insurance are Yaari (1965) and Hakansson (1969). According to Yaari, "life insurance is a function that depends on the wealth, income expected throughout the lifetime of an individual, interest rate, life insurance policies account and the discount rate"[20]. Hakansson (1969) believes that the "individuals' legacy and the uncertainty of circumstances are important determinants of the demand for life insurance" [9].

The conceptual framework developed by Yaari was extended by Lewis (1989) by including a new variable in the model, namely the number of dependents, who concluded that this variable was closely related to the consumption of life insurance. Lewis (1989) also considered notable the preferences of the household members to which the future insured belonged, whereas when an individual made a decision on the insurance, he/she took into account the dependent members. According to Lewis' model, the probability of purchasing a life insurance increases with the current value of the beneficiaries' consumption, aversion towards the risk and the probability of death of the policyholder.

Mossin (1968) proposed another model on the demand for life insurance that took into account the risk aversion of individuals with a certain level of assets, concluding that the demand for life insurance varied inversely proportional to the level of an individual heritage.

Enz (2000) studied the relationship between the demand for life insurance and economic development, concluding that while the income elasticity varied, there was a connection between the penetration degree of life insurance and income per capita, this indicating that the consumption of life insurance tended to rise with the economic growth in developing countries, but once it reaches the level of developed countries, the insurance consumption begins to decline.

There is a vast specialized literature that has used demographic and social variables in the analysis of the demand for life insurance determinants. We further present the results achieved in chronological order.

According to Hammond et al. (1967), Burner & Palmer (1984), Truett & Truett. (1990), Hwang & Greenford (2005), Li et al. (2007) factors such as income and education have a significant impact on the consumption of life insurance. Gao (2003) noted that in addition to the income level and education, urbanization and other changes in the social structure were factors that determined individuals to conclude life insurance policies in China.

International studies with similar conclusions belong to Anderson & Nevin (1975) who, using 20 independent variables and three dependent variables (cost of insurance premiums, number of policies of life insurance entered into and the type of insurance policies purchased), analyzed the behavior of newlyweds on the purchase of life insurance. The study results showed that six of the independent variables (education, current income, expected income, assets, insurance owned by the husband before marriage, insurance owned by the wife before marriage) explained the number of life policies holders. Three other independent variables (assets, portfolio held by the husband before marriage, influence of the insurance agent) resulted to be significant in explaining the type of life insurance purchased.

Nestersova (2008), using a data panel for 14 countries, for a period of 11 years (1996 to 2006), examined the determinants of demand for life insurance in Ukraine and some other countries of the former Soviet Union and Central and Eastern Europe. The study outcomes indicated that in countries with high life expectancy, income, education level and member of the European Union, the consumption of life insurance was higher.

Curak (2013) analyzed the demographic and social determinants of life insurance consumption in Croatia by using a questionnaire-based survey. The variables used were age, gender, education, occupation, marital status, number of household members. The research results indicate that age, occupation and education have a significant impact on the demand for life insurance in Croatia while gender, marital status and number of family members do not seem to influence the demand for life insurance.

Sarkodie & Yusif (2015), using a logistic regression model, study the determinants of life insurance demand in Ayeduase-Kumasi community, Ganda, from a consumer perspective. Their study indicates that income, high education level, number of dependents, a better perception of insurance companies - they all substantially increase the chances of concluding a life insurance policy.

## 3. ANALYSIS OF THE PENSION SYSTEM IN ROMANIA

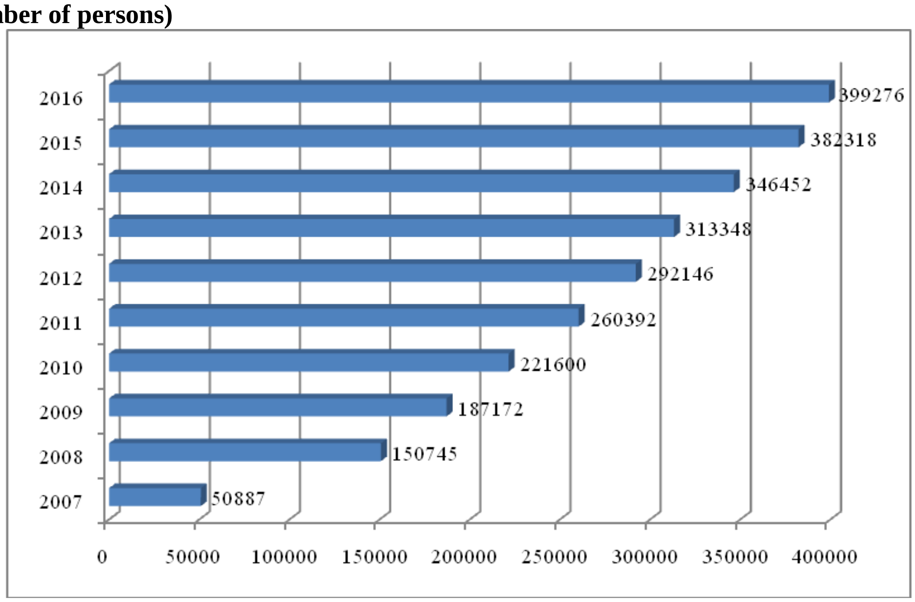
According to the Financial Supervision Authority, "the insurance market, the capital market and the private pension market, both individually and cumulatively, still have a relatively low comprehensiveness reported to the size of the national economy, being significantly less developed compared to the banking market" [2].

To improve the impasse of the public pension system, a multi-pillar pension scheme has been implemented in Romania, including state and private pensions.

1st pillar - the public pension system, is regulated by Law 263/2010, binding pay-as-you-go type, based on intergenerational solidarity and works according to the principle of contribution. At present, taxpayers pay for providing the income of today's pensioners, their pensions being paid in the future by the taxpayers of that moment. But the big problem is a continuing reduction in the number of taxpayers and an increased number of pensioners.
2nd pillar, mandatory private pensions, is regulated by Law 411/2004 on private pension funds, as amended and supplemented by Law 23/2007 and helps the State pension, the contribution of taxpayers being the same as before, the difference being that by this pension, 4% of insurance contributions will be forwarded to a private pension fund.
3rd pillar, voluntary private pensions - in addition to the other two types of pensions which are mandatory, any employee can contribute to a voluntary pension, thus securing additional income for retirement. One can contribute to such a pension fund up to 15% of the gross salary. The advantage of concluding a voluntary pension is the tax deductions for both the employee and employer.

Following the evolution of the number of people who have concluded a voluntary pension, in the period 2007 - June 2016, we notice that the trend is rising.

***Figure no.1.*** **Evolution of the number of participants in voluntary private funds between 2007 - June 2016 (number of persons)**




*Source: author's processing based on the data provided by the Association for private pensions in Romania*

While in 2007 the number of people who concluded a voluntary pension was 50,887, this was nearly 8 times higher in June 2016: 399,276 persons. Nevertheless, in Romania the voluntary pension sector records a low level of development, 8 years after the start of voluntary pensions scheme the evolution being below its potential.

## 4. RESEARCH METHODOLOGY

We shall use as research methodology the descriptive analysis, practical documentation based on data provided by a survey conducted within the research project "Study of life insurance in Romania in an international context: innovation, spatial and behavioral modelling; impact of institutional factors" in Romania's active population (aged 18-65 years), during the period April-May 2016. The sample size includes 1,700 surveyed persons, representative at national level by regions, counties, age groups, levels of education, income levels, gender, and background (urban/rural), by types of places (cities/towns/villages). The interviewing was based on the CATI method (Computer-Assisted Telephone Interview), the average duration of a questionnaire being about 10 minutes, not exceeding 15 minutes, according to ESOMAR standards. The response rate is 92.88%, of the 1,700 persons surveyed, 1,579 do not have non-responses. The demographic characteristics of the respondents are shown in the table below:

**Table no.1. Demographic characteristics of the respondents**

| Variable | Category | No. | % |
|---|---|---|---|
| Background | Urban | 959 | 60.73 |
| | Rural | 620 | 39.26 |
| Development region | North-East | 213 | 13.48 |
| | South-East | 171 | 10.82 |
| | South | 236 | 14.94 |
| | South-West | 172 | 10.89 |
| | West | 142 | 8.99 |
| | North-West | 210 | 13.29 |
| | Centre | 190 | 12.03 |
| | Bucharest-Ilfov | 245 | 15.51 |
| Age | 18-29 | 181 | 11.46 |
| | 30-39 | 314 | 19.88 |
| | 40-49 | 492 | 31.15 |
| | 49-59 | 358 | 22.67 |
| | 60 and above | 234 | 14.81 |
| Gender | Male | 807 | 51.10 |
| | Female | 772 | 48.89 |
| Level of education | Elementary to middle school, 8 grades at the most Vocational | 73 | 4.62 |
| | school, apprenticeship, 10 grades | 322 | 20.39 |
| | High school | 459 | 29.06 |
| | Specialized post-secondary or technical foremen profile | 162 | 10.25 |
| | Graduate, postgraduate studies | | |
| | | 563 | 35.65 |
| Level of income (over the last month) | 1-1,000 RON/month | 380 | 24.06 |
| | 1,001-2,000 RON/month | 682 | 43.19 |
| | 2,001-3,500 RON/month | 381 | 24.12 |
| | 3,501-5,000 RON/month | 61 | 3.86 |
| | 5,001-10,000 RON/month | 75 | 4.75 |

*Source: author's processing*

We can notice, for each of the stakeholders in our study, the category with the most respondents: 60.73% of respondents come from urban areas, by development regions, 15.51% of the respondents from Bucharest-Ilfov region, 35.65% have graduate or postgraduate studies, and by income categories 43.19% of respondents have an income ranging between RON 1,001-2,000.

## 5. LIFE INSURANCE VS. VOLUNTARY PENSIONS IN ROMANIA

We further plan to conduct an analysis of the private pensions and life insurance in the studied sample. Our analysis will take into account the residence area from where the respondents originate - urban/rural, development region of the respondents, level of education and income level.

In Romania, the life insurance sector and voluntary pensions sector record low development level compared to other European Union countries. The differences between the status of life insurance and voluntary pensions in Romania and the other countries lead us towards an analysis of factors that determine a low life insurance and voluntary pension consumption in Romania. These factors also include the demographic factors, which represent the subject matter of our analysis.

At the level of the sample studied, only 302 people have concluded life insurance policies (19.1%) while the number of people who have concluded private pensions is 333 (21.1%).

### 5.1. Area of residence: life insurance vs. voluntary pensions

At the beginning of 2015, of the total of 22,279 million persons, 12,572 million persons lived in urban areas, the share of urban population was 56.4% and 9,707 million people lived in rural areas, the share of rural population was 43.6%.

At the level of sample studied, of 1,579 respondents only 302 concluded life insurance policies. Among these, 64.9% (196 persons in absolute terms) originate from urban areas while 35.1% (106 persons in absolute terms) from rural areas.

As for the voluntary pensions, out of the 333 respondents who concluded a voluntary pension, 65.7% (219 persons in absolute terms) originate from urban areas while 34.23% (114 persons in absolute terms) from rural areas.

Our data indicate that there are significant differences between the urban and rural areas, both in terms of consumption of life insurance and voluntary pensions. These differences between urban and rural areas are due to the fact that in terms of financial education, Romania is divided into a rural Romania, including small towns, and an urban Romania where the penetration of savings products and financial literacy is much higher.

In order to reduce these gaps between urban and rural, we believe it is necessary to: increase population's awareness about life insurance and voluntary pensions, inform people about the rights and obligations of a life insurance and a voluntary pension respectively, and provide permanent assistance to those wishing to conclude or have already concluded a life insurance policy or a voluntary pension.

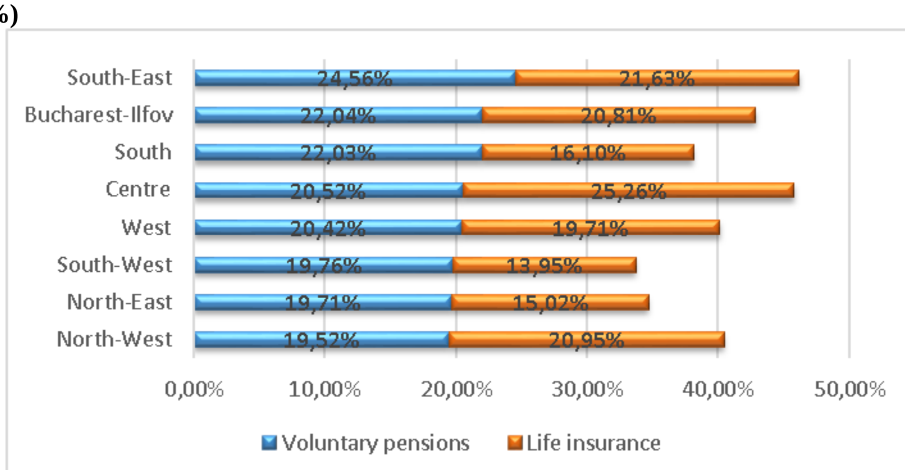
### 5.2. Development region: life insurance vs. voluntary pensions

An analysis on the development regions allows us to observe that there are regional disparities in the number of people who concluded life insurance policies and voluntary pensions.

In terms of voluntary pensions, the best represented development regions of Romania in our sample are: South East Region with 42 participants (24.56%), Bucharest-Ilfov Region with 54 participants (22.04%) and South Region with 52 participants (22.03). The North West region is ranked last, with 41 participants (19.52%).

An analysis of the life insurance consumption by development regions indicates the Central region with 48 participants (25.26%) as the best represented development region, followed by the South East Region with 37 participants (21.63%). The South-West Region is ranked last, with 24 participants (13.95%). The South-East Region, despite the fact that it is the region where the poverty rate is extremely high (33.3% in 2014 compared to 5.5% in the Bucharest-Ilfov Region) is leading the ranking when it comes to people who concluded a voluntary pension (3rd pillar) and ranks second when it comes to life insurance policies.

**Figure no.2. Life insurance vs. voluntary pensions - participants. Distribution by development regions (%)**



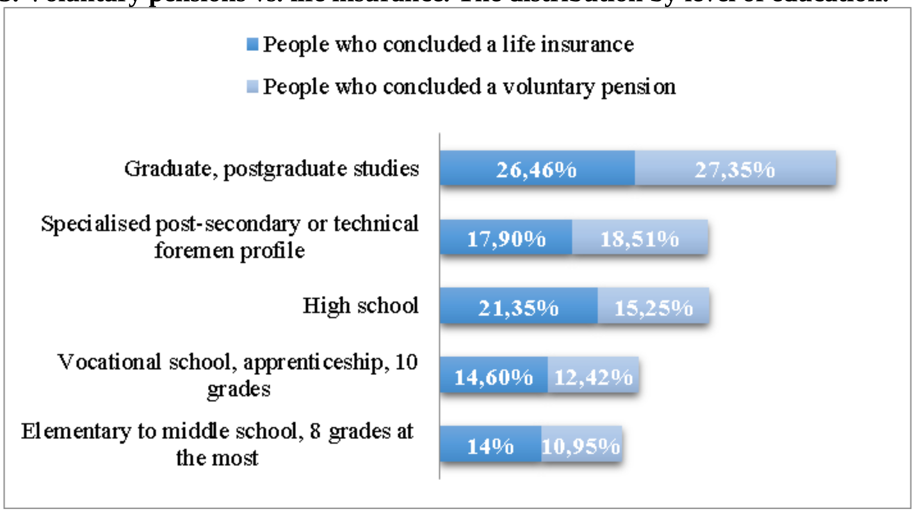

*Source: author's processing*

### 5.3. Level of education: life insurance vs. voluntary pensions

Education and the level of education play a crucial role in any person's life. Are people with a higher level of education willing to invest or save through voluntary pension and life insurance? This is the subject of our analysis on the sample studied. Based on the level of education, as resulting from Table.1 "Demographic characteristics of the respondents", the sample is structured as follows: 1.) elementary to middle school, 8 grades at the most - 73 persons; 2.) vocational school, apprenticeships, 10 grades - 322 persons; 3.) high school - 459 persons; 4.) specialized post-secondary or technical foremen profile - 162 persons; 5.) graduate, postgraduate studies - 563 persons;

Statistical data analysis leads us to the following conclusions: people with graduate or postgraduate studies are ranked first when it comes to voluntary pensions (26.46%) and when it comes to life insurance policies (27.35%). The explanation lies in the level of financial literacy among these people but also in the level of income - a higher level of education means better paid jobs, which allow the subscription of a private or voluntary pension or insurance policies.

**Figure no.3. Voluntary pensions vs. life insurance. The distribution by level of education.**



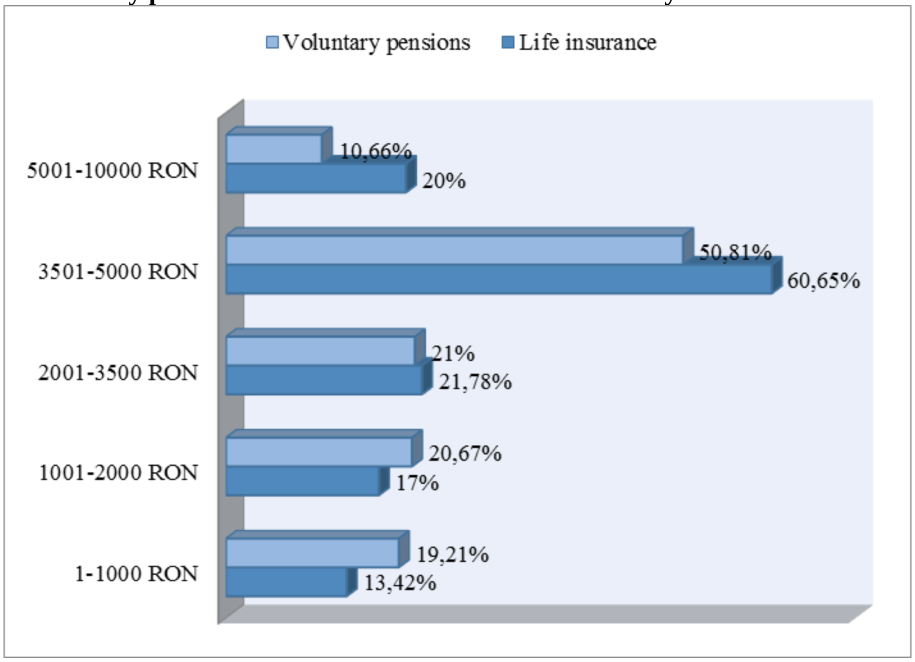

*Source: author's processing*

## 5.4. INCOME LEVEL: LIFE INSURANCE VS. VOLUNTARY PENSIONS

Molnar (2011) claims that Romania is one of the Member States of the European Union which has the highest inequalities in income. Income inequality can be observed in the studied sample: the revenues of our respondents start at 62 RON / last month, and go up to 10,000 RON/last months, an extremely large gap. By creating a group of the respondents by income level, we notice that of all the respondents, 24.06% have an income/last month ranging between 1-1,000 RON, 43.19% ranging between 1,001-2,000 RON, 24.12% ranging between 2,001-3,500 RON, 3.86% ranging between 3,501-5,000 RON and the remaining 4.75% ranging between 5,001-10,000 RON/last month.

Does the income level influence the demand for life insurance and the conclusion of a voluntary pension respectively? Statistical data on the sample studied are as follows:

**Figure no.4. Voluntary pensions vs. life insurance. The distribution by income level.**




*Source: author's processing*

The highest consumption of life insurance and voluntary pension can be observed among people with an income ranging between 3,501-5,000 RON/last month. People at the top of the income pyramid consider life insurance more attractive (20% of respondents have concluded a life insurance policy) as compared to private pensions (10.66% of respondents with an income ranging between 5,001-10,000 RON have concluded a private pension).

Considering that in 2015 the relative poverty line in Romania was 530 RON/family members and the national minimum wage of 1,050 RON in 2015 (increased to 1,250 RON as of 1 May 2016), we are surprised to find that there are people under the poverty line who concluded a voluntary pension or life insurance policy. At the level of our sample, 115 respondents are below the poverty line: 6% of them have concluded a voluntary pension and 6% have concluded a life insurance policy.

In this context, we believe that private pensions and life insurances may represent, along social protection, a valuable tool in the fight against poverty, this phenomenon which affects a considerable number of people worldwide, and the elderly being the population segment most exposed to this risk. Life insurance is vital in countries with a low level of social protection from governments because life insurance can reduce poverty through its savings component

## 6. CONCLUSIONS

The purpose of this study was to perform a comparative analysis of the demand for life insurance and voluntary pensions (3rd pillar) on a representative sample at national level, taking into account the residence background of the respondents (urban/rural), the development region from where they originate their level of education and income. Our analysis leads to the following conclusions: the demand for life insurance and voluntary pension is significantly higher in urban than in rural areas, there are regional disparities on the demand for life insurance and voluntary pensions, education and income are determinants of demand for life insurance and voluntary pensions.

Despite their development potential, the life insurance market and the voluntary pensions market are insufficiently developed in Romania. The stimulation of the development of the life insurance and voluntary pension system is extremely important, a functional private pension scheme and the existence of life insurance products tailored to consumers in Romania imply the reduction of the pressure put by socio-demographic and economic changes on the pension system and the social protection system.

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# EFFICIENCY OF TAX DEBT PUBLIC MANAGEMENT METHODS IN UKRAINE

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**Abstract**: *The article presents the results of tax debt public management methods research on the basis of experience of Ukraine State Fiscal Service work. It was found out that during the analyzed period the most efficient methods of tax debt management are such methods as sending a tax claim, deferred payment (delay of payment) of taxes and dues, and collecting money from debtors' accounts. According to the results of tax debt public management methods analysis, recommendations were given on increasing their application efficiency with the aim of stabilization of the budgetary and taxation system in the state.*
**Keywords**: *tax debt, tax debt public management, tax debt management methods, tax claim, tax collateral, deferred payment of tax debt, administrative arrest of property.*

## INTRODUCTION

Efficient functioning of the state, provision of its activities and financial steadiness, meeting common needs of the society by using financial resources accumulated in budgets to help growth of real economy sector, formation of a proper level of social protection of the population, increase in citizens' welfare level are urgent tasks which Ukraine has to fulfill in a principally new format at present.

The main sources of financing public expenditures in Ukraine are revenue parts of budgets of all levels and incomings to specialized funds, the major source of such resources in the fiscal system being taxes.

In the Ukrainian fiscal practice there are observed insufficient incomings of planned revenues to budgets of all levels due to a number of destabilizing phenomena in the economy, including those caused by inefficiency of the taxation system. Existing imbalances of the taxation system cause imperfection of tax administering and lead to appearance of tax debt which has been growing in recent years and shadow relations in the financial sphere.

Existence of substantial amount of payment debt to budgets of all levels in Ukraine threatens stability of public finances, causes reduction of financing socially important programmes and aggravation of the transformation crisis. As a result, the financial system loses a substantial part of financial resources.

Tax debt is a negative phenomenon; its administering is finance-, labour- and time-consuming. In addition, tax environment is prone to deformation, as tax payers whose economic activity results are on the same level, eventually get into different financial conditions.

Therefore timeliness of the research is conditioned by the taxation system being on the stage of permanent reformation and by the necessity of developing new more efficient methods of tax debt public management to minimize this debt. Tax debt must be transformed from irretrievable budget losses to resources which can be mobilized in the following periods; however such measures can be effective only if the government takes reasonable administrative actions.

Solution of the problems mentioned above makes it urgent to carry out complex evaluation of tax debt management methods on the basis of experience of Ukraine State Fiscal Service bodies work which could give an opportunity to make more profound theoretical bases and practical developments on increasing tax debt management efficiency.

Theoretical and methodological grounds of the research are scientific works on the problem of tax debt and methods of tax debt management. We should emphasize the works by A. Golovach, V. Onyshchenko, I. Babin, Yu. Tunyk, O. Onyshko, which discuss tax debt management methods, in particular, tax collateral, administrative arrest of property and selling of collateral property of debtors, mostly in the aspect of law as procedures of tax debt redemption, the issue of efficiency of applying these methods being raised partially.

Certain attention to taking measures by supervisory bodies on redemption of tax debt of tax payers is paid in the scientific works by O. Tymchenko, A. Yakovliev, O. Desiatniuk who consider the mentioned issues in terms of economics and law. At the same time, complex research of tax debt management methods effectiveness has not been carried out almost at all.

Paying tribute to achievements of scientists in this field and taking into account a considerable amount of tax debt in the country, we should note that rethinking from the point of view of the Public Administration science is required by theoretical approaches to studying the methods of tax debt management with the aim of increasing their efficiency, which conditions the necessity of further scientific research on this essential problem.

The purpose of this article is to carry out evaluation of tax debt management methods on the basis of experience of Ukraine State Fiscal Service bodies work, and according to its results, give proposals on increasing efficiency of applying these methods with the aim of stabilization of the budgetary and taxation system.

## ANALYSIS OF THE EFFICIENCY OF TAX DEBT PUBLIC MANAGEMENT METHODS IN UKRAINE

Tax debt management is an important component of the government tax policy, which is a set of activities carried by the government represented by the State Fiscal Service bodies to provide fulfillment of tax obligations by tax payers due to tax debt redemption.

According to the Tax Code of Ukraine, tax debt redemption is reduction of an absolute value of the sum of such debt, which is confirmed by an appropriate document (Tax code of Ukraine, 2010). Tax debt redemption is made by means of debt self-payment by tax payers, taking measures on tax debt collection by the State Fiscal Service bodies, adding extra sums paid on one type of tax to the account of tax redemption on another tax and debiting uncollectible tax debt.

Attention should be paid to the fact that forced collection of tax debt is a number of measures taken with the aim of tax debt redemption of tax payers without receiving their agreement to their carrying out and without preliminary agreement on the debt sum by imposing a collection obligation on all assets of such a payer (Desiatniuk and Marshalok, 2013).

In the process of carrying out tax debt management, amounts of incomings to the account of tax debt redemption due to management methods application are unequal, which may be evidence of both inefficient application of these methods and presence of certain objective and subjective factors influencing these processes.

Mechanism of tax debt management is implemented with the help of a complex of methods intended to encourage tax payers to make tax payments to budgets on time and in full according to provisions of laws. Scientist O. Desiatniuk considers that such methods are the following: accounting of tax debt and monitoring its causes; finding a place of residence of a debtor and sending a tax claim; having a conversation with a tax payment debtor; analyzing a debtor’s assets; deferred payment (delay of payment) of taxes and dues; tax collateral; suspension of operations on a debtor’s bank accounts; administrative arrest of a tax payer’s property; selling of property under tax collateral; tax debt redemption in case of reorganization or liquidation of tax payment debtor; bankruptcy procedure (Desiatniuk, 2013). According to the author, a list of tax debt management methods should be supplemented with the following efficient methods: collecting tax debt from current accounts of a debtor; withdrawal of cash from cash registers of a debtor; collection of a debtor’s receivables.

Thus, composition of tax debt management can be defined as a process of monitoring and estimation of tax debt, as well as applying methods aimed at its redemption and prevention of a possibility of its appearance. By the beginning of 2014, the amount of tax debt in Ukraine was 11.5 billion hryvnias. In 2014-2015, the tax debt was growing rapidly, and by the beginning of 2016, it was four times as large as the debt amount which was calculated at the beginning of 2014, and made up 45.5 billion hryvnias (State Fiscal Service of Ukraine, 2016), which points out inefficiency of tax debt management methods applied to debtors. So, currently it has become necessary to evaluate efficiency of separate methods of tax debt management on the basis of experience of Ukraine State Fiscal Service bodies work.

In case of non-payment of the agreed sum of tax obligation, first a payer is given an opportunity to pay off tax debt voluntarily. Such an approach is absolutely right, as it complies with the policy of harmonization of the public and payers’ interests. During this period, the State Fiscal Service bodies limit their measures to sending a tax claim whose purpose is to remind a payer about tax debt emergence and necessity of its voluntary paying off to avoid it forced collection (Tymchenko, 2011).

In order to evaluate efficiency of the discussed method of tax debt management, let us carry out analysis of tax debt paid off by tax payers voluntarily. Dynamics of paid off tax debt in the period of tax claim validity is shown in table 1.

**Table 1. Dynamics of paid off tax debt in the period of tax claim validity in 2010-2015 *, million hryvnias.**

| Year | Money coming in the account of tax debt redemption | Including voluntary payment of a tax payer | Of which – within 60 days since the date of tax debt emergence (tax claim validity period) | A part of incomings,% | | |
|---|---|---|---|---|---|---|
| | | | | col.3/ col.2 *100 | col.4/ col.3 *100 | col.4/ col.2 *100 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2010 | 5063.0 | 3336.0 | 1544.3 | 65.9 | 46.3 | 30.5 |
| 2011 | 8588.4 | 4808.1 | 2147.8 | 56.0 | 44.7 | 25.0 |
| 2012 | 11354.2 | 3260.9 | 1385.7 | 28.7 | 42.5 | 12.2 |
| 2013** | 2114.8 | 825.7 | 368.7 | 39.0 | 44.7 | 17.4 |
| 2014 | 8339.6 | 2446.6 | 1524.1 | 29.3 | 62.3 | 18.3 |
| 2015 | 20729.3 | 5892.2 | 3493.7 | 28.4 | 59.3 | 16.9 |

*Source: compiled by the author on the basis of the information from official site of State Fiscal Service of Ukraine*

Analyzed data prove the tendency of decrease in voluntary tax debt payment by tax payers in the total sum of money incomings in the account of tax debt redemption. Thus, if in 2010, the part of incomings from voluntary tax debt payment made up 65.9 per cent, then in 2014, it decreased to 29.3 per cent and continued its falling in 2015, making up 28.4 per cent. Along with that, the tax debt part paid within the period of tax claim validity in 2014-2015 grows in the total sum of voluntarily paid off tax debt. In 2010, the debt part paid within the period of tax claim validity made up 46.3 per cent; in 2014, it rose to 62.3 per cent and in 2015 it made up 59.3 per cent. Such a situation may be evidence of accidental emergence of tax debt and tax payer's attempts to pay it off as soon as possible, but it may also indicate certain problems in the activity of the State Fiscal Service bodies concerning their failure to take preventive measures in order not to allow tax debt emergence.

Taking into account the fact that the tax debt part voluntarily paid off by tax payers within the period of tax claim validity is quite substantial and varied between 30.5 and 16.9 per cent of total amount of money incomings in the account of tax debt redemption, such a method of tax debt management is quite efficient.

The following method of tax debt management is tax collateral. With the aim of ensuring fulfillment of the tax payer's obligations to pay off tax debt, the tax payer's property is taken as collateral. Tax collateral right emerges according to the Tax Code and does not require any written registration. Despite the fact that tax collateral right emerges on the first day after the deadline set for tax obligation payment; this means of influence on the payer is not efficient enough. Approximately 90 % of enterprises having tax debt do not own movable or real estate property and have tiny amounts of monetary funds, which reveals certain legislation imbalances allowing enterprises with insignificant assets to function. This fact is confirmed by the State Fiscal Service data according to which in 2010, levy of execution was imposed on debtors' property for the total sum of 7863.9 million hryvnias which makes up 47.0 per cent of tax debt amount; in 2011, it was 10844.1 million hryvnias or 78.6 per cent, in 2012, it was 8807.4 million hryvnias or 87.0 per cent, in 2013 – 7499.8 million hryvnias or 64.9 per cent, in 2014 – 9444.3 million hryvnias or 35.2 per cent, in 2015 – 16413.6 million hryvnias or 36 per cent (State Fiscal Service of Ukraine, 2016), which may also indicate insufficiency of taken measures on finding debtors' liquid property and taking it as collateral by the State Fiscal Service bodies.

There is a sense in the tax collateral right application only if a security means is property which can be sold, and if it is possible to cause some inconveniences for the debtor's activities by such selling; at the same time, the payer tries to give as collateral the property which they will not need in the future.

In addition to the voluntarily paid sum of tax debt, the current laws of Ukraine stipulate measures on tax debt collection by the State Fiscal Service bodies. Dynamics of tax debt redemption by means of tax debt collection measures is shown in table 2.

**Table 2. Dynamics of tax debt redemption by means of tax debt collection measures in 2010-2015 .*, million hryvnias.**

| Indices / Year | 2010 | 2011 | 2012 | 2013** | 2014 | 2015 |
|---|---|---|---|---|---|---|
| Value of property taken as tax collateral | 7863.9 | 10844.1 | 8807.4 | 7499.8 | 9444.3 | 16413.6 |
| Incomings due to selling collateral property | 234.4 | 20.5 | 41.8 | 17.8 | 45.7 | 34.6 |
| A part of incomings due to selling property in the total sum of money coming in the account of tax debt redemption, % | 4.6 | 0.2 | 0.4 | 0.8 | 0.5 | 0.2 |
| A part of incomings due to selling property in the value of property taken as collateral, % | 3.0 | 0.2 | 0.5 | 0.2 | 0.5 | 0.2 |
| Monetary funds collected from bank accounts of debtors | 0.7 | 173.0 | 363.7 | 114.9 | 191.6 | 184.4 |
| A part of incomings due to money collection from bank accounts in the total sum of money coming in the account of tax debt redemption, % | 0.01 | 2.0 | 3.2 | 5.4 | 2.3 | 0.9 |
| Monetary funds collected from cash registers of debtors | 72.0 | 6.6 | 14.0 | 2.3 | 4.5 | 4.6 |
| A part of incomings due to collecting cash in the total sum of money coming in the account of tax debt redemption, % | 1.4 | 0.1 | 0.1 | 0.1 | 0.1 | 0.02 |

*Source: compiled by the author on the basis of the information from official site of State Fiscal Service of Ukraine*

The given indices and their dynamics reveal inefficiency of such methods of tax debt management as property selling, collection of monetary funds from bank accounts, collection of cash. So, only in 2010, a part of incomings due to selling property made up 4.6 per cent of the total sum of money coming in the account of tax debt redemption, during the following periods this part of incomings does not reach even 1 per cent. Let us assume that potential of this method of tax debt management is not realized in full, because a part of property selling in the period from 2011 to 2015 varies between 0.2 and 0.5 per cent of the value of the property taken as tax collateral.

Such a situation is explained by non-liquidity of property taken to be sold, and correspondingly, by absence of any demand in it. Besides, debtor's property selling is carried out by the State Fiscal Service bodies only under the appropriate decision of the court, which takes a certain period of time to be made.

Incomings due to collection of cash from debtors' cash registers are tiny: 1.4 per cent in 2010, from 2011 to 2014 – 0.1 per cent and in 2015 – 0.02 per cent of the total sum of money coming in the account of tax debt redemption. A more prospective one is such a method of tax debt management as collection of monetary funds from debtors' bank accounts. During the period from 2011to 2014, a part of incomings due to collection of monetary funds from debtors' bank accounts varied between 2.0 and 5.4 per cent of the total sum of money coming in the account of tax debt redemption.

Efficiency of the mentioned methods of management is influenced by both an objective factor – a necessity of a court decision on collection of a debtor's funds, and a subjective one – conscientious execution of their functional duties by heads of the State Fiscal Service tax bodies concerning provision of systematic communication with a debtor with the aim of collecting cash and sending documentary collection orders to banks to withdraw money from a debtor's accounts.

It should be noted that in practice, first a court makes a decision on collecting funds (cash from cash registers and non-cash from accounts), only after this a decision is made on giving a permission to pay off the sum of tax debt of a tax payer at the expense of their property which is taken as collateral. Let us consider that with the aim of increasing efficiency of the mentioned methods of tax debt management the most effective and reasonable method is when a court makes a single decision on tax debt redemption at the expense of funds and collateral property of a debtor. Moreover, on this condition there will be a substantial decrease in expenditures of the State Fiscal Service bodies on preparation, sending, support and execution of a court decision on tax debt redemption.

The next method of tax debt management is deferred payment (delay of payment) of taxes and dues. In case if a tax payer does not have an opportunity to pay off money obligations on the set terms or if he/she already owes money to the budget, one of the ways out of such a situation is to postpone the terms of taxes and dues payment till later dates with their redemption by equal parts (a deferred payment mode) or one-time redemption in full (a payment delay mode). The peculiarity of deferred payment is the fact that it is allowed on condition of the threat of emergence or accumulation of tax debt of a tax payer, and delay of payment can be allowed only in case of force majeure circumstances (Tarasenko, 2013).

Application of deferred payment or delay of monetary obligation payment enables a tax payer to avoid penalty, fines and emergence of tax debt, and application of deferred payment or delay of tax debt payment enables a tax payer to avoid measures on tax debt collection, in particular, cash collection, property selling, money collection from a tax payer's accounts in the banks rendering service to them.

At the same time, application of deferred tax payment or delay of tax payment causes certain problems with filling the revenue part of the budget to the planned amounts in corresponding periods of the fiscal year. This fact is confirmed by the data of the State Fiscal Service according to which in 2011 the sum of allowed deferred payment (delay of payment) of tax obligation and tax debt made up 19492.7 million hryvnias, in 2012 – 6977.7 million hryvnias, in 2013 – 7968.5 million hryvnias, in 2014 – 7242.9 million hryvnias, in 2015 – 28856.0 million hryvnias (State Fiscal Service of Ukraine, 2016), that may also reveal some drawbacks in the work of the State Fiscal Service bodies concerning carrying out the analysis of financial and economic activities of tax payers who turn to them for a deferred payment permission.

Dynamics of incoming of money paid in the account of deferred tax debt sum redemption is shown in table 3.

**Table 3. Dynamics of incoming of money paid in the account of deferred tax debt sum redemption in 2011-2015 *, million hryvnias.**

| Indices / Year | 2011 | 2012 | 2013** | 2014 | 2015 |
|---|---|---|---|---|---|
| Paid in the account of deferred tax debt sum redemption | 376.2 | 598.2 | 195.5 | 1104.8 | 7374.4 |
| A part of incomings due to payment in the account of deferred tax debt sum redemption in the total sum of money coming in the account of tax debt redemption, % | 4.4 | 5.3 | 9.2 | 13.2 | 35.6 |

*Source: compiled by the author on the basis of the information from official site of State Fiscal Service of Ukraine*

The analyzed data present evidence of a tendency of permanent growth of a part of incomings due to payment in the account of deferred tax debt sum redemption in the total sum of money coming in the account of tax debt redemption from 4.4 per cent in 2011 up to 35.6 per cent in 2015, and show that this method of tax debt management has a certain potential.

An administrative arrest of a tax payer's property is executed by the State Fiscal Service bodies under the decision of the head of the corresponding body on making such an arrest. The mentioned decision is subject to a compulsory check of its grounding, this check is carried out by the court under the submission of the State Fiscal Service bodies, which is considered in the order of fast-track procedure (Ugrin, 2015). In addition, an administrative arrest of property is allowed in case of a tax payer's refusal from the check of a debtor's property storage condition and preventing from drawing up a property inventory certificate. In recent years, there has been a substantial decrease in incomings due to application of the method of the administrative arrest of assets. Thus, in 2010, such incomings in the account of tax debt redemption made up 354.6 million hryvnias or 7 per cent of the total sum of money coming in the account of tax debt redemption, in 2011 – 68.6 million hryvnias, in 2012 – 66.5 million hryvnias, in 2013 – 11.8 million hryvnias.

Negative tendencies were observed during 2014, when due to such measures only 0.1 million hryvnias came, and in 2015, there were no incomings of this type at all, which reveals inefficiency of this method of tax debt management.

## CONCLUSIONS AND PROPOSALS

To sum up the discussed issues, on the basis of the conducted analysis of tax debt management methods application efficiency in Ukraine we can make certain conclusions:

- during the analyzed period the most efficient methods of tax debt management are the following: sending a tax claim, deferred payment (delay of payment) of taxes and dues; collection of money from debtors' accounts;
- efficiency of such methods of tax debt management as cash collection from debtors' cash registers, tax collateral and selling of property taken as collateral is rather low, which requires certain efforts of the State Fiscal Service bodies to increase effectiveness of these methods;
- efficiency of such a method of tax debt management as an administrative arrest of a tax payer's property was falling during the analyzed period, and in 2015, there were no incomings due to this method application at all.

In order to increase the efficiency level of particular methods of tax debt management, it is considered to be reasonable to recommend the following measures implemented through making changes in corresponding laws and legal acts regulating issues of tax debt redemption:

- shortening a tax claim validity term to 30 calendar days, that will significantly reduce current procedural terms of tax debt collection and provide improvement of payment discipline of tax payers;
- taking as collateral the property which makes up not less than two sums of tax debt, that will provide further complete redemption of tax debt at the expense of selling collateral property, taking into account additional expenditures on its estimation and selling at target auctions;
- providing tax debt collection work optimization concerning making changes in laws regulating the procedure of tax debt collection by fiscal bodies (collection of cash and non-cash funds, selling of collateral property of a debtor) under a single decision of a court instead of the current legally set practice of making 2 separate court decisions on debt collection in a certain order;
- adopting legal acts about methodology of conducting analysis of a tax payer's financial circumstances when considering an issue of deferred payment (delay of payment) of taxes and dues;
- providing research of financial conditions for allowing each tax payer to make deferred payment, in particular, a preliminary unscheduled check when applying the tax deferred payment mode.

** In 2013, the Department of Tax Debt Redemption was liquidated in the structure of the Ministry of Incomes of Ukraine, therefore the given indices are valid on 01.05.2013.

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