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ICBE 2013

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Preface

The International Conference on Business Excellence has been established as an important international gathering of academics, business professionals and PhD students. The purpose of the conference is to create a networking opportunity for both practitioners and researchers, young and senior professionals.

The 8th edition held in Brașov, Romania between 17th-19th October 2013 brought under discussion issues from the Romanian and international business environment during and after economic crisis. Actual subjects such as innovation, education, development of entrepreneurship, knowledge management and business strategies have been thoroughly debated within the parallel sessions of the conference.

Academics, as well as practitioners, found a forum for confronting theory with practice and drawing valuable conclusions on the adequacy and realism of their models.

Established researchers and PhD students have participated in the animated formal and informal gatherings, which turned the conference into a scientific and social success.

This special issue of the Management & Marketing. Challenges for the Knowledge Society journal includes papers from 96 authors who present the newest research in their fields of academic interests.

Organizing ICBE 2013 was a team effort. We first thank the authors for their practice-anchored papers. We are grateful to the program committee and session chairs. We thank our host and our partners Brașov County Council and Rege Automotive Brașov SRL for their organizational and logistical support.

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Challenges for the Knowledge Society

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Abstract. The human induced process of global warming, a direct result of greenhouse gases emissions (GHGs) comprised of: carbon dioxide, methane, nitrous oxide and fluorocarbons. To mitigate the effects of global warming, most countries, under pressure from international communities, are attempting to curb their gas emissions and enhance carbon sinks. Nevertheless, further efforts are required to reduce the effects of this human-induced global warming. It is as important to reduce our vulnerability to climate change by increasing society’s capacity for adaptation. As the leading body for managing these efforts, the UN has created five regional commissions which have an active role in the support for actions against climate change at a regional level. In Europe, this commission works closely with the governing body of the union, the European Commission. The target for the EU is to become the world leader in a shift towards a low-carbon economy, according to the President of the European Commission, Jose Manuel Barroso.

Keywords: EU ETS, GHG, climate change, targets, allowances.
1. Introduction

Because the 27 countries of the EU make up almost 15 percent of the global carbon monoxide emissions, its actions matter for the entire world. Europe’s strong voice in international negotiations is conditioned by a demonstration of leadership through practical example.

The targets set for carbon emissions reduction are ambitious. For instance, in 2006 the EU governing body set out to achieve a 20% cut in greenhouse gas emissions for 2020 compared to the levels of 1990, with a potential increase to 30% in the event an international agreement is reached. This strategy is firmly based on an increase of energy efficiency throughout Europe (CEC 2007).

The long term plan for the reduction of greenhouse gases is to reach a 50% cut by 2050 compared to the 1990 levels. This drastic cut is necessary, because global warming is causing changes with severe human, economic and environmental impact. The change needs to happen, to prevent reaching extreme global warming levels, which could cause disastrous events for the entire planet.

2. Study

2.1. The EU Emissions Trading System (EU ETS)

As far as the tools employed for this task, one of the most cost effective ones is the emission trading systems. The European Union launched the EU Emissions Trading System (EU ETS) in 2005 which became the starting block for the emission cutting strategy for carbon dioxide emissions as well as for other greenhouse gasses. This is the least costly approach, compared to traditional ‘command and control’ regulations, because it uses market force to find the cheapest way to reduce emissions.

The first major carbon market, the EU ETS remains the biggest today. The European system, the engine of the whole operation, which accounts for more than 75% of the trading volume of the international carbon market was the first international emission trading system which addressed gas emissions from companies (EU ETS 2005).

By giving carbon a price and thus setting a financial value to every tonne of emissions avoided, the EU ETS has managed to place climate change firmly in the sights of companies all over Europe. Moreover, a high enough carbon price will help investments in clean, low carbon emitting technologies. As companies are able to buy credits for projects employing emission savings around the world, the ETS had grown into the major force in the international effort for clean energy investments and low emission solutions, even in developing countries.

The main method within this approach is to put a limit on overall emissions from high-emitting industry sectors which are reduced each year. Within this limit, all companies can buy and sell the emissions allowances they need. The approach, known as ‘cap-and-trade’ provides companies with the much needed flexibility they need to reduce their emissions in the most cost-effective way.
Within the EU ETS, more than 11,000 power stations and manufacturing plants from the 27 EU states, Iceland, Liechtenstein and Norway. Most flights between these countries are also covered in the plan, making the total EU emissions covered and limited by the EU ETS to around 45%.

The EU ETS, as the main market for credits generated through carbon saving projects, accounting for more than three quarters of global trading, has also become a great source for investments in environmentally sustainable development in developing countries.

Moreover, it inspires development of national or regional emissions trading systems is several parts of the world. The aim is to link Europe’s EU ETS with other compatible schemes in other countries and to this end a principal deal has been reached to link with the Australian system.

2.2. How the EU ETS is established

In 2003, The European Parliament and Council have adopted a directive on emissions trading which was substantially revised in 2009 to further strengthen the EU ETS from 2013. This legislation addressed the implementation issues regarding the directive, such as carbon leakage, auctioning, or international credits, was adopted by the EC after careful consideration by both the EU Climate Change Committee and European Parliament.

2.3. EU ETS: Development in phases

2005-2007: 1st trading period – was used as a ‘learning by doing’ phase. The EU ETS was successful in establishing itself as the world’s biggest carbon market. Nevertheless, the number of allowances based on the estimated needs proved to be excessive and therefore the price of these first period allowances fell to 0 in 2007.

2008-2012: 2nd trading period. The market was joined by Iceland, Norway and Liechtenstein on the 1st of January 2008. The allowance number was reduced by 6.5% but emissions were reduced by the economic downturn and demand soon followed. A surplus of unused allowances and credits appeared which decreased the carbon price again. In this period the aviation industry joined the market.

2013-2020: 3rd trading period. The first major reform takes place which targets the introduction of an EU wide cap on emissions, which is reduced by 1.74% each year, as well as a progressive shift towards the auctioning of allowances in stead of cost free allocation. At this point Croatia joins the initiative.

2021-2050: 4th trading period. A period for future improvements in carbon trading and emission reduction through global cooperation.

2.4. What the EU ETS covers

- Greenhouse gases and sectors covered
- Carbon dioxide (CO₂) from:
Power and heat generation
- Energy-intensive industry sectors including oil refineries, steel works and production of iron, aluminium, metals, cement, lime, glass, ceramics, pulp, paper, cardboard, acids and bulk organic chemicals
- Commercial aviation
  - Nitrous oxide (N₂O) from production of nitric, adipic, glyoxal and glyoxylic acids
  - Perfluorocarbons (PFCs) from aluminium production (UNFCC 2013)

2.5. How allowances are allocated

In the early stages of the scheme the majority of emission allowances were given away for free by governments, from 2013 the main method for allowance allocation has been auctioning. Therefore businesses have to buy an increasing proportion of their allowance in an action. The EU desired to completely phase out free allocation by 2027. Moreover, auctioning is one of the most transparent methods of allocating allowances and also abides by the principle that the polluter pays.

Power generators also need to buy their allowances, and past experience has proven that they are able to pass on this cost to their customers, even when they received them for free. Nevertheless, several member states were granted a provision which allowed them to continue to distribute a limited number of free allowances until 2019 as long as they invest the same collective amount into modernising these facilities. The countries included in this measure are: Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Lithuania, Poland and Romania (EC Green 2013).

Taking into account the impact of power generators in the EU ETS, even with partial free allocations in the eight member states mentioned above, more than 40% of the allowances will be auctioned off in 2013 and it is expected that this figure will increase in the following years. 88% of the allowances to be auctioned are allocated to states on the basis of their share of verified emissions from EU ETS installations in 2005. 10% are allocated to the least wealthy EU member states as an additional source of revenue to help them invest in reducing the carbon intensity of their economies and adapting to climate change. The remaining 2% is given as a ‘Kyoto bonus’ to nine EU member states (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia) which by 2005 had reduced their greenhouse gas emissions by at least 20% of levels in their Kyoto Protocol base year or period.

National governments appoint companies to hold the auctions, but they are open to buyers from any country part of the EU ETS. Most governments use a common platform for these auctions with Germany, Poland and the UK being the exception by using their own platforms.
### 2.6. Key equity aspects of a menu of instruments to reduce carbon dioxide emissions

#### Instruments to reduce carbon dioxide emissions

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<th>Examples</th>
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<th>Other considerations</th>
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| Cap-and-trade permits   | EU trading scheme                       | If permits are given away, this favours incumbent firms and does not raise revenue | -Potentially high monitoring and enforcement costs  
                           |                          |                                                        | -Carbon permit prices can be volatile.                                    |
| Emissions targets       | Voluntary targets of European Union, Indonesia and the Russian Federation to reduce emissions | Depends on pattern of consumption and production        | -If electricity is generated with fossil fuels, targets will cause prices to rise  
                           |                          |                                                        | -Poor people spend a larger proportion of their income on energy         |
| Taxes or charges        | -Fuel and coal taxes                     | Depends on pattern of consumption and production        | Fiscal revenue potentially as high as 1-3 percent of GDP in Organisation for Economic Co-operation and Development (OECD) countries by 2020 (at $50 per tonne of carbon dioxide equivalent greenhouse gas emissions) |
|                         | -Motor vehicle taxes                     |                                                        |                                                                                       |
| Subsidies for renewables| -Hybrid cars                             | Depends on purchase patterns, but unlikely to be progressive; could be targeted (means tested) | Potentially expensive; more than $7000 per vehicle in Belgium, Canada, China, the Netherlands, the United Kingdom and the United States |
|                         | -Subsidies for electric vehicles         |                                                        |                                                                                       |
| Subsidy cuts            | -Fossil fuels                            | Eliminating subsidies would create substantial fiscal and environmental benefits | -Fossil fuel subsidies cost around $558 billion in 2008 and $312 billion in 2009  
                           | -Electricity for irrigation              |                                                        | -Complete phase-out by 2020 could reduce emissions 20 percent in non-European countries, the Russian Federation and the Arab States |
| Performance standards   | -Limits on car emissions                 | May raise costs and limit access of the poor           | Does not allow firms to reduce emissions at the lowest possible cost |
|                         | -Energy efficiency standards             |                                                        |                                                                                       |
| Technology standards    | Building and zoning codes                | Care needed to avoid cost increases that are prohibitive for the poor | Importance of appropriate technology |
| Better information      | -Public awareness campaign               | Ensure outreach and accessibility to disadvantaged groups | Group identity of users matters |
|                         | -Emission and energy use disclosure requirements |                                                        |                                                                                       |

3. Conclusions

Creating concrete policies from targets proved to be more difficult than expected. Several member states contested the market liberalisation, which the EU proposed as the way in which to achieve greater efficiency. There is no EU-wide strategy for translating the 20% desired reduction into the national carbon budgets either through taxation, strengthened efficiency standards of a more stringent cap-and-trade system. The EU ETS (European Union Emission Trading Scheme) is, by far, the world largest cap-and-trade programme but it can not achieve the desired 20-30% cut in emissions.

The prospects for the European Union meeting its Kyoto Protocol reduction commitments remain uncertain. As far as pre-2004 member states are concerned, analysts estimate that the current policies could achieve a 0.6% reduction from the 1990 baseline. Member states are at just one tenth of the way to achieve their target of 8% and there is a clear need to further enforce existent energy efficiency regulations which would significantly help in closing the gap.

The EU targets for cutting greenhouse gas emissions – compared to 1990 levels – are: (EC Green 2013)

2020: -20% (or -30% if other major economies commit to undertake their fair share of a global reduction effort)
2050: -80-95%

There is a clear framework in the EU to steer its energy and climate policies up to 2020. This framework integrates different policy objectives such as reducing greenhouse gas (GHG) emissions, securing energy supply and supporting growth, competitiveness and jobs through a high technology, cost effective and resource efficient approach.

The objectives are delivered by three headline targets for GHG emission reductions, renewable energy and energy savings. Additional targets for energy used by the transport sector are also incorporated in the strategy. Also, the EU has put in place a regulatory framework to drive the creation of an open, integrated and competitive single market for energy which promoting the security of energy supplies.

The framework for 2030 must be sufficiently ambitious to ensure that the EU is on track to meet longer term climate objectives. But it must also reflect a number of important changes that have taken place since the original framework was agreed in 2008/9:

- the consequences of the on-going economic crisis;
- the budgetary problems of Member States and businesses who have difficulty mobilising funds for long term investments;
- developments on EU and global energy markets, including in relation to renewables, unconventional gas and oil, and nuclear;
- concerns of households about the affordability of energy and of businesses with respect to competitiveness;
- and the varying levels of commitment and ambition of international partners in reducing GHG emissions.
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Niculaie ANTONOAIE is a professor and former Head of the Management Department (1996-2000; 2004-2011). He has 33 years of experience in training and in the fields of management, business, entrepreneurship, and forest engineering. In 2000 he worked for the Economic Commission for Europe, Trade Division at United Nations in Geneva, Switzerland. He is an open and distance learning expert (Herriot-Watt University, Edinburgh, UK). His scientific work comprises 12 handbooks, 87 articles and papers and 25 research projects.
Abstract. Nowadays, business tourism is one of the leading and most dynamically developing activities of world economy and tourism operators are forced to find out new ideas for increasing economic efficiency, even in crisis conditions. In this context, new businesses in tourism industry have to approach extremely carefully this market's entry because they have to cope with both companies already on the market that have occupied any niches available, and problems arising from the economic crisis. However, a relatively fast and cost-effective solution may be represented by the hostels; in the case of Romania and in Suceava County, in particular, hostels are not so well-known by the public, as concept, but they have a few advantages that might bring success in business. This paper aims to present the hostel as a business opportunity for Suceava County and to analyze young people's perception of this type of tourist accommodation unit.

Keywords: hostels, tourism activities, accommodation services, Suceava County, business opportunities.

IMPORTANCE OF HOSTELS IN TOURISM INDUSTRY AND THEIR PERCEPTION AMONG YOUNG PEOPLE

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1. Introduction

Although the tourist market was inevitably affected by the financial and economic crisis, Suceava County has some unbeatable advantages. The beauty of the landscapes, traditional cuisine and traditions, in general, the proverbial hospitality of the inhabitants, the existence of a large number of tourist attractions on a limited space, without forgetting the existence of tourist accommodation structures explains the large number of tourists who annually visit Suceava County. The tourist potential of the area is therefore an obvious one, being also revealed in the statistics indicators that have experienced growth. The only year that recorded decreases had been 2010 but, in recent years there is a clear recovery trend (Table 1).

<table>
<thead>
<tr>
<th>Suceava County</th>
<th>Accommodation capacity</th>
<th>Arrivals (thousands)</th>
<th>Overnight Stays (thousands)</th>
<th>Net use of the capacity indices (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>5269</td>
<td>1335,4</td>
<td>153,5</td>
<td>480,3</td>
</tr>
<tr>
<td>2001</td>
<td>5034</td>
<td>1421,1</td>
<td>151,4</td>
<td>461,1</td>
</tr>
<tr>
<td>2002</td>
<td>5002</td>
<td>1390,5</td>
<td>162,4</td>
<td>406,7</td>
</tr>
<tr>
<td>2003</td>
<td>5577</td>
<td>1640,8</td>
<td>162,5</td>
<td>423,2</td>
</tr>
<tr>
<td>2004</td>
<td>5755</td>
<td>1760,8</td>
<td>187,4</td>
<td>432,4</td>
</tr>
<tr>
<td>2005</td>
<td>6526</td>
<td>1932,6</td>
<td>192,1</td>
<td>435,2</td>
</tr>
<tr>
<td>2006</td>
<td>7012</td>
<td>2056,7</td>
<td>211,0</td>
<td>500,3</td>
</tr>
<tr>
<td>2007</td>
<td>6831</td>
<td>2067,4</td>
<td>226,3</td>
<td>535,1</td>
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<tr>
<td>2008</td>
<td>7029</td>
<td>2101,8</td>
<td>229,1</td>
<td>530,1</td>
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<tr>
<td>2009</td>
<td>7554</td>
<td>2176,4</td>
<td>208,7</td>
<td>479,4</td>
</tr>
<tr>
<td>2010</td>
<td>8033</td>
<td>2263,6</td>
<td>194,4</td>
<td>460,6</td>
</tr>
<tr>
<td>2011</td>
<td>8835</td>
<td>2439,6</td>
<td>229,5</td>
<td>550,2</td>
</tr>
</tbody>
</table>

Source: www.suceava.insse.ro, date of access: June 25th 2013.

In 2012, in Suceava County, there were 296 structures for tourist accommodation with a capacity of 9447 accommodation places and the greatest share of the existing tourist accommodation capacity (68,9 %) is held by urban and rural hostels (www.suceava.insse.ro).

With respect to current trends in tourism one can say that domestic tourism, proximity, niche tourism (business, professional, etc.), but also the exotic or the cruises shall be entered in the Romanian travellers’ tendencies in 2013 (www.jurnalul.ro). We can talk about a powerful tendency for concentrating on domestic travel and toward appropriate and accessible as pricing destinations and The National Association of Rural, Ecological and Cultural Tourism ANTREC estimates an increase of about 15% of Romanian tourists opting in 2013 for rural pensions in the context of a general growth of internal tourism. The most requested areas of rural tourism in Romania currently are the rural area of Brasov, Bucovina, Maramures and Marginimea Sibiului (www.turism.bzi.ro).
Importance of hostels in tourism industry and their perception among young people

2. Characteristics of Hostels

Globalization and the new political and economic situation have brought major changes in terms of tourist profile, products and services of their choices. Now customers seek for goods and services at a low price (Reisinger, 2009). In response to these needs, hostels have emerged.

Ministry of tourism (currently inexistent since tourism is subordinated to the Ministry of economy) defines it as “the hospitality industry with a minimum capacity of 3 rooms, suites or apartments arranged on one level or several levels in arranged locations, in buildings with other than the original destination of tourist accommodation”. In common language, a hostel is a hotel for young people, accommodation for tourists on a low budget, having bedrooms and common bathrooms. This type of tourism offers, unlike hotels, accommodation in dormitory rooms, shared bathrooms, the possibility of cooking and of keeping food in common, fully equipped kitchens. Tourists have access to washing machines and driers, internet, self-catering. In Romania, young people usually opt for hostels instead of hotels in the destinations they go to because they prefer to travel cheaper and thus longer. Staying in hostels is one of the best ways to cope with this situation, but unfortunately most people believe in the stereotypes when it comes to hostelling, preferring to avoid them referring to accommodation. Overnight stays in hostels are in private rooms, with 2 to even 10 beds, and one common bathroom. If it comes to a single traveller, staying in rooms with other travellers might be more appealing, but most hostels have the option of single or double rooms like hotels and some even have their own bathroom. Hostels are also smaller units than many hotels and several have their own bar/restaurant or themed nights which can be an indication of the hostel’s level.

3. Case Study: The perception of the Hostels among Young People

Given the fact that young people are the main target group of hostels we aimed at determining their perception and their particular characteristics of hostels, agreeing to applying a questionnaire to a group of randomly chosen students of the Faculty of Economic Sciences and Public Administration. At the end of research there were a total of 204 completed questionnaires, survey having an error of ± 7% for a probability of 95.45%. The questionnaire had a total of 16 questions and answers with free answers, and a series of filter questions for a more efficient determination of the perception of hostels. The three variables were used to determine the structure of the sample (area of residence, age and sex).

The objectives considered in the survey were: to determine the level of awareness of the concept of hostel and its specific characteristics, to determine the availability of respondents regarding the idea of sharing some tourist accommodation facilities with other customers, to determine the sources of information used when choosing the location for hotel services, to determine the level of knowledge of the main tourist accommodation establishments in the County of Suceava and in general, to determine the most important attributes required for tourist accommodation (including the importance of quality/price ratio). Moreover, the present research started from the following hypotheses: the concept of hostel and its characteristics are known to the target audience (young people), the idea of sharing accommodation services with other clients is one of biggest shortcomings of the hostels, and hostels in Suceava are insufficiently promoted.
Following the centralization of the questionnaires, the results are as follows:

- **Structure of the sample**

  ![Figure 1](image)

  *Figure 1. Sample structure by area of residence, age and sex*

  From *Figure 1* it can be observed that about 59% of responding students come from urban environment, being aged between 20 and 24 years and being almost equally distributed by gender (53% women and 47% men).

- **Question 1:** When you make a trip that also implies accommodation, which is your source of information about the existing accommodation facilities in that location? (a maximum of 3 possible answers)

  At this question the interviewed students were given a list of the main sources of information that they might use when choosing the unit of accommodation, being able to choose a maximum of three options. The results showed that in most cases the first source of information is the Internet (which was selected by 181 respondents), followed by feedback from family and friends (114 respondents) and specialized publications (59 respondents), the latter category also including promotional brochures.

  The results showed an increase of the impact of the actual Internet commerce and, moreover, for the hotel and tourism sector, in general, of the importance of other customer reviews which should be available on each profile websites. Also, a fact not surprising at all for the service sector is represented by the opinion of reliable persons (family and friends) and their credibility as previous beneficiaries of the services in question. Only 24 of the respondents would choose newspapers and magazines or television and radio as sources of information, a result that indicates the decline of traditional media to a certain extent.

- **Question 2:** Which of the accommodation units listed below have you heard of? (multiple choice)

- **Question 3:** Which type of accommodation do you prefer when your travels involve accommodation? (from those listed above or other — one choice)

  Question 2 is the first filter question of the questionnaire because the questions 7-16 were exclusively intended for those who have ticked that accommodation hostel are known to them. The results showed that the less known tourist accommodations are bungalows, holiday villages and hostels (35% of respondents) and that the most popular are represented by hotels, cottages and guest houses, which are the most common categories of tourist accommodation in Suceava County (*Figure 2*). Moreover, these are the preferred accommodation units by respondents when they are traveling to a destination that implies a tourist accommodation unit. The first three positions are guest houses (30%), followed by hotels (28%) and cottages (25%), as shown in *Figure 3*. Hostels are not preferred by any of the respondents.
Importance of hostels in tourism industry and their perception among young people

The following three questions of the questionnaire were aimed at determining the mandatory attributes that accommodation units should have and at reviewing consumer preferences of respondents, their attitude towards the quality/price ratio and their willingness concerning the idea of sharing certain touristic services.

- **Question 4:** Which of the following attributes you consider the most important for an accommodation that meets your requirements? (a maximum of 3 choices)

At this question, respondents had to choose from a list of attributes at least three features that they consider essential in choosing a location for accommodation. From Figure 4 it can be noticed that a satisfactory quality/price ratio is the most important attribute (138 respondents), followed by the location (109 respondents) and the room layout (103 respondents). Contrary to expectations, for the 42 of the students participating in the survey, an important role is played by the restaurant services that accompany the accommodation unit.
Figure 4. Most important characteristics of an accommodation unit

- **Question 5: Select the statement that best matches the quality-price ratio.**
  Although students do not represent a category of customers with high income, the answers of this question show that for the about 15% of the participants price does not matter as long as the quality is optimal. For 85% of respondents, a balanced price-quality ratio is the best solution and no student takes into consideration exclusively the price, in detriment of quality.

- **Question 6: Select the statement that best matches the common use of certain facilities.**
  Through this question we tried to determine what percentage of respondents might be actually willing to take advantage of a hostel’s services. The results showed that three in ten respondents are willing to share with other guests the accommodation services, representing thus potential clients of hostels.

- **Question 7: From what sources of information have you learned about the hostels? (maximum of 3 possible answers)**
  The results obtained at this question show that the Internet is the main source of information, followed, at a considerable distance, by television, radio and specialized publications (Figure 5).

Figure 5. Sources of information about hostels
Importance of hostels in tourism industry and their perception among young people

- **Question 8: Do you know any hostels in Suceava County?**
  
  Half of the respondents who have heard of hostels in Suceava know the fact that there are such tourist accommodation establishments, although none of them could name a specific hostel in Suceava. Approximately 40% of respondents did not know any hostel in Suceava County, as shown in Figure 6.

![Figure 6](image)

**Figure 6. Sources of information about hostels**

- **Question 9: You know what a hostel is distinguished from other similar establishments?**
  
  Although the majority of the respondents have heard of hostels only 8% of them know exactly what their characteristics are and how they differ from other types of units. This question is a filter, questions 10 to 16 questions being intended for those who know the concept of hostel and its peculiarities.

  - **Question 10: What is in your opinion the advantage of a hostel?**
  
  - **Question 11: What is in your opinion the disadvantage of a hostel?**
  
    These questions reveal the fact that all respondents considered that the most important advantage of a hostel is the low price for the accommodation services and the biggest disadvantage is represented by sharing the accommodation services, aspect which shows that, until now, the openness of the public towards choosing hostels is not very encouraging for operators in the field.

  - **Question 12: What is in your opinion the category of customers whom the hostels address to?**
  
    Through this question we tried to determine whether selected respondents identify themselves with the target group of hostels. The results presented in Figure 7 show that about two thirds of respondents are aware of the fact that they are part of the target group, unlike the other third who believes that hostels are for a more mature audience, probably the middle-aged one.

  - **Question 13: Have you ever enjoyed the services of a hostel?**
  
  - **Question 14: Which do you think was the degree of satisfaction concerning the quality of service you received?**
  
  - **Question 15: Would you recommend to others the hostel accommodation?**
  
    Unfortunately, none of the respondents benefited from the services of a hostel until now, so we could not determine their satisfaction upon the services they received and their willingness to recommend this type of accommodation to other people. People who have answered NO to question 13 must move directly to question 16.
Figure 7. Identifying the categories of hostel consumers

- **Question 16: Would you ever choose as a variant of the hostel accommodation**

  Results showed that only a third of the people who know the peculiarities of a hostel could opt for this type of accommodation, while two thirds have offered a clearly negative response. These percentages show that the disadvantage of using shared services weighs more in customers' balance than the price argument.

### 4. Conclusions and Interpretations

Based on the proposed objectives, we can appreciate that the applied survey has achieved its objectives to a large extent, since it determined, at the level of sample, the knowledge concept of hostel and its specific characteristics, its attractiveness as a tourist accommodation establishment. It has also been determined the availability of respondents with regard to the idea of sharing of certain tourist accommodation facilities with other specific clients. Unfortunately, in the chosen sample, there was not any participant who has benefited from the services of a hostel and that made some questions to remain unanswered. Regarding the behavior of tourist services consumer, there have been highlighted the sources of information used in the choice of location for accommodation services, as well as the level of knowledge of the main tourist accommodation units in Suceava County and in general. Last, but not least, we consider extremely important the determination of the most important attributes for a tourist accommodation unit and the importance of a satisfying quality-price ratio.

With respect to the assumptions we made, the findings are set out below:

- **Hypothesis 1: The concept of the hostel and its characteristics are known to the target audience (young people) – partially confirmed hypothesis:** Results of the survey showed that only 35% of the interviewed students have never heard of a hostel and only 8% of them know what really implies a hostel.

- **Hypothesis 2: The idea of sharing accommodation services with other clients is one of the biggest shortcomings of the hostels – confirmed hypothesis:** Indeed, the survey showed that this is the biggest disadvantage of the hostels, aspect reflected by the fact that approximately 71% of respondents do not want to share accommodation services with other clients.

- **Hypothesis 3: Hostels in Suceava are insufficiently promoted – confirmed hypothesis:** Although in Suceava County only three hostels operate, one of which was appreciated on a blog, none of the respondents knowing what this type of accommodation implies, has ever
importance of hostels in tourism industry and their perception among young people

heard of the existence of such units within the whole county. This result clearly indicates an inefficient promotion, just as the first hypothesis showed that the level of knowledge of the concept is reduced.

5. Overall Conclusions

This research has a unique character due to the fact that it is among the few researches which had hostels as main theme and the due to the way they are perceived by the target audience. Results showed that, although hostels have an advantage by tariffs, many potential customers do not opt for them as they cannot accept the idea of common use of accommodation services. Furthermore, an argument for the lack of attractiveness of hostels is represented by the novelty of the concept itself, by the total lack of its specific particularities and by the low force to promote this type of accommodation unit in Suceava County.

Important, however, is probably that existing hostels on Suceava market have an already defined and loyal clientele that ensures their survival, but it is necessary to better educate customers regarding this concept. Although hostels represent a relatively easy business to start up and maintain, unfortunately we don't think we are able to talk about a business opportunity to the extent that it is obvious the supply is not yet aware of the demand and what this entails, but, of course, the potential exists and must be exploited. Without disadvantaging the hostels, it is appreciated, however, that customer behaviour is oriented towards quality and best conditions, which indicates a clear progress and a certain degree of maturity of the consumer. Agents in the field are thus motivated to diversify the range of services and to wish to improve services and also their quality level. This research represented a starting point, referring to the hostel market in Suceava County and in Romania, having the possibility to be developed by extending the target group to more than one category of persons (more age groups) and in a wider geographical space. Furthermore, the sample in question could be better selected to include previous beneficiaries of the services offered by the hostels so that in the future all questions to be answered. The attitude towards the hostels can be also regarded more or less from a sociological perspective, as individualism reflected in the results of the survey provides a behavioural perspective on us, as a nation, and the need for socializing or developing a sense of property.

Last but not least, as a general conclusion, one can notice that the typical traditionalism of Bucovina area is rooted in consumer's consciousness, choosing classic tourist services, consecrated and known by everyone. New concepts, such as hostel, are hardly accepted and probably will take a very long time before at least one-half of potential customers will fully understand what it entails. Perhaps, once with full integration of our country in EU structures and with liberties it entails, concepts taken from the international countries, which could prove useful and successful, will be assimilated more quickly.

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Abstract. The paper seeks to analyze cultural aspects regarding risk attitudes and gender differences in Romania. The paper is composed out of a literature review, cultural psychology aspects and follows the ideas proposed by Hofstede - who has a very popular study related to value dimensions, and by Trompenaars - who designed a situational questionnaire in order to determine respondents to make decisions in the case of given choices. Moreover, the Romanian culture was also analysed, as it is strongly connected to the research hypotheses. The study has its basis in cultural studies and it is composed out of an empirical analysis with a sample of Romanian students and employees. The respondents received an online-questionnaire, designed in Unipark Software and the empirical analysis was conducted in SPSS Statistical Software. The research questions were analyzed by calculating descriptive statistics, conducting correlations, reliability tests and analysis of variance. According to the results, Romanian respondents are risk averse people. Moreover, there were determined gender differences in risk assessment and age was also an important factor in influencing risk preferences.

Keywords: cultural psychology, risk attitudes, gender differences, culture.

DIFFERENCES IN CULTURAL ASPECTS BETWEEN STUDENTS AND WORKERS IN ROMANIA – AN EMPIRICAL COMPARISON

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1. Introduction

What is culture? If we make a research in specialty literature, there would be a high chance to find a comparison between a culture and an iceberg. If we imagine the iceberg, we realize that practically it is composed out of two parts, separated by water- the visible (and smaller part) and the invisible part (the bigger part).

Therefore, culture is represented by visible aspects like behavior, but also by invisible aspects like thoughts or beliefs. In consequence, if we are eager to understand a culture it is vital to understand its attitudes and perceptions.

Culture has a great impact on all the areas around us, from economical and political, to education and social. As Landes (1998) was stating its importance, “if we learn anything from the history of economic development, it is that culture makes all the difference”.

In our paper we will conduct a cultural analysis of risks and through analyzing Romanians’ attitudes towards this dimension and correlating the perceptions with gender differences, as well.

The study will be part of a cross-cultural research and will be analyzed in comparison with other cultural studies later on.

2. Cultural psychology

Cultural psychology refers to psychological characteristics of culture and can also be related to afferent areas like social, political and economical.

Referring to cross-cultural psychology, the most important studies who contributed to this area of psychological science through determining cultural aspects of values are the research papers of Schwartz (1990, 1994; Schwartz & Bilsky, 1987,1990), Hofstede (1980, 1983, 1991), as well as Bond’s projects (1988; 1987). (Smith et al., 1996)

The main role of cultural psychology is to identify dimensions of cultural variation (Schwartz, 1994). Through proper determination of the aspects of cultural variation, one can identify a better framework for covering different attitude and behavioral dimensions, thus, determine the appropriate study hypotheses. (Smith et al., 1996)

3. Romanian cultural aspects

Romania’s culture in general is a very interesting aspect to be included in our study and could bring an important contribution to the analysis and understanding of final results.

Ancient history places Romanians as being descendents of ancient indigenous Romanized people. In time, as the culture developed, the influence of Western and Central Europe became the most important for Romanians.

End of 18th century brought a great French influence, especially in education, politics and administration. Starting with second half of 19th century, the French influence started to be mixed with German, especially at the cultural level.

Later on, the installation of Communist Regime brought a lot of Slavic aspects with it. The regime used all kind of tools to manipulate the population and to forbid the freedom of expression. Therefore, the communism tried to inhibit the true national values and to build up a new cultural identity for Romanians, where equality was promoted as main value among people.
Differences in cultural aspects between students and workers in Romania

After the fall of the regime, there was a cultural bust sustained by the freedom of expression, when Romania faced a hard period in adapting to the free market economy. However, despite the influence political orientation, Transylvania, where our study will be developed, has been strongly influenced by the Szekely (Hungarian) and the Saxon (German) communities starting with the 12th century on.

4. Literature review

The study to be conducted will have its basis on scientific cultural literature, which is analyzed below.

4.1. Hofstede’s culture dimensions

4.1.1. Cultural dimensions research

Hofstede has a very popular study related to value dimensions, which was conducted in 1960s and the subjects were employees of a multinational American company. This made it possible for Hofstede to identify culture values like power distance, individualism, uncertainty avoidance or masculinity (Hofstede, 1983; Smith et al., 1996).

The above mentioned values will be explained further. As of Hofstede (1980), power distance dimension represents a value of inequality within a culture. Power distance can explain the attitude of a certain culture towards this differences or inequalities. Moreover, the dimension analyzes more the acceptance or refusal behavior of less powerful people towards the unequal distribution of the power. (The Hofstede Centre, 2013)

Individualism, or its opposite - collectivism, are dimensions which refer to identity’s characteristics of a person in a certain culture. An individualism value would highlight one’s own choices and decisions within a culture, whereas the collectivism would define a person whose decisions and achievements are dependent on the group he/she belongs to. (Hofstede, 1983). Moreover, in individualist societies, people are used to take care of themselves and their families, whereas in collectivist societies people are somehow divided in groups and take care of each other for loyalty acts. (The Hofstede Centre, 2013)

At the same time, masculinity represents a dimension which promotes values like performance or success, whereas femininity highlights values related to social relationships and quality of life. (Hofstede, 1983). Masculine societies represent people where people are driven by the will of achievement, and these feelings start in school and are developed later on, within the organizational culture. For the feminine societies, the sign of success is represented by the quality level of life. As for masculine societies it is important to “be the best”, for the feminine societies is important to be “happy with what you do”. (The Hofstede Centre)

Uncertainty avoidance represents a value which would define the level when certain cultures can become uncertain. Cultures which have low uncertainty avoidance prefer less structured situations, whereas high uncertainty avoidance societies prefer more structured situations, with clear guidelines (Smith et al., 1996). According to Hofstede, uncertainty can determine anxiety for people, so the level of uncertainty avoidance can be determined by the ways people treat this situations of ambiguity.

As of Hofstede (1980), power distance and individualism, masculinity and uncertainty avoidance, social and economic values, are sets of dimensions that can be correlated. For
example, collectivist cultures are associated with low GDP (gross domestic product) per capita. (Smith et al., 1996)

In 1991, Hofstede added another value at his set of dimensions, time perspective. He defined another dimension, long term orientation, which is has a close relationship with Confucious’ teachings, and it highlights the society’s perspective upon short or long term.

Even if Hofstede’s popular study represents one of the largest and complex multinational surveys nowadays, it lacks samples from countries which are or were under communist regime, and which would highlight a strong cultural difference. For a survey to be as relevant as possible, the sample needs to be random. Otherwise, would be mandatory to implement a sample matching strategy.

Schwartz (1994) correlated new values with the ones proposed by Hofstede (1980) and one of the most important correlations became the one between Hofstede’s power distance and individualism-collectivism and Schwartz’s values of openness to change versus conservatism. (Smith et al., 1996; Schwartz, 1994).

4.1.2. Hofstede’s values estimation for Romania

According to Hofstede, Romania has a high score in which power distance is concerned, which can highlight the fact that Romanian culture accepts the hierarchies inside their society. As following characteristics of this high power distance, we can further mention a high spirit of centralization, as well as an expected autocratic behaviour from people high in hierarchies.

Hofstede found out that Romania is a collectivist society. Relationships between people are strong and extended and members of the same group are committed to each other. Organizational relationships are also seen as having a strong link that implies moral aspects, as well.

Regarding masculinity or femininity dimensions, Romania turned out to be driven by the feminine dimension, meaning that people appreciate a life quality and solidarity between them. In feminine societies negotiation is often met as an instrument of solving conflicts and non-financial working incentives e.g. flexi-time are easily accepted.

The score reached by Romania in uncertainty avoidance was a very high one, showing that the society is not so flexible with respect to rules of conduct or beliefs. There are certain codes that people need to respect, for example punctuality or hard work. Hofstede did not conduct any study related to long term orientation dimension for Romania. Anyway, if we compare Romania with other Balkan countries, we can assume that it is a short oriented culture. (Luca, 2005)

4.2. The Trompenaars Questionnaire

Trompenaars designed a questionnaire in 1985 trying to create different situations for the respondents, in which they would have to take some decisions or choose between two given choices. Trompenaars’ questionnaire was designed after the value dilemmas proposed by Shils and Parsons (1951). The questions were usually related to organizational culture or behavioural aspects. (Smith. & Dugan, 1996)

Trompenaars sample was spread across many nations and his database was similar to Hofstede’s (1980), approach which was different from the usual cross-cultural study, which would be more focused on certain nations. (Smith. & Dugan, 1996)
Differences in cultural aspects between students and workers in Romania

It could be also added that, as of Williams and Best (1990), there is a linkage between gender aspects and collectivism or individualism. Results show that in individualist societies, gender roles are not as rigid as in collectivist ones. (Smith & Dugan, 1996)

5. Variables to be analysed. Risk attitudes and gender differences

5.1. Risk attitudes

Risk attitude is a very important variable to determine in our study, especially when we are considering economical areas. The ability to understand a person’s risk behaviour can bring important benefits to the prediction of certain economic decisions. (Dohmen et al, 2009)

Studies in the field show that an important variable which makes a difference in risk assessment is gender. But at the same time, the methods of collecting data related to risk attitudes are being questioned. Through questionnaires, respondents can report mistrustful statements about themselves.

However, in this case the question format is very important, e.g. a presumptive lottery situation, where the respondent would have to take financial decisions, represents a reliable method. (Dohmen et al, 2009).

To increase the efficiency, results of the lottery choices can be further correlated with other risk assessment questions.

5.2. Gender differences

Gender differences have been frequently analysed in behavioural and cultural studies. Personality studies reveal small gender difference compared to individual variation among genders. Also, differences apply for youngsters as well as adults and are mainly focusing on stereotyping. (Costa Jr. et al, 2001)

Regarding the stereotypes, women consider themselves more sensitive and with higher neurosis, while men were stereotyped as being more creative and self-confident. (Costa Jr. et al, 2001)

Of course, there is a variation of these aspects depending on the culture. Unlike the ideas proposed by the social role model, the results shown in some studies reveal that differences are stronger in Europe and US.

Maccoby and Jacklin (1974) were the first researchers to study the gender behavioural differences for children and adults. This study, as well as others that followed, have shown that women are more anxious than men and their self-esteem is also lower than in men’s case.

Psychologists consider the differences in feelings a natural result of evolution. There are events in women’s life, i.e. childbirth that can make them more sensitive. Also, the genetic aspect, especially hormonal, can be the cause of mood differences. (Costa Jr. et al, 2001)

Regarding a cultural analysis, there can be differences between gender roles and perceptions. As of Williams (1990), gender differences are greater in traditional cultures (e.g. Pakistan) than in modern societies (e.g. The Netherlands).

If we relate the aspect of gender differences with Hofstede’s masculinity dimension, we would determine a correlation between masculine societies and high gender differences. In masculine society roles are more specific, e.g. women are allowed to be sensitive, whereas men need to be strong.
6. Research Objectives and Methodology

There will be an empirical analysis with a sample composed of Romanian students and employees. The two groups were presented with exactly the same online questionnaire, the only difference being in the extra questions related to some company characteristics, in the employees’ case.

Respondents were asked to provide some personal information first. After, they were asked to appreciate their risk aversion generally, as well as in different situations: financial, career and health.

Moreover, in the next part we applied Dohmen’s method for analyzing risk attitudes through making choices concerning a presumptive lottery. There were also questions regarding the monthly wage, professional experience and abroad experience. For the employee’s questionnaire, we considered important to ask questions related to their company.

More than this, there were questions related intercultural preferences, as well as a self-defining question with behavioural and personality characteristics.

The variables analyzed are risk attitudes, together with the impact of gender differences. The hypotheses are based on scientific research and literature, stated above and the data analysis was conducted in SPSS.

7. Data analysis and results

7.1. Descriptive Results

There were in total 411 participants whose answers were conducted in the analysis as they fully completed the survey.

Of them, 173 (43%) were male, and 232 (57%) female. The ages of the participants ranged from 19 to 63, according to the mean age many of the respondents however were not yet in their thirties. Respondents’ status varied, as 152 (37%) were single, 130 (31.6%) had a serious relationship, 120 (29.2%) were married and 6 (1.5%) were divorced. Most of the participants did not have children (23.6%) and 167 (40.6%) were living with their partner.

Respondents had variance also in their education and had many professional backgrounds, from Engineering, Economics to Political Sciences or Medicine.

Most of the participants announced to earn a medium income between 750-1700 RON per month (170 respondents), followed by the participants who announced to earn an income of less than 750 RON per month (102 respondents). Income was about 1700-2700 in other cases and only 12 participants (2, 9%) earned more than 6000 RON per month.

The working experience ranged from 0 to 35 years and the most common ranged from 1 to 10 years of experience.

7.2. Results on research questions

Hypothesis 1

This hypothesis predicts that Romanian culture is a high risk aversion culture.

As seen in the table below, the means for risk assessment are a bit above the medium. For General Risk, the mean value is 6.97 whereas for Financial Risk the mean value is 6.31. Also, for Career Risk there is the highest mean of 6.98. Lottery choice has a mean of 8.67, meaning that respondents change to safe payment at the value of around 230 RON.
Differences in cultural aspects between students and workers in Romania

Regarding risk attitudes, at the situational question implying the choice between a secure payment and the chance of winning a bigger sum at an imaginative lottery, 23 Romanian respondents had chosen the lottery for every option. Out of these 23 respondents, 11 were employees and 12 were students.

Moreover, 19 respondents chose as every option the secure payment and had no risky choice. Out of these 19 respondents, 11 were employees and 8 were students.

**Hypothesis 2**

This hypothesis predicts that there is a difference between respondents’ gender and their risk attitudes. To determine the significance of the relationship there was conducted a regression analysis between the two variables.

Moreover, to determine the differences between gender groups in which risk assessment is concerned, there was conducted a T-Test between the two different groups.

According to the T-Test conducted, women are more risk averse than men.

The risk scale ranged from 0 to 10, 0 meaning “not willing to take risk at all” and 10 “willing to take risk”.

Moreover, the differences between men’s and women’s risk choices are highlighted in the graph below.

![Graph for Means of Gender – Risk differences](image)

**Figure 1. Graph for Means of Gender – Risk differences**
Hypothesis 3  
This hypothesis predicts that there is a difference between risk attitudes of students and employees. In order to determine the differences between students and employees, in which risk assessment is concerned, there was a T-Test conducted between the two different groups.

According to the T-Test, employees are more risk averse than students. Risk preferences scale ranged from 0 to 10, 0 meaning “not willing to take risk” and 10 “willing to take risk”.

![Graph for Means of Risk differences](image)

8. Research conclusions

8.1. Discussion on results

The first hypothesis stated that Romania has a high risk aversion. The statement was based on Hofstede’s dimension, uncertainty avoidance, which was very high for Romania. More than this, uncertainty is considered a permanent thing people had to fight inside the society and this is why Hofstede explains that Romanians fear risky and ambiguous situations. Therefore, the hypothesis was accepted after the conducted analysis. The means for risk assessment were close to medium risk aversion. Overall, respondents showed a high risk aversion.

The second hypothesis stated that there is a difference between respondent’s gender and their risk attitudes. Maccoby and Jacklin have shown that women are more anxious than men and their self-esteem is also lower than in men’s case. Moreover, according to Dohmen et al, there could be a significant relationship between the respondent’s gender, age, height or parental background and the way of assuming risks. After conducting empirical analysis in determining the risk differences among Romanian respondents, women were indeed determined to be more risk averse than men.

The third hypothesis stated that there is a difference between risk attitudes of students and employees. The statement is based on Weber and Hsee’s studies related to the differences between students and employees and also on Hofstede’s theory, regarding the level of individualism and risk perception. According to the analysis conducted, employees are more...
Differences in cultural aspects between students and workers in Romania

risk averse than students. Therefore, it was supported the prediction that students and employees will have different attitudes concerning risk.

8.2. Limitations and future research

Like in every cross-cultural research, there are high chances that various limitations can exist. It can be admitted that constraints on generalizability were present in the current study, such as ability to draw descriptive or inferential conclusions from sample data about a larger group. Bigger sample group would have given opportunity to calculate meaningful factor loadings to find out better difference between the cultures.

Another limitation of the study is that cultures perceive certain aspects in different ways.

Moreover, as this study was conducted online, the respondents’ environment could not be tested.

Also, as the study was conducted in the midst of Romanians located in mostly in Sibiu, Transylvania, the future studies could take in consideration the effect of the local specific culture and environment. Replicating the study over time and in different geographical areas could give a better understanding of the underpinnings in this study.

An interesting future research question would be to consider how economical situation is related to risk preferences.

The study will bring important contribution to cultural research, as it will analyze Romanians behaviour and attitudes towards important variables like risk and inequity.

Across the world, people act and think differently, but there should be a way to achieve a common understanding. This is a great way to foster development and evolution, as well as a better communication for delivering better solutions.

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About the authors

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Abstract. Mass marketing is the maximum level of exposure and communication of the campaigns that promote products and services among consumers. It allows, in general, the use of the various technologies for informing the public and, in particular, the use of the Internet, which offers multiple opportunities in terms of the creation and development of a direct relationship between organizations and customers. Although these channels of communication involve essential advantages for the marketing activity, they are also characterized by a high level of vulnerability in relation to certain threats, such as the various methods of fraud, of which the most common are: the frauds targeting businesses, the charity schemes or those regarding the emergency assistance, the foreign lottery and sweepstakes frauds, the investment schemes, the merchandise purchase/product misrepresentation schemes, the psychic/clairvoyant schemes, the romance schemes, the traditional West African fraud schemes. The awareness of the existence of social danger generated by this type of crimes has led to intensifying the fight against them, in the last decade, they becoming a real source of financing the international terrorism actions.

Keywords: mass marketing, fraud, financing, international terrorism.

MASS MARKETING FRAUD – A REAL SOURCE OF FINANCING THE INTERNATIONAL TERRORISM

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1. Introduction

Fraud refers to the obtaining of financial advantage or causing of loss by implicit or explicit deception; it is the mechanism through which the fraudster gains an unlawful advantage or causes unlawful loss (Levi et al., 2007).

The analysis of fraud typology highlights two categories of victims, namely the private sector (the financial and non-financial services, the population) and the public sector (local, central and international institutions). Of these, the population is, in general, the target victim of most frauds, these involving the bearing of some costs in the form of:

- higher insurance premiums;
- reducing the earnings from wages, pensions or dividends;
- growing the value of the credit rates and other commissions charged for various services that offer to users a high level of security and safety.

Basically, the population is found both in the category of primary victims (natural or legal persons, public institutions that are initially affected by the damages through fraud) and in the category of secondary victims (the primary victims who were targeted initially and the financial institutions, the insurers and the professional organizations that have to bear, in the end, the costs generated by the economic component of losses resulting from fraud).

If two decades ago the methods and the techniques of mass marketing fraud were relatively rudimentary, based on a small number of means of communication (the e-mail, the phone and the print media) and targeting only the population from the local range of action of the offenders, in the present, due to the development of technology, the targets of fraud are individuals from all around the world, the main method of contacting them consisting of sending millions of e-mails promising prizes and inexistent products or services in exchange for money or personal information. Also, to benefit of high credibility, the offenders create websites with real contact information, misleading the population.

The illicit gains, obtained through the mass marketing fraud, are used most often for sponsoring the terrorist actions. Therefore, it is necessary that the countries from all around the world understand how terrorists or their supporters resort to legally using the means of communication, the trade and transport facilities for illegal activities (Frunzeti, 2006), and adopt a zero tolerance policy against the criminal groups that financially support the terrorist organizations. A key role in this regard is held by the international bodies involved in combating crime, they developing over the past decade, certain strategies to prevent and diminish the phenomenon of fraud, which has a significant impact on the financing approaches of global terrorism. Thus, on 1st of August 2010 came into force the EU – USA Agreement regarding the program of tracking the terrorist financing, through which EUROPOL (European Police Office) has assumed the obligation to verify the requests submitted by USA to the providers of financial messaging services from the European Union. However, Europol has created a single contact point for its analysis work files and for the Member States, in order to coordinate all information exchanges with the USA agencies, made on the base of this agreement, including the spontaneous provision of information and the search requests submitted by USA regarding the TFTP - Trivial File Transfer Protocol (Europol, 2011).

2. Mass Marketing

The mass marketing, also known as undifferentiated marketing, consist in the exposure and the extensive communication of the campaigns that promote products and
Mass marketing fraud – a real source of financing the international terrorism

The use of all means of communication, such as the print media, radio, television, and the Internet, allows for the visualization and reasoning through pictures and texts. The print media offer the possibility of direct targeting of readers through the use of newspapers, magazines, discount orders, brochures, and flyers. Radio and television have become flexible means of communication, allowing for campaigns to be adapted according to results and generating amplification effects. The advent of the Internet has accelerated the speed and reach of communications, opening opportunities not available two decades ago. In 2012, Asia had the highest percentage of internet users (44.80%), followed by Europe (21.50%), North America (11.50%), and Latin America/Caribbean (10.40%). The distribution for Middle East, Africa, and Oceania/Australia was 3.80%, 7.00%, and 1.00%, respectively.
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The percentage of 44.80% of the Asian Internet users can be justified both by the size of the continent's population (about 56% of the total population of the globe) and by the technological development and socio-economic indicators specific to this region.

During 2000 – 2012, the usage level of the Internet access services recorded an explosive growth in Africa (3,606.70%), in the Middle East (2,639.90%) and in Latin America/Caribbean (1,310.80%), these regions being followed by Asia with 841.90% – figure 2 (Internet World Stats, 2012).

![World Internet penetration rates by geographic regions and the growth of use of the Internet in the period 2000 - 2012](image)

**Figure 2.** World Internet penetration rates by geographic regions (30 June 2012) and the growth of use of the Internet in the period 2000 - 2012

Regarding the Internet penetration rates, the highest level was recorded in North America (78.60%), in Oceania/Australia (67.60%) and Europe (63.20%). In the other geographic regions, the percentage did not exceed 50%.

In Europe, according to the study conducted by Mediascope Europe (IAB Europe, 2012) in February 2012, 65% of the population had access to the Internet, spending on average 14.8 hours per week in the online environment. More than a third of Europeans (37%) used the Internet with the help of at least 2 devices, 21% of them accessing it via mobile phone. The study also highlighted that:

- 9 of 10 European Internet users visited new websites;
- 73% watched TV online;
- 67% listened to radio online;
- 51% considered that the Internet helped them to a large extent to choose the most appropriate products and services;
- 47% are interested in finding more about the products they saw in the online advertisements;
- 96% of the European Internet users studied the online offers, 87% of them buying from online stores.

Along with the increasing number of online users, the growth of the Internet penetration rate and also along with the development of technology, the marketers have developed new ways to enhance the direct interaction between organizations and consumers. Thus, in the last two decades, most marketing campaigns have moved in the virtual...
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environment, the Internet becoming an essential tool in their efforts to attract and retain the customers. It also became a real means of proliferating the crime phenomenon, its detailed analysis highlighting:

- on the one hand, the main methods used to promote and support the terrorism acts, the most important being (UNODC, 2012): propaganda (including recruitment, radicalization and incitement to terrorism), financing, training, planning (including through secret communication and open-source information), execution and cyber attacks;
- on the other hand, the most efficient ways of preventing and counteracting them, and the means of collecting the evidence necessary to their prosecution.

3. Mass marketing fraud

Mass marketing fraud involves the obtaining of financial advantages by exploiting the various mass communication media in illicit purposes, the most commonly used being the television, the mail and the Internet.

The spectacular developments in the telecommunication field and the evolution of the financial services led to the intensification of the use of mass marketing, both for legitimate business purposes and for committing frauds against the consumers. The main common element of the various methods of fraud is the use of false and deluded information in order to determine the potential victims to make advance payments to the fraudster. Although there are no comprehensive statistics on this issue, it is estimated that the mass marketing fraud generates annually, millions of victims and financial losses of hundreds of millions of euros. For example, FBI (Federal Bureau of Investigation) has investigated in 2011, 96 cases of mass marketing fraud, being observed a decrease compared to 2007 (127 cases), but an increase in comparison with 2010 (86 cases), these ending with multiple indictments and convictions – figure 3 (FBI, 2012).

![Figure 3. The mass marketing fraud pending cases in the period 2007 – 2011](image-url)

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The main methods of mass marketing fraud are (IMMFWG, 2010):

- **Acquisition and Advertisement Fraud Targeting Businesses.** These are the most commonly used methods because the amounts of money obtained in an illicit way are larger than those resulted from scams that target the individuals and also because the employees are not so vigilant and capable to detect and protect the organization of such fraud schemes. The most used are: the “assumed sale” technique, through which the perpetrators demand the payment for fictitious debts, thereby misleading the company that one of its employees approved the purchase; the fictitious companies technique – under a false image of a legitimate business, these companies sell products of poor quality, advertisements in nonexistent or poorly-distributed business directories, and poorly-crafted web sites.

- **Charity Schemes.** Making use of real causes (humanitarian, environmental and animal protection etc.), the perpetrators request to their victims to make different donations, the amounts obtained being used for their personal use or for other illegal purposes.

- **Emergency Assistance Schemes.** Posing as family members or close friends, the perpetrators contact their victims, notifying them that one of their relative had an accident or was arrested outside the country. Thus, they request for the transfer of large sums of money, arguing that they are necessary to cover the medical expenses or to pay the bail.

- **Foreign Lottery and Sweepstakes Fraud.** Under the pretext of winning some prizes in money or objects, the perpetrators request to their victims to make payments in advance in order to take possession of prizes.

- **Merchandise Purchase/Product Misrepresentation Schemes** (the online shopping fraud, the catalogue – based purchases fraud etc.). In these cases, the perpetrators don’t deliver the goods ordered and paid by customer or they deliver low quality goods that don’t justify their high prices.

- **Psychic/Clairvoyant Schemes.** The perpetrators assume the status of clairvoyants and under the pretext of offering vital information that will change the victims’ lives they request them very large amounts of money. They predict them either a great fortune or an imminent bad luck determining their victims to pay more and more for further details.

- **Traditional West African Fraud Schemes.** Also known as the “419” frauds after the section of the Nigerian criminal code pertaining, these frauds consist mainly in deceiving the victims who pay fictitious fees and taxes to claim the nonexistent estates of previously-unknown and now-deceased relatives.

By exploiting the commercial potential of the mass marketing and of the new information technologies, the fraud perpetrators continually develop complex fraud techniques and methods through which they illegally obtain significant incomes that are used most often for illegal purposes.

Currently there are no accurate statistics related to the measure in which the amounts obtained through mass marketing fraud are used to financing the terrorism acts, due to the reasons of failing one or more of the basic conditions of the concept (Dobrinoiu, 2006), namely: to have caused a significant material damage, loss of lives or to have induced a general state of fear or panic. However, the phenomenon exists, looming ever larger and being closely monitored by the institutions dealing with the crime and terrorism prevention activity (Europol, Interpol etc.).
4. Conclusions

With all its advantages in terms of business communication and promotion, the mass marketing is, however, a method of proliferation of cross-border crime, with major consequences on enhancing the communications for terrorist purposes.

The main methods by which terrorists use the mass marketing to obtain and collect the needed funds and material resources are:

- **the direct approach of the victims** (through social networking sites, e-mails and mass mails, they requiring different amounts of money, in the form of donations);
- **the e-commerce** (through virtual stores offering to supporters or victims various books, audio and video recordings);
- **the exploitation of the weaknesses of electronic payment systems** (through the use of electronic money transfer platforms, such as those for payments by credit card or alternative payment facilities – PayPal or Skype);
- **charitable organizations** (either by creating a false image of so-called legitimate charitable organizations such as Benevolence International Foundation and Global Relief Foundation that financed the terrorist groups in the Middle East, or by infiltrating the branches of real charitable organizations and using them as a cover for promoting the ideologies of the terrorist groups or for distributing informational materials to the militant groups – Conway, 2006).

Taking in consideration the aspects mentioned above, it is necessary that institutions dealing with the crime prevention activity (both nationally and internationally) to be prepared to intervene in such situations of crimes, in order to succeed in minimizing the fraud risks and its impacts on society. To achieve this goal it is necessary that those institutions realize the importance and the extent of the dimension that is about to be reached by the international terrorism financed with funds obtained by fraud.

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Abstract. The market of hotel services from Romania has been characterized in recent years, by the significant extension of the accommodation offer. The difficulties inherent associated to the setting up of an accommodation unit are multiplied on the period of its functioning, because the essential problem which needs to be solved is to assure the constant flow of customers which can bring the revenues and the expected profitability. The article aims to highlight some specific elements in the management of web pages of the accommodation units, and the ways in which their content is perceived by the customers who use this alternative for information and reservation. In this respect it was organized a quantitative marketing research with the title “Attitudes, opinions and behaviors of the population from Brașov regarding the way in which the web page influences the activity of accommodation units” with the main target of revealing issues regarding the impact of online communication on the potential tourists and finding what improvements and changes can be brought in order to make it more efficient.

Keywords: marketing communication, Internet, web page, tourist information, accommodation units.

THE WEB PAGE – MARKETING COMMUNICATION MEAN IN THE ACCOMMODATION UNITS’ ACTIVITY

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1. Introduction

Finding the right customers, at the right moment during the whole functioning period are major challenges for the management of accommodation units, and the Internet, represents one of the most persuasive media used in the communication process with the market. One of the most important concerns in this field refers at the way in which this communication facilitates the choice of tourist units according to preferences and needs. The web sites provide complete information on companies and products, facilitate a fast feedback, contribute to customer loyalty and, also, present the major advantage of quick update of information sent.

The website is considered the foundation stone of any marketing action on the Internet. A valuable site can contribute to the development of brand identity, the development of direct marketing, practicing e-commerce, customer support, etc.

2. Theoretical background

The promotion policy is one of the most dynamic variables of the marketing mix, which, together with the electronic commerce, turns out to be one of the drivers of Internet continuous development (Grosseck, 2006). The most important means through which the promotional communication on the Internet is achieved are the e-mail and web page.

The first step of an organization which desires to use the Internet is the assurance of an online presence, which represents, the key point of the customers communication process. There are many benefits associated: the reduction of sales costs, the promotion of the organization, gaining new market segments, direct sale, customers loyalty, getting data for the marketing researches, a strong tool of public relations, fast feedback, etc. The Internet benefit from an important advantage in the marketing activity compared to the printed means, radio or even television, because of the unique opportunity offered to users to use the web pages as a mean of interactive communication (Grosseck, 2006).

A key factor for establishing durable relationships with customers and enhancing their purchase intentions is their satisfaction with the online company environment (Bai et al., 2008). Recently, by including in the hotel web pages the access tools at the social networks the relationships with the users are strengthened (Park and Gretzel, 2007), the communication being dynamic and interactive (Hsu, 2012). The strategies of accommodation units managers regarding the development of the site targets especially the information of customers and, to a lesser extent, strengthening relationship strategies (Escobar-Rodriguez and Carvajal-Trujillo, 2013). Using Internet marketing tools is positively associated with firm performance and hotel managers should avoid a simple presence on the Internet (merely informational) and instead pursue a more interactive presence directed to interaction with potential customers and build a new business model for providing free content-sharing services (Shuai and Wu, 2011).

Offering online room reservation and a client communication channel presume the responsibility of responding to these demands. By not doing so, hotels may not only lose clients that have shown an interest in them—after all, they have navigated to the website looking for information and placed a reservation or sent a question—they might also damage their market image over the long term (Schmidt et al., 2008).

The researches made have shown the most important criteria in assessing the website, generally, namely the quality of e-communication, respectively (1) the available information and content; (2) the ease of browsing; (3) security/private character; (4) trust (Zeithaml et al., 2002). The development of the web page starts from knowing the motivations for visiting the
The web page – marketing communication mean in the accommodation units’ activity

page, finding the information linked to the product required, as part of decision-making process, and, in case of convincing the potential customer on its quality (depending on the performance of the site), the performance of reservation. Vital for a hotel reservation are the descriptions included combined with images that can offer the visitor the real impression on the atmosphere and experience acquired after the consumption of the product searched. The axiom formulated by specialists is: “the content of the site is the king” (Shoemaker et al., 2007), mentioning that too much information will remove the customer, essential being the fast and easy access at information searched by the customer. For these reasons, the efficient sites have different sections for different interested customer segments. The website quality has positive influence on customer satisfaction in terms of playfulness, navigation, trust, variety of online destinations abroad, information quality, and e-transactions; and there is a room for website improvement in many directions (Vladimirov, 2012). The attractiveness of the site is an important requirement of success, adding the ease of access at the desired information, the rule number two expressing the need of continuous update of information (Kotler et all, 2006).

In our country the development and maintenance of the web page by the accommodation units is compulsory (Ord. 1051/03.03.2011), according to the recommendations of the European Travel Commission (2010) for improving the online communication with tourists.

3. Research method

The aim of the quantitative marketing research with the title “Attitudes, opinions and behaviors of the population from Brașov regarding the way in which the web page influences the activity of accommodation units” is to identify the attitudes, opinions and behaviors of population from Brașov regarding the way in which the web page influences the activity of accommodation units. In this respect were established objectives and general and statistical hypothesis, the questionnaire was made and applied on a sample of 384 persons, selected with the two stage sampling method. This method was chosen in order to better identify the population which used the services of an accommodation unit in the last year.

4. Results

Based on answers at the question “Which are the information sources used when you select the accommodation unit?”( question with multiple answers) it was found that most of the respondents, respectively 26,2% of the total number of recorded answers and 54,2% of the total number of interviewed persons use the information from the web page of the accommodation unit. The second alternative with most answers acquired with a percentage of 20,6% of the total number of recorded answers is represented by the tourism agencies, and the lowest number of answers, with 16,1% from the total were recorded for advertisements from newspapers, magazines, radio, TV (as shown in table 1).

From the total number of 384 members of the sample, 48 people answered that they do not look at the web page before they decide about the accommodation unit (12,5% of the total number of respondents) and the rest of 336 persons decide about the accommodation units using the web page (87,5% of the total number of respondents).
Table 1

The distribution of results regarding the information sources

<table>
<thead>
<tr>
<th>Sources of information</th>
<th>Responses</th>
<th>Percent</th>
<th>Percent of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>References, stories of friends and relatives</td>
<td>141</td>
<td>17.7%</td>
<td>36.7%</td>
</tr>
<tr>
<td>Catalogues, tourism guides</td>
<td>154</td>
<td>19.4%</td>
<td>40.0%</td>
</tr>
<tr>
<td>Internet-web page of the accommodation unit</td>
<td>208</td>
<td>26.2%</td>
<td>54.2%</td>
</tr>
<tr>
<td>Advertisements from newspapers, magazines, radio, TV</td>
<td>128</td>
<td>16.1%</td>
<td>33.3%</td>
</tr>
<tr>
<td>Tourism agencies</td>
<td>163</td>
<td>20.6%</td>
<td>42.5%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>794</td>
<td>100%</td>
<td>206.7%</td>
</tr>
</tbody>
</table>

Another question included in the questionnaire shows the importance of the tourist web page for tourist information in the accommodation units’ activity. The assessment of populations’ parameters is presented in table 2 and results that the respondents consider important the web page giving an average of 4 points (3.69), the median showing an importance degree of 4 points. The importance degree was given the minimum level of 1 point and the maximum level of 5 points resulting an amplitude of 4 points.

Table 2

The descriptive statistics indicators (the importance of the web page)

<table>
<thead>
<tr>
<th>N</th>
<th>Valid</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>330</td>
<td>3.6990</td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>1.1110</td>
<td></td>
</tr>
<tr>
<td>4.0000</td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td>1.12751</td>
<td>1.271</td>
<td></td>
</tr>
</tbody>
</table>

From the table of frequencies it can be noticed that there are 54 answers missing and 330 valid. Of the 330 respondents the majority representing 35% of the valid answers, have given 4 points on a scale from 1 to 5, where level 5 means “Very important”, and level 1 means “Very little important”, as results from figure 1.
Another analysed question highlights the elements and information considered relevant and needed for the development of the accommodation unit’s web page, the answers obtained being presented in table 3.

Table 3

<table>
<thead>
<tr>
<th>Information and elements needed to be included in the web page content</th>
<th>Responses</th>
<th>Percent</th>
<th>Percent of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>The presentation of the accommodation unit accompanied by images</td>
<td>128</td>
<td>14.2%</td>
<td>38.1%</td>
</tr>
<tr>
<td>The possibility of online reservation</td>
<td>96</td>
<td>10.6%</td>
<td>26.8%</td>
</tr>
<tr>
<td>The display of the offer and of the corresponding rate</td>
<td>186</td>
<td>20.6%</td>
<td>55.2%</td>
</tr>
<tr>
<td>The presentation of the services offered</td>
<td>147</td>
<td>16.3%</td>
<td>43.8%</td>
</tr>
<tr>
<td>Promotions</td>
<td>115</td>
<td>12.8%</td>
<td>34.3%</td>
</tr>
<tr>
<td>Contact information</td>
<td>147</td>
<td>16.3%</td>
<td>43.8%</td>
</tr>
<tr>
<td>Information regarding location and a map for orientation</td>
<td>83</td>
<td>9.2%</td>
<td>24.8%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>902</td>
<td>100%</td>
<td>268.8%</td>
</tr>
</tbody>
</table>

From 384 respondents only 336 persons have given answers at this question, the rest of 48 answers missing. Because several answers were recorded for the same alternative, 902 answers were accumulated in total. Most answers were recorded for the display of the offer and corresponding rate (186 answers), representing 20.6% of the total recorded answers and 55.2% of the total number of interviewed persons.
The following alternatives with most accumulated answers with 16.3% (147 answers) from the total recorded answers are represented by the presentation of services offered to tourists and those regarding the contact information. The lowest number of answers (83 answers and a percentage of 9.2% of the total answers) were recorded by the information regarding location, including also a map. Regarding the ranking using the criteria of the importance of the web page’s main aspects the interviewed persons have shown that the permanent update of the information ranks first, the display of the accommodation unit’s offer details ranks second, the ease of access at the information presented ranks third, the existence of a search engine ranks fourth and the design of the web page ranks the last place.

Also, the respondents were asked to express their agreement in connection with the following statement: "The web page is the business card of the accommodation unit". From the analysis of frequencies it can be noticed that there are 48 missing answers and 336 valid. Out of 336 respondents, most of them, representing 37.5% of the valid answers, have given 4 points on a scale from 1 to 5, where level 5 means "Total agreement", and level 1 means "Total disagreement" as can be noticed in figure 2. The estimation of the population’s parameters reveals the idea that the respondents are expressing their agreement on the statement regarding the web page giving an average of 3 points (3.46), the median indicating an expression of the statement of 4 points. The minimum level of 1 point was given and also the maximum level of 5 points, resulting an amplitude of 4 points.

![Figure 2. Expressing agreement with the statement: "The web page is the business card of the accommodation unit"

After the analysis of the links between the variables of research resulted that from the members of the sample who declared that they use to look at the web page before seeking the services of an accommodation unit, 94.4% are under 25 years old, 89.7% are between 26-35 years old, 76.5% are in the category 36-55 years old, 55.6% are between 56-75 years old and a
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percentage of 33% are over 75 years old. Analyzing the structure of those who use to look at the web page before they choose an accommodation unit with those who do not use to do this it can be noticed that the percentage of persons is higher among those who use to look at the web page. Also, from the members of the sample who declared that they use to look at the web page before they find an accommodation unit 95,1% are pupils and students, 92% are employees with higher education, 91,7% are employees in the field of services, 87,5% are freelancers, 83,3% are homemakers or retired, 80% are employees with secondary education and 61,5% are workers.

5. Conclusions

From the research it was noticed that the main information source used by respondents when they choose an accommodation unit is the internet, followed by the travel agencies. Regarding the availability of the web page of the accommodation units, the respondents consider it as an important factor, testing the statistical hypothesis according to which the average importance is different from 4 points. The respondents consider absolutely necessary to present on the web site of an accommodation unit the offer and corresponding rate, followed by the presentation of services offered to tourists and those linked to contact information, considering that the information linked to location and map being less important, because probably many tourists prefer to travel by car, which in most cases has a GPS navigation system. The participants at the research have the opinion that the permanent update of the information found on the site is the most important criteria in the assessment of a web page, the display of the offers details ranking second, followed by the ease of access at the information presented, the existence of a search engine and the design of the web page.

As results from the research the attention given to the online environment, especially to the accommodation unit’s site in the communication with the potential customers influence the activity of the accommodation units. Looking at the web page can create a first impression which will influence later the choice of the tourist, respectively the reservation of accommodation services at the accommodation unit viewed or continue searching. The online environment allows obtaining a quick feedback of customers’ opinions, which can lead to the offer of additional and customized information to those interested.

Starting from the reality that in tourism the competition is very strong, the success chances increase when the accommodation units succeed to differentiate in relation to competitors through innovation and increased attention to customer. In this respect, the design and management of the web page enrolls in the range of necessary action means.

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Abstract. This article aims to identify the determinants of the decision to emigrate among Romanian physicians. After the accession to the European Union, the emigration of medical doctors has intensified, with major repercussions on the medical system and the national security. Identifying the push and pull factors is the first step in the attempt of implementing a set of measures in order to monitor and stem this phenomenon. A survey was conducted among Romanian physicians (trained in Romania) with an international work experience (currently working abroad or those who worked abroad and returned). Data collected was analysed using SPSS. The main determinants of migration (push and pull factors) identified are: level of payment, working conditions, access to high performance equipment, career prospects and educational opportunities, respect for the medical profession. The main findings offer valuable information on the causes of emigration, constituting a support for policy makers in the health domain.

Keywords: brain drain, Romania, push factors, pull factors, medical sector.

DETERMINANTS OF MEDICAL BRAIN DRAIN IN ROMANIA

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1. Introduction

The emigration of medical doctors has intensified after the accession to the European Union, Romania becoming an important exporter of physicians. Between 2007 and 2013, more than 14000 medical doctors lefted the country. The lack of accurate statistical data creates difficulties in appreciating the magnitude of the phenomenon and its implications on the health system or economic growth.

This area remains still under researched, offering limited information on the causes and consequences of emigration. In this respect, this exploratory study aims to complete the existent literature with some evidence on the main determinants of the decision to emigrate.

2. Literature review on the push-pull theory of migration

Migration is a complex phenomenon which attracted over the time the interest of different economists, historians, geographers, sociologists, demographers, anthropologists. Although the perspectives on migration have evolved, from the first attempt of Ravenstein’s “laws of migration” (1885, 1889) to the new economics of migration, scholars concluded that a general theory is impossible to elaborate due to the interdisciplinary character of this phenomenon, its complexity and diversity (King, 2012).

According to UNDP, in 2010, there were 214 million international migrants in the world. These figures could have a different interpretation depending on the side of the “migration coin”. On one hand, the number may represent the population of the fifth largest country in the world, on the other, it represents only 3 per cent of the global population, meaning that 97 per cent of the population is immobile (King, 2012). In this context the following question arises: Why do people emigrate?

Starting from Ravenstein’s “laws of migration”, Lee (1966) developed a new analytical framework, identifying the four factors that influence the decision of emigration: factors associated with the area of origin, factors associated with the area of destination, intervening obstacles and personal factors. Migration is driven by a set of push factors – operating as repealing factors in the country of origin and pull factors – operating as attraction factors in the country of destination. The decision to emigrate is not influenced only by a simple analysis of push and pull factors, but also by the intervening obstacles between the origin and destination area. Obstacles such as distance, physical barriers or immigration restrictions have a different influence on the prospective emigrants. Finally, the decision is also influenced by personal factors, whose influence may vary with the economic situation, the stage in the life cycle or the personality. Lee used the push-pull schema in order to elaborate some hypotheses regarding the volume of migration, the streams and counter streams and also the characteristics of migrants (Lee, 1966).

The push-pull model became the most popular migration model, due to its apparent capability of integrating all types of determinants of the emigration decision (De Haas, 2008). Based on the principles of neoclassical paradigm (utility maximization, rational choice, factor-price differentials between regions, labour mobility), the push-pull model dominated the studies in the migration domain during the mid-twentieth century (King, 2012).

However, as every theory, the push-pull one has its limitations. Firstly, it is considered (De Haas, 2008) to be rather a descriptive model, with the determinants of the decision to emigrate established on an ad-hoc manner, with no possibility of quantifying the role and importance of factors.
The drivers are often presented in a mirror image, the relative or perceived gap between origin and destination country acting as a push-pull action. In general, the gap between the levels of income is perceived as the most important driver of emigration, followed by the “satisfaction gap”. The decision of emigration varies from an individual to another and is influenced by a mix of reasons, which may be different in different countries and at specific times (Buchan, 2008).

Personal factors and perception of each individual regarding the push and pull factors and the obstacles play an important role in the decision making process, so assumptions following the particular to general deductive logic are irrelevant.

Moreover, it can not offer an answer to some important questions like why so few people migrate and why some countries are heavily affected by the emigration phenomenon and others are not, under the same economic conditions (King, 2012).

The majority of the studies whose aim is to identify the main push and pull factors concluded that the level of income is the most important. In the particular case of medical sector, several studies exist, the conclusions being mainly the same. The mostly affected regions by the medical brain drain are Asia and Africa; as a consequence the majority of the studies are oriented towards countries situated on the two continents. Beside the low level of payment and poor working conditions, which are common drivers of emigration, the high HIV prevalence rate is associated with the emigration of physicians. The result is a vicious cycle: the risk resulted from carrying for HIV/AIDS patients increase the emigration of medical professionals, which increase the number of deaths caused by the virus (Bhargava and Docquier, 2008).

Research on medical brain drain in Romania is scarce, only a few studies investigated the factors affecting the emigration of physicians. The most important factor is the low level of payment, followed by the poor working conditions, the lack of opportunities for career development, the lack of social recognition and the low esteem (WHO, 2011). According to a study realized in 2011 by Romanian College of Physicians (RCP), more than a half of Romanian doctors are totally unsatisfied by their salary, while 25.52% are unsatisfied. However, other studies conducted by RCP identified as main determinants of emigration the absence of job openings, difficult working conditions and the lack of respect for their profession. Drăgoirișteanu (2008) added the constant aggression from mass-media and the lack of support from the community regarding the working conditions and transport. According to other sources (Vasileu, 2010), 88% of 106 medical doctors practicing in France and Ile-de-France declared the socio-professional factor as the main representative in the decision of emigration.

The main push and pull factors influencing the decision to emigrate are synthetized in Table 1.

The choice of the destination country is influenced by a set of factors which are not related to the medical profession: shared language, shared or similar culture, shared or similar education curriculum, mutual recognition or similar qualifications, geographical proximity, contiguous boundary or ease of travel, pre-existence of a migrant community (Buchan, 2008). The specific requirements regarding the recognition of the qualification and diplomas obtained may also represent a factor in the decision of emigration. European Union’s members usually recognize each other’s qualification in order to stimulate the cross-border mobility (Buchan, 2008).
Main push and pull factors

<table>
<thead>
<tr>
<th>Push factors</th>
<th>Pull factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low pay (bad salary scale)</td>
<td>Higher pay (attractive salary)</td>
</tr>
<tr>
<td>Poor working conditions</td>
<td>Better working conditions</td>
</tr>
<tr>
<td>Lack of resources in the health system</td>
<td>Better resourced health systems</td>
</tr>
<tr>
<td>Limited career opportunities</td>
<td>Career opportunities</td>
</tr>
<tr>
<td>Limited educational opportunities</td>
<td>Provision of post-basic education</td>
</tr>
<tr>
<td>Impact of health status of population/poor health indicators*</td>
<td>Political stability</td>
</tr>
<tr>
<td>Unstable/dangerous work environment</td>
<td>Travel opportunities</td>
</tr>
<tr>
<td>Economic instability</td>
<td>Aid work</td>
</tr>
</tbody>
</table>

Source: adapted from Buchan (2008).

3. Research design

This exploratory study aims to identify the main determinants of the decision to emigrate among medical doctors. The target population consists in Romanian physicians (trained in Romania) with an international work experience (currently working abroad or those who worked abroad and returned in Romania). The questionnaire contains different types of items: single choice, multiple choice questions and open questions and it was administrated online, among specific groups of physicians, for a period of three months, using the snowball technique.

The survey collected information about the participants’ socio-demographic characteristics, the push and pull factors, the return intention, the role of diaspora and the remittances. The current paper focuses on the determinants of the decision to emigrate, the results for the other aspects explored being presented in a different paper. Data was analyzed using SPSS 19.

This study is based on a sample of 90 respondents who returned complete and usable questionnaires. Socio-demographic characteristics of the respondents are presented in Table 2. The mean age is 33.11 (Standard Deviation=7.41), with a minimum age of 24 years and a maximum of 55. Most of the respondents lefted the country at the beginning of their career (66.67% students/resident physicians), conclusion that is not new, the profile of the emigrant including young and dynamic people, not married or married but without children, leaving the country in search for better salaries, career opportunities or better resourced health systems. The sample contains 34 men and 56 women (medical profession is dominated by women), 26 general practitioners and 64 specialists, graduated from 6 out of a total of 12 medical universities existing in Romania: UMF Bucharest, UMF Timisoara, UMF Iasi, UMF Craiova, UMF Constanta, UMF Cluj. Destination countries include: France (30 respondents), Germany (24), UK (10), Spain (10), Belgium (8), Sweden (6) and USA (2).
Determinants of medical brain drain in Romania

**Table 2**

<table>
<thead>
<tr>
<th>Socio-demographic characteristics of respondents</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age: Mean, SD</td>
<td>33.11</td>
<td>7.41</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>34</td>
<td>37.77</td>
</tr>
<tr>
<td>Female</td>
<td>56</td>
<td>62.22</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married with children</td>
<td>22</td>
<td>24.44</td>
</tr>
<tr>
<td>Married without children</td>
<td>18</td>
<td>20.00</td>
</tr>
<tr>
<td>Not married</td>
<td>46</td>
<td>51.11</td>
</tr>
<tr>
<td>Divorced</td>
<td>4</td>
<td>4.44</td>
</tr>
<tr>
<td>Status on the labour market</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed in the private system</td>
<td>10</td>
<td>11.11</td>
</tr>
<tr>
<td>Employed in the public system</td>
<td>16</td>
<td>17.77</td>
</tr>
<tr>
<td>Unemployed</td>
<td>4</td>
<td>4.44</td>
</tr>
<tr>
<td>Student/Resident physician</td>
<td>60</td>
<td>66.67</td>
</tr>
<tr>
<td>Specialization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Practitioner</td>
<td>26</td>
<td>28.88</td>
</tr>
<tr>
<td>Specialist</td>
<td>64</td>
<td>71.11</td>
</tr>
</tbody>
</table>

Source: Author’s calculations using SPSS.

The predominant category of income (47.1% of the respondents) is 1000-2000 RON, corresponding to the salary received by a resident physician in Romania. 35.3% of the respondents mentioned that the salary received in the country of destination is included in the category 3000-4000 EUR (depending on the destination country), up to 10 times more than the salary received in the country of origin. Judging by the period of time spent abroad (82.85% of the respondents work/have worked abroad for less than 3 years), the difference in the level of payment could not be justified by the experience accumulated.

After the accession to the European Union, Romania became one of the most important exporters of medical doctors. The data set compiled by Bhargava, Docquier and Moullan (2010) revealed that between 1991-2004, 82.25% of Romanian physicians emigrated to four destination countries: Germany, United Kingdom, Sweden and France. After 2007, Germany, United Kingdom and France maintained their top positions, but other countries like Italy and Belgium attracted a high number of medical doctors (WHO, 2011). The analysis of the destination countries mentioned in the present study is not relevant for the trends mentioned in the literature in this domain, due to the fact that the questionnaire was distributed among specific groups of doctors. However, some important results may be obtained regarding the factors that influence the medical doctors to choose a destination country against another.
4. Results

The analysis of the main determinants of the decision to emigrate (Table 3) reveals that working conditions and resources from the health system (high performance medical equipment, sanitary materials and medicines available) are the most important, followed by level of payment. Career opportunities is also an important factor of emigration, ranked on the fourth position. The opportunities of specializing abroad in domains that in Romania are not available are of less importance. So does the social recognition of medical doctors. Although between the four main drivers of the decision to emigrate the differences are relatively insignificant, the results of this study are consistent with the findings of decision makers from Romania, according to which Romanian doctors’ emigration is not mainly influenced by financial determinants.

Other factors mentioned by some respondents include: the medical insurance offered in the destination country and the poor quality of the medical system in the country of origin, with the mention that these are isolated cases.

The choice of a specific destination country (Table 4) is made according to a set of factors, among which the most important are: better resourced health systems, the level of payment in the medical sector in the destination country and the language skills. Factors as personal relationships (relatives or friends already living in that country), geographical proximity (when choosing an European country against USA), the existence of bilateral agreements between Romanian universities and universities from the host country - especially in the case of students or resident physicians - and previous experience gained through participation in medical conferences, internships or periods of temporary work in the receiving country influence to a smaller extent the decision to emigrate.

Table 3

<table>
<thead>
<tr>
<th>Main determinants of migration</th>
<th>Responses Percent</th>
<th>Percent of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of payment in the medical sector</td>
<td>18.24%</td>
<td>77.14%</td>
</tr>
<tr>
<td>Working conditions</td>
<td>20.27%</td>
<td>85.71%</td>
</tr>
<tr>
<td>Career opportunities</td>
<td>16.89%</td>
<td>71.43%</td>
</tr>
<tr>
<td>Resources in the health system</td>
<td>20.27%</td>
<td>85.71%</td>
</tr>
<tr>
<td>Specialization opportunities</td>
<td>12.84%</td>
<td>54.29%</td>
</tr>
<tr>
<td>Social recognition/Self esteem</td>
<td>11.49%</td>
<td>48.57%</td>
</tr>
<tr>
<td>Total</td>
<td>100.00%</td>
<td>422.86%</td>
</tr>
</tbody>
</table>

*Dichotomy group tabulated at value 1.

Source: Author’s calculations using SPSS.

Other factors mentioned are: social and economic safety, medical insurance available, climatic conditions, lack of discrimination, professional environment, easy accommodation. An analysis of the factors for each destination country reveals that language skills are considered very important for medical doctors choosing as destination country UK, France, Belgium and
Spain. Level of payment is appreciated by doctors whose choice is Sweden and UK, while better resourced health system are considered to have UK, Germany, France and Sweden. Previous experience and personal relationships are of great importance for those choosing France, respectively Belgium. An analysis of the income category shows that the better payment plays a crucial role for medical doctors choosing Sweden and UK, countries where they can earn up to 10 times more than in Romania. However, the bilateral agreements between universities and the historical relationship between countries act as decisive drivers of the emigration to France and Belgium. However, only 20% of the questioned individuals responded that their decision of emigration was based on a previous experience in the destination country.

Another aspect of the study concerns the barriers against emigration (Table 5) and their influence on the emigration process. Using a five point Likert scale, ranging from “Very important” to “Very unimportant”, we determined the importance accorded to obstacles: medical doctors from the sample consider that the recognition of their studies from the country of origin is the most important aspect that could have determined them not to emigrate, followed by the financial costs of emigration (including accommodation and transport in the destination country, other expenses related to the change of address) and the linguistic barriers.

<table>
<thead>
<tr>
<th>Factors influencing the choice of the destination country</th>
<th>Responses</th>
<th>Percent of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographical proximity</td>
<td>5.81%</td>
<td>14.71%</td>
</tr>
<tr>
<td>Local language knowledge</td>
<td>19.77%</td>
<td>50.00%</td>
</tr>
<tr>
<td>Personal relationships (relatives, friends)</td>
<td>11.63%</td>
<td>29.41%</td>
</tr>
<tr>
<td>Bilateral agreements between universities</td>
<td>5.81%</td>
<td>14.71%</td>
</tr>
<tr>
<td>Previous experience (medical conferences, internships, temporary working)</td>
<td>8.14%</td>
<td>20.59%</td>
</tr>
<tr>
<td>Level of payment in the destination country</td>
<td>22.09%</td>
<td>55.88%</td>
</tr>
<tr>
<td>Resources from the health system</td>
<td>26.74%</td>
<td>67.65%</td>
</tr>
<tr>
<td>Total</td>
<td>100.00%</td>
<td>252.94%</td>
</tr>
</tbody>
</table>

*Dichotomy group tabulated at value 1.

Source: Author’s calculations using SPSS.

Psychological cost of emigration (accommodation to the new environment, the leave of family and friends) isn’t perceived as of great importance because most of the respondents are young and not married. Getting the work or residence permit or the lack of information regarding the labour market in the destination country are less important as all of the respondents have found a job abroad prior to leaving Romania.
Although the below analysis identified the fear regarding the recognition of diplomas and studies in the destination country as the main aspect that could have hindered the emigration, all of the respondents said that their studies have been totally or partially homologated: 80% beneficiated of a complete recognition, the rest of the respondents specifying that their years of specialization weren’t recognized in the receiving country (most of them leaved Romania before obtaining their specialization).

Another attempt of this study was to obtain a rank of the push and pull factors with influence on the decision to emigrate. In this respect, the seven push factors proposed were ordered as follows by the respondents in our sample: low pay (rank 1), poor working conditions (rank 2), lack of resources in the health system (rank 3), limited career opportunities (rank 4), lack of society’s respect/low self-esteem (rank 5), limited educational opportunities (specializations not available) (rank 6) and political and economic instability (rank 7). Chi-Square analysis reveals that respondents’ opinions for being pushed by limited career opportunities and lack of respect/low self-esteem did not differ significantly (Chi-square=5.600, p-value=0.469)

Furthermore, among the seven pull factors proposed, better working conditions, better educational opportunities, travel opportunities/better life, opportunities for medical education/specialization and political stability in this order. The mirror image of the push and pull factors is respected in the ranks, with few exceptions. The analysis of the Chi-Square test reveals that respondents’ opinions did not significantly differ for the following factors: higher pay (Chi-square=10.400, p-value=0.109), better resourced health system (Chi-square=10.771, p-value=0.056) and opportunities for medical specialization (Chi-square=10.000, p-value=0.125). However, significant differences exist in the ranking of the other factors: better working conditions, better career opportunities, political stability and travel opportunities/better living.
5. Conclusions and limitations

The aim of this exploratory study was to identify the main determinants of the decision to emigrate among medical doctors in Romania. The conclusions are consistent with the scholars’ statements existent in the literature.

Although the gap in the level of payment between Romania and destination countries is significant, a policy measure proposing the increase of the physicians’ salaries would not solve the emigration issue. Better working conditions and access to high performance equipment instigate Romanian physicians to emigrate. Career prospects and specialization opportunities play also a significant role in the decision-making process. In this respect, the major preoccupation among policy makers in the health system should gravitate around the implementation of a set of adequate measures.

The aim of this paper was to determine the causes of the emigration and to raise an alarm concerning the disastrous consequences on economic growth and national security. The main limit of this study is the sample size, which makes the generalization of the results impossible. Other limits are linked to the methodology used and to the push-pull model of migration itself.

Further research may include exploratory studies among last year students in medical universities or young practicing physicians in the attempt of identifying the intention of emigration.

As a general conclusion, this study confirms one more time the weaknesses of the Romania health system, which push the medical doctors to emigrate.

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About the author

Irina BONCEA is a PhD student at the Department of International Business and Economics, Bucharest University of Economic Studies. Her research interests include international migration, especially skilled migration and brain drain. Her doctoral thesis investigates the effects of brain drain phenomenon in the Romanian health sector on human development indicators.
Abstract. This paper presents the factors that influence the consumer behaviour of individual users of software products and services from Braşov County. An analysis of the end users’ attitudes, opinions and consumers’ behaviour regarding the purchase and use of software applications was made. A survey among the citizens of Braşov municipality was undertaken and the results of this quantitative research indicate a new orientation of the individual consumers towards aspects such as higher interest in software products’ functionalities, online purchase of software applications, or even a high interest in other aspects that concern the stores, the traders’ attitude and the price level of these products and services. Almost 400 persons, residents of Braşov municipality, took part in the research. The survey was conducted through a questionnaire that included questions regarding the use of hardware and software products, the purchase and the factors that influence the users’ decision process, and questions regarding features of software products and stores, as well.

Keywords: software, hardware, marketing research, consumer behaviour.

SOFTWARE CONSUMER BEHAVIOUR AND ITS COMPLEXITY

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1. Introduction

Software products have a high degree of complexity and, for the production and usage of these products the producers and consumers must adopt very complex strategies. These products are high technology goods and their life cycle is a short one. The technology is evolving very fast and the software producer must come up with new, improved versions of their products in a very short period of time.

Another aspect that differentiates software products from the other high-tech products consists of the position of interdependence of these products with the hardware goods. A software application, an operating system or a software program cannot be used without the simultaneous usage of a hardware product (a personal computer, a laptop, a smart-phone). One of the most important aspects for consumers when purchasing software products is the compatibility of these products with the hardware products they use. (Katz and Shapiro, 1983) The interdependence function between the software and hardware proves that these products are complementary, and if a hardware product is acquired, then automatically, a software product, such as an operating system, an office suite, or even an antivirus-program is required and needed (Mahajan et al., 2000).

2. Literature review

Software is an intangible economic good, with no physical form, its utility or value being not even perceptible in another form (Kittlaus, Clough, 2009). If you want to buy a word processing or spread-sheet application, you will think long and hard about whether to buy the product of a small provider, which is not very widely used, or whether to turn to the market standard. Buying the program that is most prevalent offers distinct advantages, e.g. in the possibilities for swapping files, helping one another solve any problems that may arise (Linde, Stock, 2011).

Compatibility is also an important aspect when it comes to software purchase. It is the ability of a software program to run on a specific computer system. Compatibility is also the ease of the transfer of data or programs between computer systems – and the ability to interface without special adaptors or other devices and depends on both the computer hardware and software, including the operating system (Koreneff, 2005). Also, Katz and Shapiro (1983) developed an oligopoly model, with the “network externalities” effects, which proofs that consumer’s value a product more highly when it is “compatible” with other consumers’ products. Full software and hardware compatibility means that all software and hardware components are interchangeable and work the same in the original or in the compatible machine (Godfater’s Computer Syndicate, 1986). In the end, a superior standard can eventually win over the incumbent, even more if it applies marketing strategies like a lower price or an advertising campaign to increase market share (Liebowitz and Margolis 1996). Brand affinity and reputation are strong emotional factors when choosing software as well (Elastic Path Software Inc., 2012).

Firms can make good profits from a few people who are prepared to pay a lot extra to get exactly what they want, or from a lot of people who are prepared to pay a little extra to get what they want. The most profitable segments, of course, are those which have many members who are prepared to pay a high extra premium for the benefits of a product which more exactly meets their needs. The computer software industry follows exactly this approach. The production cost of software is huge in terms of setting-up costs; writing new software takes many hours of
highly skilled and highly paid work. Once the software is written, though, the cost of putting it onto CDs is tiny by comparison (Blythe, 2008).

When it comes to the attitude of the consumers, most scholars agree that attitude is “a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object” (Fishbein and Ajzen, 1975). Affective and cognitive attitudes have been found to contribute independently to overall consumer attitudes (Kim, Morris and Swait, 2008). Affective and cognitive attitude significantly influenced overall consumer preference for computer software (Kim and Morris, 2007).

In recent years, multiple research studies have shown a large orientation to the online distribution channel for the consumers. Online software transactions have become increasingly less illegal, and the complexity of trading software online has become increasingly lower. This is due to the appearance of software as a service (Guo et al., 2011) which is gaining ground with the significant increased number of vendors moving into this space and the recent success of a bunch of leading players on the market (Sun, Zhang, et al., 2007). The commercial use of the Internet is still increasing, and online shopping becomes more and more a part of our day-to-day life (Van Noort et al., 2008, p. 59).

3. Research methodology

The general hypothesis from which this research started was as follows: as the literature review shows, in the past years a change in the consumption behaviour of the individual users has been recorded, especially when it comes to online sales. The home users are now adapting to new ways of purchasing software products and services, including the online channel, very fast and they have a greater orientation towards the complexity of the software products and services. To see if these changes took place on the local software market, we interviewed more than 400 people.

The main purpose of this paper is to obtain information regarding aspects such as: percent of the individual users from Brașov city that use a personal computer or a laptop, if the home users from Brașov think that the price of software products and services is too high and to what extent these users are influenced by factors like opinion of close relatives or friends, opinion of specialists in this domain, price, attitude of retailers and so on.

Other aspects connected to the behaviour of consumers considered in this research regard (1) attitude towards the aspects such as utility, user interface, compatibility with hardware products, language or functionality and (2) the locations from where the end users can purchase the software applications or programs they wish.

The researched population consisted of all residents of Brașov municipality with age over 15 years. This means 248543 people (131516 women; 117027 men) according to data from Brașov County Statistics (2011). The sample unit is the household where the interview was taken and the observation unit is considered the individual interviewed. For obtaining accurate information, the sampling method used was the random sampling method. A group sampling in steps was combined with a systematic sampling method.

The operationalization of the questionnaire was performed using the SPSS software program and the results presented in this paper were obtained using several methods of descriptive, bivariate and multivariate analyses as shown in the following chapters.
4. Research findings

As the results of the research show (Figure 1), only 22.22% of the respondents do not use a personal computer or a laptop.

![Figure 1. Usage of hardware products among respondents](image)

Most of the respondents use laptops (32.58%) and the percentage of personal computers and laptops users is of 24.24%. We can observe that in the usage of personal computers, the percentage of respondents using only PCs is of 20.96%.

When it comes to comparing preferences for the use of personal computers and laptops of consumer groups differentiated by household monthly net income, we see major differences between those who have a net monthly household income of less than 3000 lei and those who have a net monthly household income over 3000 lei (Table 1).

### Table 1: Independent Samples Test for users by income

<table>
<thead>
<tr>
<th>Products used</th>
<th>Levene's Test for Equality of Variances</th>
<th>t-Test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>51.7</td>
<td>.000</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>-6.3</td>
<td>.000</td>
</tr>
</tbody>
</table>
The analysis shows that the variances between the two groups of users are not equal. This result is shown by the value calculated which is much lower than the significance level of 0.005. As a result, we must admit that there are significant differences between the two groups of users when it comes to the usage of hardware products. These results are strongly supported by the ANOVA test performed, as well. These results lead to the conclusion that income affects the consumer buying behaviour in terms of hardware and software products and services, the higher the income, the greater the number of software products used by the respondents.

The users’ orientation toward purchasing software products and services shows that 22.8% of respondents use browsers at home for surfing on the Internet, 20.6% of respondents use office suites and over 15% of respondents use multimedia software products. A percentage of 10.5% of respondents stated that they use computer games, while 6.2% say they use specialized software at home as well.

When it comes to the buying behaviour of the end users, most of the respondents declared that they prefer to buy a personal computer or a laptop with a preinstalled operating system (68.8%). 58.3% of respondents are cautious and confirm that, when buying a new personal computer or a laptop, they buy antivirus products as well. Also, when it comes to purchasing new software products, respondents confirmed the hypothesis that they are influenced when purchasing and using software products by the job they have, 65.3% of respondents agreeing with this statement.

The issue of the importance of software products’ performance shows that more than 57% of the respondents consider this feature very important, 24.2% of the respondents gave it four out of five, 13.1% gave it three out of five (on a scale from 1 to 5). Only 5.7% of the respondents consider the performance of software products as not important in the moment of purchase.

When it comes to the place where respondents purchase these products, 57.9% of them prefer to purchase these products from specialized stores and 25.6% of respondents prefer online specialized stores for these purchases. Only 19.8% of respondents do not attach so great importance to the software acquisition, 11.5% preferring to purchase software products from shopping centres and 8.3% from cash & carry stores.

When individual users wish to purchase software products or services, they take into account many aspects of these products, such as the store of purchase or other influences. As it can be seen in the following figure (Figure 2), the highest score was given by the respondents to the price of the software products and services (52.2%). This feature is closely followed by the attitude of the trader and than the software and hardware compatibility.

The next results show that 75% of the respondents agree with the fact that the software products and services have a high price. Only 7% of the respondents do not agree with this affirmation and 34.7% of the respondents are neutral when it comes to this aspect.

Next it can be seen that, when an individual consumer wishes to purchase a software product or service, in the majority of the cases a few steps in the consumer decision process are avoided, forgotten or even ignored. Only half of the respondents identify a problem, a need. This result is explained by the fact that software products or services are not always a necessity, but rather a whim or a desire. More than 70% of the respondents search information regarding the product they wish to purchase and over 80% evaluate the available options before taking the final step.

Following a factorial analysis of the correspondences between the main features of a software product and services and the age of individual users, the results show that the young
users with ages between 15 and 19 years consider all the four mentioned aspects as being very important. (Figure 3) Young users aged between 20 and 29 years consider that the functionality of a software product is the most important one. For respondents in the age range 30-39 years, the most important feature is the language used in the application, while the respondents aged between 40 and 49 years take into consideration the users’ interface to be the most important one. End users with ages exceeding 50 years confirm that the most important feature of software products and software for them is the ease of use. (Figure 3)
The most used source of information when it comes to software products and services is the Internet, followed by the opinion of specialists. 41.7% of the respondents have chosen Internet as the main source of information and 27.4% have chosen as main source of information the opinion of specialists. The next place is taken by the opinion of relatives or friends. The responses given by the interviewed individual users rank books and journals last, only 4.9% of the respondents confirming that they use this resource for finding information about the products they wish to purchase.

5. Conclusions

The quantitative marketing research conducted and the results obtained led to a number of conclusions worth considering by software retailers in their future marketing policies.

It is very important that, for software producers, out of the main features of a software product or service, the most important one remains the user interface. In the top of the respondents’ preferences are also: functionality, ease of use and the language used in the application. Strong influence on individual users can be found in terms of age and occupation. For young people, the user interface is important, for people over 30 years, it is the functionality and for those over 40 years the ease of use.

As a final conclusion, this research highlights the specific features of software products and service, but also the specific features of the individual users’ consumer behaviour from Braşov. The level of software piracy remains a high one and a difficult problem to solve.

The results of this research may lead to new marketing plans at local level that must involve, in partnership, software producers, software retailers and local media which can have a very important role in the promotion of software products and services and the information of the general public.

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Abstract. Business excellence strikes as state-of-the-art topics within quality management literature. In the past the focus was on total quality management as the main driver in this field. Nowadays the number of scholars who show an enlarged interest for the implementation of business excellence models has considerably increased. Our study aims to assess the business excellence dimension for a sample of Romanian companies. We had included in this sample 67 companies varying in size, legal type and business sector they were serving. Having as a starting point the European Foundation for Quality Management (EFQM) business model we developed a questionnaire that allowed us to measure nine dimensions of excellence. Some of our preliminary findings are contradictory to the results obtained by researchers in other counties showing a long-term orientation of the Romanian companies. They seem to focus mainly on partnership development, customer orientation and human resources development whereas business results are not emphasized that often. The implications of our findings could be of utterly importance for both scholars and managers as they fill in the existence gap of business excellence in Romania.

Keywords: business excellence, EFQM model, total quality management, Romanian companies.

BUSINESS EXCELLENCE IN ROMANIA: SOME PRELIMINARY FINDINGS

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1. Introduction

In the present time, when the competition between companies reaches maximum peaks, it is of utterly importance for companies to strive to become the best in their fields of activities. All these changes have forced companies to reconsider their way of doing business and their approach to customers, society and environment.

Companies no matter their size, market or business sector have engaged in a constant pursue of excellence. Currently there are many business excellence models that are implemented worldwide with the main aim of helping companies to improve their performance (Vokurka et al., 2000; Cauchick, 2001). Most of researches on business excellence have focused on western economy, thus leaving the rest of world unexplored. In Romania the studies undertaken on this subject are quite scarce; scholars have been interested especially on elements related to business excellence, like quality assurance or social responsibility (Olaru et al., 2011).

Our paper is an attempt the fill in the existing gap regarding the studies of business excellence in Romania. Thus, the main goal is to offer an image of the current situation regarding the implementation of a business excellence model within a sample of Romanian companies.

The paper is organized as follow. It starts with the literature review part, within which we have tried to clarify the concept of business excellence and highlight the existing link between excellence and quality management. Then, the research methodology is described in detail followed by a presentation of the main results. The paper concludes with several implications that are useful for both researchers and practitioners interested in the field of business excellence.

2. Literature review

For a long period of time, total quality management (TQM) has been used by the managers of both private and public companies to improve profitability. Recently, one could easily acknowledge the proliferation of other concepts that tend to overcome TQM. Business excellence (BE), for example is a concept frequently used today (Klefsjö et al., 2008).

Fadić (2007) argues that evolution of quality management concepts has started at the beginning of the 20th century. Whereas TQM addresses both production and service provisions, business excellence makes a connection between the needs of the customers and the improvement of product quality and the organization as a whole.

There are several factors that have contributed to the development of business excellence in the past years. The first one is related to a normal tendency that exists among scholars; this refers to a certain preference that they might have for new concepts that seem to be much more fashionable in respect to the older ones.

Secondly, business excellence encompasses other dimensions that were not covered within the TQM models, such as societal responsibility or financial status.

There is common agreement on the fact that business excellence is the next step after TQM for the success of the company within its competitive environment (Mele and Calurcio, 2006; Vora, 2002). The main feature of business excellence lies in its ability to measure simultaneously the satisfaction of different stakeholders (Kanj, 1998). In fact, the definition
Business excellence in Romania: some preliminary findings

provided by the European Foundation for Quality Management, states that “excellence is the outstanding practice in managing the organization and achieving results. Excellent organizations are those that strive to satisfy their stakeholders by what they achieve, how they achieve it, what they are likely to achieve and the confidence that have that results will be sustained in the future” (EFQM web site).

Companies can assess their business excellence performance through the use of business excellence frameworks (BEFs). According to Saunders et al. (2008), there are two BE models that have been adopted in many countries; the first one is the Malcom Baldrige National Quality Award (MBNQA) and the second one is the European Foundation for Quality Management (EFQM) excellence model. Approximately 50 nations are using the MBQA criteria to measure excellence, whereas 25 nations are in favour of the EFQM excellence model and only 5 nations are making use of other BEF that are tailored to suit particular business and cultural context of the nations to which they apply (Grigg and Mann, 2008). Some scholars use the term European Business Excellence Model when referring to EFQM excellence model (Vorria and Bohoris, 2009).

The BEFs are administered by national organizations, called “custodians” (Grigg and Mann, 2008). The MBNQA, for example was established by the US government and it is currently administrated by the National Institute of Standards and Technology, whereas EFQM was founded by 14 of the leading Western European businesses (Politis et al., 2009).

Regardless the type of BEF, they all follow similar procedures for the assessment of the companies. The advantages of these BEFs for the companies are quite evident. Some of these benefits refer to a certain degree of credibility for the companies’ stakeholders, solutions that are tailored to specific companies and situations and possibility for obtaining results in a faster and more efficient way.

However, none of these BEFs are exempted from scholars’ criticisms. One of the very first disadvantages that are associated to them is that they are rather prescriptive and general making them hard to be used by different companies with different needs. These kinds of issues are visible especially when trying to implement such models in small and medium sized companies (SMEs). Singh et al. (2008) consider that SMEs cannot sustain their competitiveness if they have to focus on certain aspects of their functioning and work in isolation.

3. Methodology

To better serve the aim of our paper, we opted for a quantitative research based on questionnaires. The questionnaire was designed based on EFQM excellence model and it addressed questions related to business excellence. It consisted of two parts; the first part included factual questions about the companies, like the name of the company, the sector of activity, the size of the company (measured by the total number of its employees) and the second part consisted of 31 statements referring to the nine dimensions that could be seen in the EFQM excellence model. The nine fundamental concepts of excellence can be summarised as follows: leadership, customer focus, strategy, learning and innovation, human resources development, partnership development, process management, business results and corporate social responsibility. A total of mean scores was computed under each dimension to the see the relative importance being given to them.
The respondents were asked to assess their agreement regarding the nine dimensions of business excellence using a five-point Likert scale. The scale ranged from 1 (strongly disagree) to 5 (strongly agree).

The research was conducted in the period of April to May 2013. The questionnaire was administered with the help of master students in their last year of studies from the Faculty of Economics and Business Administration in Cluj-Napoca. The questionnaire was addressed to the top management of the companies. The sample contained companies varying in size (micro, small, medium large or very large), legal type (limited liability companies, public sector institutions), profit and non-profit type. We were able to collect 67 correctly answered questionnaires. The data was analysed using the statistical package SPSS 16.0. In the next section, the main results of our study are highlighted.

4. Results and discussions

We have included 67 companies in our survey from various domains of activity. In order to find out the companies compliance to business excellence thirty one statements were used; the respondents were asked to indicate whether they agree or disagree with these statements based on a 5 point-Likert scale. The reliability of the scale was tested through Cronbach’s alpha coefficient in SPSS (see the results in Table 1). Cronbach’s alpha is the most common used measure of internal reliability; it is most commonly used for multiple Likert questions. Within our study Cronbach’s alpha was 0.909 showing a high level of scale reliability. The thirty one statements were divided into nine groups, each of these groups representing different dimensions of business excellence.

<table>
<thead>
<tr>
<th>Scale reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of cases</td>
</tr>
<tr>
<td>67</td>
</tr>
</tbody>
</table>

Mean scores have been calculated for the items comprised within each dimension and afterwards a total mean score has been computed for each of the nine dimensions of business excellence. The results with the total mean scores for nine fundamental concepts of excellence are presented in Figure 1 and then they are presented in descending order of the mean scores.
Figure 1. Average scores for the fundamental dimensions of business excellence

The results presented in the above figure point out that the highest mean score was obtained for the variable “partnership development” (4.56). This dimension consisted of two elements that referred to: (1) long term relationships that are one major goal of the companies (Mean score: 4.55, Std. dev.: 0.65) and (2) development of win-win relationships with the business partners (Mean score: 4.57, Std. dev.: 0.60). This is a striking result as it is quite different from other studies undertaken within this field of interest. For example, Samardžija and Fadić (2009) when studying the business excellence model in Croatia found out that partnership dimension obtained the lowest score from all variables in the model (3.81).

The next dimension of the business excellence according to the mean score for the Romanian sample was “customers focus” (4.49). This is quite a normal and predictable result. Those companies that are striving to be excellent performers in their businesses focus mainly on satisfying the needs of their customers when they design products and services (Mean score: 4.63, Std. dev.: 0.57) and they motivate their employees to promptly respond to customers’ expectations (Mean score: 4.58, Std. dev.: 0.63). At the same time, companies are showing a high interest for getting information necessary for assess the satisfaction of their customers (Mean score: 4.25, Std. dev.: 0.74). Romanian companies are well aware of the important role that customers are playing for their success. Customers focus is recognised as a distinctive element of quality within modern organizations. These days it is worth considering a customer focus instead of a product focus which seems to be more and more reluctant (Rosen et al., 1998).

In the last year, researchers considered that is necessary to include in the business excellence models a new dimension that of corporate social responsibility. In fact, this is one of the elements that differentiate between total quality management models and business excellence models. Our survey showed that Romanian companies that were included within our sample put a high emphasis on these activities on these kinds of activities (4.29). The social responsibility dimension has been computed through three variables: (1) company’s ethical behaviour towards employees (Mean score: 4.23, Std. dev.: 0.71); (2) company’s ethical behaviour towards business
partners (Mean score: 4.48, Std. dev.: 0.63) and (3) the importance of corporate social responsibilities’ activities for the company (Mean score: 4.10, Std. dev.: 0.87).

The next dimension of the business excellence according to the mean score was “leadership” (4.28). The leadership dimension was assessed through five variables. These variables dealt not only with the efficiency of the communication process between the management of the company and the employees (Mean score: 4.40, Std. dev.: 0.60) and the knowledge of the management team (Mean score: 4.32, Std. dev.: 0.52), but also with other leadership skills that proved to be essential for the success of a company, like the ability to implement changes (Mean score: 3.80, Std. dev.: 0.72), types of relationships based on trust between employees (Mean score: 4.28, Std. dev.: 0.64) and the values of the company (Mean score: 4.56, Std. dev.: 0.55). One weakness that has been revealed by the respondents was the lack of skills of managers to deal with change processes.

For the human resource dimension we were able to obtain a mean score of 4.28. The employees are one of the most important assets for any company. Those who understand and treat their employees accordingly to this will be able to reach excellence within their businesses. Excellence in business through employees is achieved if the company makes a priority out of trainings and development (Mean score: 4.25, Std. dev.: 0.70), this will lead in the end to better skilled employees that could perform the tasks that had been assigned to them (Mean score: 4.37, Std. dev.: 0.60). The motivational variable got the lowest score (Mean score: 4.06, Std. dev.: 0.85) out of the three variables showing that there room for improvement when it comes about different ways for motivating the employees.

For the next three dimensions – process management (4.08), learning innovation (4.10) and strategy (4.13) – the results are fairly similar. Process management can be of utterly importance for the future development of business excellence. Process management involves the procedures that exist within a company and also the knowledge of the employees about these procedures. Learning and innovation are critical for the research and development activities. The level of learning and innovation portrayed in a certain company can offer an approximate image of their future success. This dimension has been measured in our survey using four variables. One interesting finding in respect to these variables is that the Romanian companies are not interested in creating a culture of innovation as they do not sustain innovative ideas coming from their employees (Mean score: 3.79, Std. dev.: 1.00). This is seen as a critical mistake; the employees can be a very good source of new ideas that can be exploited by the company representatives in a much more efficient manner. The strategy dimension was appreciated through three variables. Even though the companies are implementing a certain type of strategy (Mean score: 4.10, Std. dev.: 0.78) this is not known by every in these companies (Mean score: 3.95, Std. dev.: 0.84).

Finally, the lowest mean score was obtained for the results dimension (3.87). Five variables had been used to calculate the business results dimension and for all this the mean scores were below 4.0. The variables that we included were: increase of customers’ satisfaction (Mean score: 3.89, Std. dev.: 0.78), increase of employees’ satisfaction (Mean score: 3.94, Std. dev.: 0.71), increase of suppliers’ quality of products and services (Mean score: 3.77, Std. dev.: 0.91). Quality management is strongly connected to the degree of satisfaction and organization provides (Ionescu and Bratosin, 2009). Other variables referred to: company’s profitability in comparison to other companies (Mean score: 3.83, Std. dev.: 0.82) and the increase of key performance indicators (Mean score: 3.94, Std. dev.: 0.88).
5. Conclusions

Our research introduced the concept of business excellence and it tried to fill in the existence gap from the devoted literature. So far, there have been very few attempts to study business excellence in a Romanian company-oriented context. Previous studies focus on particular issues of the business excellence, but no one ever tried to bring together all dimensions required by the business excellence model.

The empirical findings of our survey are important for both theoreticians and practitioners. Our analysis revealed several striking results. Contradictory to other studies, our findings showed that the Romanian companies focus partnership developments and do not put a high emphasis on business results. According to this, we can conclude that the Romanian companies have rather a long-term orientation supported by their increased preference for customer satisfaction, human resources and partnership development, rather than a short-term orientation which is generally supported by immediate business results. Several improvements can be done in order to achieve better levels of business excellence. Companies should make a focal point out of motivational techniques for their customers. At the same time, they should create and sustain an organizational culture that will foster a climate of implication from employees that could take part in the innovation process.

The results of our study should be seen in the light of their limitations. These limitations are due to the small number of companies that had been included in our sample. A future avenue of research will integrate more companies and will also try to differentiate between companies from different business sectors.

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Abstract. The SMEs financing issue in the current post crisis context has changed. The access and the new financing conditions complicate the restart of engines of the development for all types of firm’s activity. The paper presents an analysis of possible innovative financing solutions, particularly for SMEs. The use of these instruments is beneficial not only for SMEs, not only for short or medium period but also it results a multiplication effect with impact on the economy. In the case study an innovative application called Financial Monetary Fund and based on the concept of supply chain management SCM (FFSCM) is presented.

Keywords: Small and medium-sized enterprises (SMEs), innovative financial instruments for SMEs (InFI-SMEs), Financial Monetary Fund based on Supply Chain Management (FFSCM), innovative projects, liquidity.

ASPECTS REGARDING THE EFFECTIVENESS OF INNOVATIVE SOLUTIONS FOR EARLY STAGE SMEs FINANCING IN EMERGING MARKETS

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Challenges for the Knowledge Society (2013) Vol. 8, Special Issue, pp. 79-86
1. Introduction in SME financing

There exists a wide literature on the SME financing, but the efficiency of implementation of these new procedures and mechanisms is still far from our wishes. The difficulty of the access to finance and the actual conditions of finance (cost of finance), represents a significant obstacle to growth and governments should take new measures to overcome this problem.

The main elements for this market failure of the SME financing segment are related to the fact that the demand is influenced by the ability of management (options and capability to present the opportunities) and on the other side the underdeveloped supply with an exaggerate focus on loans. On the demand side the entrepreneurial education and business planning (SMEs are situated on an unfavorable segment in the life cycle model of development) are important but on the supply side mediation and relationship lending are critical (competitiveness in money markets, moral hazard, adverse selection).

In SME financing we can see a typical informational asymmetry (the investors could not understand the actual risk-return-liquidity, but also the financial intermediaries are not interested in low scale financing) that maintained an immaturity of this market characterized by reluctance to small but innovative projects, illiquidity and propensity to insolvency in the context of scalability of investment (the fragmentation of financing is accompanied by high fixed costs). There is a paradox here. The possibilities of SME financing is part of a natural dynamic in which the projects in different situations are matched with the type of finance to be accessed (relationship short term lending, business angel networks, venture capital, private equity), but in real life a preference for debt financing persist that limits development and brings tensions frequently in relation with financial intermediaries.

Venture capital (VCs) or Private equity (PE) solutions are still difficult to use in emerging markets such as financial structure, the use of financial leverage involve a sophisticated local investors and diversification of the existing business. In the literature there are presented two waves of PE firm transactions: throughout the 1980s, based on financial leverage as a way to reduce agency cost, but also the fiscal costs, and a second wave, until the recent global crisis, based on a more market orientation and professional guidance.

The innovative financial instruments (InFIs) represents applications of the governmental support based on loans, guarantees, equity/quasi-equity investments or participations, or other risk-based instruments (optionally combined with grants). The interest is to obtain specific policy objectives and to boost investment in some dedicated strategic domains. The basic principle of InFIs is the use of a smart combination of grants with equity/loans in a way that reduces the overall cost and risk. InFIs should be based on markets and competition in order to provide and to develop opportunities via a natural access to finance based on performance. In addition InFIs are well adapted in the case of risky but high return investments because they cover a part of the associated costs and risks, removing old rigid standards.

In this paper a financial fund for emerging markets or countries with low developed capital markets inspired from the concept of Financial Supply Chain Management (FSCM) is also proposed.
Aspects regarding the effectiveness of innovative solutions

2. The processes of financing with innovative instruments

The available funds for investments are limited and, in this case, there is a natural orientation towards the main European priorities: SMEs, energy, climate change, transport, growth and employment, research, development and innovation.

The innovative financial instruments (InFIs) represents the governmental support provided from the budget (loans, guarantees, equity or quasi-equity investments or participations, or other risk-bearing instruments, optionally combined with grants) in order to address a set of specific policy objectives and to boost investment in prioritary domains. The functioning principle of InFIs is based on a combination of grants with equity/loans in a way that reduces the overall cost and risk. Therefore InFIs support competition and performance, providing opportunities to the real economy through increasing the access to finance in a natural, stimulating way, with multiplication effect. In addition InFIs are well adapted in the case of risky but high return investments because they cover a part of the associated costs and risks, removing old rigid standards.

In Europe InFIs are designed according to EU strategic objectives and are properly implemented. The financial instruments that combine EU-budget support with loans from financial intermediaries (like EIB/EIF-European Investment Bank/ European Investment Fund) could be effective in the sectors where there are distortion in markets as infrastructure, R&D and small and medium-sized enterprises (SMEs). Collaboration and transparency as essential elements of InFIs have direct implications on performances of the processes of activating of funds for the different levels of risk segmentation of markets, the realization of indirect benefits which support the expansion of regulatory interventions and the types of financing.

3. Aspects regarding the effectiveness to use innovative instruments for SMEs

First, it is presented the current situation of InFIs concept and application on the European level highlighting the importance of this concept, applicability, advantages, disadvantages, implementation and development possibilities.

The European Multiannual Financial Framework (MFF 2007-2013) uses 23 InFIs representing €500 million per year or 1.3% of the EU budget. This is not a critical mass, but InFIs could be very effective in the case of top quality projects (we consider here the financial performance, the added value but also the leverage) stimulating competition and innovation on the segments of interest. Therefore the applicability of InFIs on SMEs financing is dedicated to innovative firms but also to start-ups. Through design, InFI-SMEs could contribute decisively to mitigate market failure in the context of offering solid management basis. In addition there are also other significant advantages like: InFI-SMEs provide a special capability to avoid market failure or sub-optimal investment situations; combination of grants (to reduce the overall cost and risk of projects) and loans supports the development in an innovative mixture (this approach permits the build of new indicators like credit rating for projects); high multiplier effect (in the process of recovery from the recent crisis and turbulences); strong added value in the context of a good matching with EU policy objectives; reduced level of risk.
The main mechanisms of InFIs-SMEs offered by EU are the following:

a) instruments for internal policies - managed by the European Commission: equity and guarantees for innovative SMEs and microfinance; Risk-Sharing Finance Facility (RSFF) for research and innovation (innovative SMEs could benefit in this case); Competitiveness of enterprises and SMEs (COSME); the Project Bonds Initiative (PBI)

b) instruments under shared management (Structural and Cohesion Funds) with the European Regional Development Fund (ERDF) and the European Social Fund (ESF);

c) financial instruments for external action- guarantees for EIB lending.

In all of these types of InFI-SMEs the project selection process is based on the following elements: eligibility (the matching between beneficiary and the investment programme), bankability, the added value, the capacity to implement, the propensity to realize a critical leverage (total investment/contribution) and the use of state of the art technologies. For the period 2014-2020 the focus will be also on: the minimum requirements for the ex-ante assessment; the combination of support to final recipients (through grants, interest rate subsidies, guarantee fee subsidies and financial instruments); a set of specific rules on eligibility of expenditure and the types of sub-activities which may not be supported through financial instruments; a better treatment of private investors (there are also considered Public Private Partnerships); a better estimation of leverage/multiplier ratios; the use of specific parameters for selecting bodies to implement innovative instruments; transparency in the process of transfer and management of assets.

4. Applications of the concept of InFI-SMEs

Our focus is still on SME financing including innovative SMEs and start-ups. In the case of the Risk-Sharing Finance Facility (RSFF) which is proposed in collaboration with the EIB, there exist a lot of examples for large firms but unfortunately it did not sufficiently support SMEs. There still exists a lack of understanding of the mechanisms of mixed SME financing and the processes associated to the actual markets. For the next period, the Risk-Sharing Instrument (RSI) for highly innovative SMEs and small mid caps, in collaboration with the European Investment Fund (EIF) is expected to improve the financing support of small firms.

The new lines of SME assistance are represented by the Competitiveness and Innovation Programme (CIP) with two InFIs operating as part of the Innovation and Entrepreneurship Programme (EIP): the High Growth and Innovative SME Facility (GIF) and the SME Guarantee Facility (SMEG), both managed by the EIF. The focus will be on the loan guarantees, micro-credit guarantees, and equity guarantees and securisation (guarantees for financial institutions to support debt financing for SMEs)

The programme Horizon 2020 will also assist SMEs by expanding the Risk-Sharing Instrument and will integrate the GIF for seed, start-ups and early-stage SMEs that are presently in the CIP by using a selection based on competitiveness. This is very important because it is addressed to a large share of SMEs situated in a disadvantage area of private interest. On the other hand will be launched the Project Bonds initiative design to attract funds from more conservative long-term investors, such as pension funds will function based on two tranches: a senior tranche issued as bonds to institutional investors and a subordinated tranche
Aspects regarding the effectiveness of innovative solutions

dedicated to be underwritten by the EIB as a funded loan or a simple guarantee facility. Although as a mechanism this is very simple there is a disadvantage that funding fragmentation funding would significantly increase the management costs so it is quite difficult for SMEs to successfully use this tool. In this case, the scalability is essential and the lack of critical mass distorts the initiative efficiency for SMEs.

5. Case study: Financial Fund based on SCM (FFSCM)

This proposal is inspired from the concept of Financial Supply Chain Management (FSCM) and the specific mechanism of a simple monetary mutual fund. The objective of FSCM is to obtain visibility over processes (purchase to pay, order to cash cycles, process in ordering, invoicing, reconciliation and payment) in order to optimize these flows and to obtain cost savings. In addition FCSM permits an optimal access toward financing opportunities, the optimizing of working capital management (WCM) from an external point of view and an improved collaboration in the supply chain.

The main results of applying FCSM are: a better visibility over the processes involved in chain; reducing costs and increasing efficiencies throughout the chain; optimizing working capital by obtaining the dynamic global picture of funds; it sustains a collaborative approach.

On the other hand in the mutual fund industry, there is a large share represented by money market funds. Based on low risk assets these instruments offer acceptable returns together with very low volatilities. In addition the costs associated, represented by management fees are very low.

A Financial Fund based on SCM (FFSCM) will bring together the two concepts into an innovative instrument. It will result in this case a simple way to sustain SME financing. The government assigns the management to a financial intermediary specialized in the management of mutual funds. The founders are attending a certain amount (of the order of 10 to 20% of turnover). These funds and the amount paid by the government are placed initially in liquid instruments which are gradually used by the original members of the fund or by other SME’s clients. Unlike classical money market funds, the FFSCM use the available funds for short-term financing of working capital and for improving the cash flow of fund members. The applied interest rates are at the risk free rate level but it will be used a pay scale for encouraging a more rapid payment so that the resources should be accessed by all fund members who are asking for these loans. Unused funds are placed in financial instruments which are specific to the money market, resulting also a profit for the FFSCM members (a proposal may also be that the government funds should not benefit from these efficiencies).

6. Conclusion

InFIs are financial instruments that are based on innovation and competitiveness which are aiming the revival of financing some market niches considered unattractive to private investors. Through its conception, InFIs allows a natural and efficient expansion of public financing in terms of formation of a new attitude towards performance and risk. Although there are real chances to get high leverage the using of this instruments remains at a low level and it’s not yet the case of cancelling the use of other types of grant support, but
there is an effect of complementarities and synergy. By combining grants and loans, it results a unique mechanism to enhance the perceived performances of a project (cost-benefit, capacity to implement, leverage) which offers chances of success to projects avoided by private investors (because of market failures, financial barriers, difficulties in the valuation of intangible assets or future revenues). The use of InFI-SME makes possible a selection and also a performance stimulation starting from phase of proposal phase to closing and re-starting of investment cycle. The potential of InFIs is also expressed by the extension toward higher but controlled risks in the context of a higher leverage (a natural multiplier effect) and the capability to reuse and reflow future projects. All these dynamic processes are better understood both by the project management and the related programs management.

In order to improve the efficiency and the leverage of the InFI-SME it is important to use a suggestive set of capital requirements (to cover defaults) and to find a robust response to the problem of fund fragmentation. Another objective is to reduce the management fees and in this case it is necessary to improve the design of actual procedures regarding budgeting, award funding, monitoring, implementation, specific risk management procedures, solutions for high leverage, simplicity and transparency of reporting and accounting.

The paper presents a simple model of monetary financial fund in order to facilitate access to finance for SMEs in emerging markets characterized by low liquidity and underdeveloped capital markets. The grant/ project idea remains viable and it is represents the engine of competitiveness. It is created an interesting way to stimulate competition for projects, the expansion of this competition in the companies that require special funding, but they do not meet the innovativeness requirement. Future work should adress the study of the mechanisms of mixing of the components of grant funding or venture capital or private equity according to areas of interest, but also the level of oversubscription funds for SMEs.

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Abstract: The eating habits have met important changes lately, and the consumption of fast food products is, no doubt, an essential coordinate of this evolution. The fast pace of daily life associated with sedentary and convenience of young generations are factors favoring the proliferation of fast food restaurants, becoming fashionable, a „must have or do” in the international urban landscape. The fast food products were much analyzed and criticized regarding the negative impact on population’s health. On the other hand, it should be noticed the efforts of the companies in the field for giving up the unhealthy foods and introducing „healthy foods.” The attraction of fast food products is a reality of the contemporary world. In this article are shown the results of a quantitative marketing research with the topic „The consumption of fast food products among the young people from Brașov” for capturing the habits and trends of young people from Brașov regarding the consumption of these products, respectively, when, how and in what conditions they choose to serve dinner in a fast food restaurant, and the factors influencing the decision to eat in a fast food restaurant.

Keywords: eating out, dining out, fast food products, fast -food restaurants, young generation.

THE CONSUMPTION OF FAST FOOD PRODUCTS – A CONSTANT EATING HABIT OF YOUNG PEOPLE FROM ALL OVER THE WORLD

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1. Introduction

There exists a popular assumption that our taste, expressed through the clothes we wear, the music we listen to and of course the restaurants in which we dine, is reflective of our truly individual personalities (Sloan, 2004). In postmodern society it is to a large extent mediated messages, from a range of genres, which influence our perceptions of food and drink related issues (Randall, 2000). The restaurants, and the consumer behavior which people help to sustain, are symbols of the shift to a postmodern society in which the pursuit of lifestyle is a widespread preoccupation. Culinary tastes not only an expression of individual preference, but a signifier of longing for social acceptance. In a world where global competition is increasing, we witness spectacular developments in the offer of products and services according to client requirements and the continued growth of the world as a whole (Madar et al., 2006).

2. Fast food consumption – an eating out habit

Consumers purchase ‘bundles of benefits’ with varying abilities to satisfy their needs (Kotler et al., 2006). Restaurants in particular have been described and conceptualized by many marketers as a product package where food and beverage is potentially only one small element. If consumers perceive an eating or dining out experience as a benefit bundle, they are likely to use multiple criteria when making purchase decisions, especially with high involvement purchases.

Hollenson (2003) divides these consumer choice criteria into four broad categories: cost, performance, social and availability attributes. Potential restaurant customers could consider purchase price or average cost of the meal in the first category, performance in terms of quality of the food and beverage or its taste in the second, reputation of a restaurant or its image in the third, and location or accessibility in the final category. Therefore, if consumers were selecting particular restaurants on the basis of whether the menu is reflective of their culinary taste, they would prioritize performance attributes in their selection criteria.

Fast food is that sector of the catering industry primarily concerned with the preparation and service of food and beverages quickly, for immediate sale to the customer. The catering outlets have a number of characteristics which are common to all these types of operations (Davis et al., 2008):
- they offer a limited menu range;
- the operation tends to focus around one product, namely burger, pizza or chicken;
- these operations cater mainly for the relatively lower average spend markets with lower prices being charged than those found in other food and beverage establishments;
- there is a low ratio of service staff to customers with many of these operations being a form of self-service; consumption of the food may be on or off the premises;
- less rigid meal times are observed by these establishments, with some form of menu usually available throughout the day;
- all aspects of the operation are highly standardized, leading to a high volume throughput with resulting economies in food, labor and other operating costs.

The research findings within this market sector indicate that cost and availability attributes are distinctly more important than performance attributes for consumers. While value is recognized within the marketing literature as a function of both price and quality (Lovelock
The consumption of fast food products – a constant eating habit of young people

et al., 1996), it is purported that price is becoming a more important consideration given higher levels of perceived quality when ‘eating out’ (Lee and Ulgado, 1997). The relative importance of convenience and speed of service can almost certainly be attributed to the environmental forces stimulating time poverty, whether real or perceived. The significance of the food and beverage component of the eating out benefit bundle appears to be less in this sector therefore than the dining out sector. Performance attributes and the actual food and beverage element of the meal experience appear to be of greater importance in customer purchase decisions in the dining out market. Nonetheless, within both dining out and eating out sectors the potential for commercial operators to adopt a product oriented approach and thus influence consumer taste has been clearly identified.

Restaurateurs have tried to gain competitive advantage by differentiating their offering from that of the competition, in a way that adds value to the consumer, whether or not this value is real or perceived. Both consolidation and the need for differentiation have in turn led to greater development of branded restaurant concepts.

A report has highlighted ten key food trends (Sloan, 2007). These include:

1. Economic pressures are encouraging more Americans to eat and cook more dinners at home. At the same time, however, eating out for breakfast and lunch is continuing to grow.
2. There is a growing ‘foodie’ culture and many customers are ‘trading up’ to more exotic and gourmet meals, both in restaurants and as indulgent treats to cook at home.
3. There has been a growth in pre-prepared convenient products, such as peeled and chopped, and even cooked, vegetables and upscale frozen dinners. Portion sizes are however reducing.
4. More foods with greater sensual appeal in both flavor, aroma and texture.
5. Increasing numbers of children but increasing awareness of child obesity and so interest in healthier options.
6. For adults, there is a trend towards foods ‘without’ – fat free, dairy free, sugar free, caffeine free and so on.
7. There has been a growing interest in locally sourced, seasonal produce from specialist or artisan producers, with a strong association with a reduction in food miles – the distance between the producer and the plate.
8. This is linked to an interest in more healthy eating, either to reduce the risk of developing a health problem or to help with an existing issue.
9. A new interest in unusual beverages, ranging from high energy drinks to ready-to-drink tea and coffee, and bottled mineral waters and even Health Colas.
10. Snacking and sharing extends from new snack offers in the mid afternoon and late at night growing in popularity in fast-food operations, to ranges of upscale bite size appetizers for sharing and even the appearance of bite size dessert platters.

The analysis of food consumptions of young people in this past decade has shown the occurrence of significant changes. The rise in consumptions out of the home can be explained by faster paced living and different work demands, in addition to the search for convivial opportunities outside of the home. In fact, the distance from the place of work, shorter lunch breaks, and the greater importance attributed to recreational activities have brought about increased spending in bars, restaurants and cafeterias, fast food restaurants, despite the economic crisis (Casini et al., 2013). Studies highlighted a strong interdependence between the external context and the internal psychological attitudes towards eating that translated into more or less health agency and control in eating behaviors. Students are eating out fast food at
least once a week despite the fact that all of them considered fast food to be an unhealthy choice (Dun et al., 2008; Mulvaney-Day et al., 2012).

Consumption of fast foods is very frequent among adolescents, external locus of control, rural living, availability, and convenience were identified as positive predictors of consumption frequency, whereas health awareness was a negative predictor (Monge-Rojas et al., 2013). Although causality between fast-food consumption and obesity has not been established, there is a clear positive association between fast-food consumption and energy intake, making individuals more prone to weight gain and obesity.

3. Research methodology

The aim of the quantitative marketing research with the title “The consumption of fast food products among the young people from Brasov” is to identify the attitudes, opinions and behaviors of young population from Brasov regarding the consumption of fast food products. In order to obtain more specific results, a poll and the random sampling method was used. The sample included 240 persons. The general assumptions of the organized research are the following:

- Young people in Brasov select fast-food restaurants as these units are more practical and provide quality products at affordable prices;
- Generally, young people from Brasov select fast-food restaurants as an affordable alternative to eat out;
- Generally, young people from Brasov prefer to eat in the fast food restaurants because of the pleasant atmosphere.

4. Results of the research

From the total number of 240 interviewed persons, a significant number of 92 (38%) has answered that the main reason for attending the fast-food restaurants is “affordable prices”. Following the answers received, it can be mentioned that there are also other reasons, such as the features of products offered and speed serving (as shown in Figure 1).

![Figure 1. The distribution of frequencies regarding the reasons for attending the fast food restaurants](chart)

- **Affordable prices**: 92
- **Features of products**: 85
- **Fast serving**: 51
- **Others**: 12
The consumption of fast food products – a constant eating habit of young people

With a total number of 163 answers for the two options offered of scale type “Neither high/Nor low” and “Low” representing a percentage of 68% from the total number of answers, it can be said that most of the respondents consider that the level of prices is moderate and affordable in relation with the features of products of fast food type, as noticed in Figure 2.

![Figure 2. The distribution of frequencies regarding the level of price in relation with the quality of products](image)

Analyzing Figure 3 it can be mentioned that most young people from Brasov are “Very satisfied” regarding the atmosphere from the fast food restaurants and “Satisfied” regarding their location. Concerning the diversity of fast food products most respondents have a neutral opinion.

![Figure 3. Distribution of answers regarding the consumption features in fast food restaurants](image)
Concerning the situations that justify the consumption of fast food products it can be noticed a balanced distribution of the answers offered by respondents: 32% of the interviewed persons consume fast-food menus as a choice for lunch, 28% prefer to meet in the evening with friends in a fast-food restaurant, 23% consider eating out in a fast food restaurant as a mean of entertainment in the week-ends, while 6% of the respondents prefer having breakfast in a fast-food restaurant (Figure 4).

![Figure 4. Distribution of answers regarding the situations that justify the consumption of fast food menus](image)

In Figure 5 is shown the distribution of answers regarding prices paid for the fast food products.

![Figure 5. The distribution of answers regarding the prices paid for the fast food products](image)
The consumption of fast food products – a constant eating habit of young people

With a cumulative percentage of 70% from the total number of answers it is revealed the fact that young people from Brasov have spent most of the time small amounts of money, at most 25 lei, at the last visit in a fast food restaurant, because of the low incomes of young people and low prices charged in this type of restaurants.

5. Conclusions

Following this research was found that the fast food products are preferred by young people as an affordable option, fast, served in a pleasant atmosphere, in a century of speed where money and time matter most. After applying the questionnaire to the researched population, it was determined that the main reason for the respondents to choose to attend the fast food restaurants is represented by the low prices charged. Also, most of the respondents consider that the level of prices is normal and affordable in relation to the quality of products offered. Although there is not a basic feature of the fast food restaurants, the diversification of menus is a way of increasing the interest of consumers for using the services of this units, and, in the same time, a way for increasing the loyalty, the competition in the field being significant. This finding results from the research, the existence of various menus being considered by the respondents as a weak point in the fast food restaurants’ activity. Also, the low level of available income of the young population brings the idea that the extreme limitation of menus removes the potential customers, because spending of free time in the last part of the day, together with friends is an important market potential. In our country, the consumption of fast food dishes is not the expression of the concept „eating out”, but a specific practice of „dining out”. In this framework, the introduction of a dinner menu is a possible diversification way.

The fears of the contemporary society regarding the proliferation of unhealthy food are important threats on the future of fast food restaurants. The adaptation to the requirements of this goals is a step marking their activity, the strong efforts in this respect being essential for the further success.

References


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Abstract: The purpose of this paper is to present some results in our research concerning intergenerational learning in the Romanian universities. We have been interested in the evaluation of the internal stakeholder’s awareness concerning implementing intergenerational learning tools in order to increase the level of organizational knowledge and the retention of knowledge from the old professors who retire. As a case study we shall present the Bucharest University of Economic Studies. We performed an age spectrum analysis at the level of the whole university, an evaluation of the team spirit at the level of a certain department, and an evaluation of the decision makers awareness concerning intergenerational learning as a process, and needs of implementing intergenerational learning tools in order to increase the knowledge level of the university.

Keywords: intergenerational learning, knowledge dynamics, knowledge retention, knowledge transfer, organizational knowledge.

INTERGENERATIONAL LEARNING IN UNIVERSITIES. CASE STUDY: BUCHAREST UNIVERSITY OF ECONOMIC STUDIES

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1. Introduction

Intergenerational learning (IGL) is a social process that facilitates knowledge transfer between two distinct age generations in order to stimulate organizational learning. Intergenerational learning contributes to the increase of the organizational knowledge level, to improve competences of younger generation, and to reduce the knowledge loss as a result of retiring old workers (Boström, 2003; Brătianu et al., 2011a; Brătianu et al., 2011b; Ropes, 2012; Sharpe and Hatton-Yeo, 2008). Intergenerational learning process is focusing more on tacit knowledge and competences that require experience and skills. The transfer is always done from people of higher level of knowledge toward people of lower level of knowledge, in concordance with the law of entropy (Brătianu, 2010).

The old paradigm of IGL is the family paradigm. As Hoff remarks, IGL has been for centuries a family process for “systematic transfer of knowledge, skills, competencies, norms and values, between generations – and is as old as mankind” (Hoff, 2007, p. 126). In this process, “Typically the elders or grandparents of the family share their wisdom and are valued for their role in perpetuating the values, culture and uniqueness of the family” (Sharpe and Hatton-Yeo, 2008, p. 31). This paradigm is losing its power in Europe and USA, but it is still very strong in Arab and Asian cultures.

The new paradigm is a non-family construct, and is based on organizational knowledge dynamics (Brătianu and Orzea, 2011; Brătianu and Orzea, 2012; Sharpe and Hatton-Yeo, 2008). According to Sharpe and Ye (2008, p. 32), “Fundamental to intergenerational programs was the expectation that the generational synergy evident in familial settings could be captured in social planning models, thereby, creating opportunities for IGL and the development of meaningful relationships among non-familial older and younger generations.” Intergenerational learning in organizations is an entropy driven process, since knowledge transfer through different mechanisms increases the organizational entropy and contribute to a better understanding of the decision making process (Brătianu, 2011; Brătianu and Orzea, 2012).

Universities are organizations structured on age generations. This characteristic comes from the fact that by tradition, academic activity and promotions lead to a hierarchical structure: assistants, lecturers, associate professors, and full professors. This academic structure induces an age generations structure. Thus, universities are the perfect setting for IGL process. However, knowledge sharing is a process driven by motivation and trust, and not by pure rational arguments. “Most people are unlikely to share their knowledge and experience without a feeling of trust in the person in front of them, they need to trust that the people will not misuse their knowledge, and to trust that the information that one receives is accurate and credible due to the information source” (Brătianu and Orzea, 2010, p. 108). Sharing tacit knowledge means also to overcome the stickiness barrier (Szulanski, 1995).

The purpose of this paper is to present our results in evaluation of the internal stakeholders awareness concerning IGL and its advantages in improving the university overall performance as a result of the entropy increase, results of our research performed for the SILVER Project. As a case study we consider the Bucharest University of Economic Studies. We performed this research in the period March – May 2013, after we got the formal approval of the rector of the university. The research program contains three different dimensions: (a) a scan of the age spectrum of the whole faculty staff of the university; (b) a scan of the team spirit and willingness of sharing knowledge at the department level, for a given department, and (c) a scan of the barriers of implementing IGL programs at the department, faculty and university levels. In the following sections of the paper we shall present only the age spectrum and the scan at the university level.
Intergenerational learning in universities. Case Study

2. Age spectrum

Scanning of the age spectrum of the faculty staff for each department is very important in order to identify the age generations and their relative importance, within each department. With the permission of the Rector of the University we considered all faculty staff of the university and made an analysis of their age and their academic position (assistant, lecturer, associate professor, and full professor). We compute the average age of the faculty staff at the level of each department and then the average age at the level of the university. Results obtained are presented synthetically below. Also, we asked for the total number of faculty staff who had to retire at 65 years old, as a result of the new Law of Education published in February 2011.

The total number of faculty staff retired in 2011 and in 2012 is 103. That means a huge loss of knowledge and experience at the university level.
The average age at the level of the university is 43.07 years.

The average age for each Faculty of the University

<table>
<thead>
<tr>
<th>No.</th>
<th>Faculty</th>
<th>Average age (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Business Administration</td>
<td>34.94</td>
</tr>
<tr>
<td>02</td>
<td>Finance, Insurance, Banks and Stock Exchange</td>
<td>39.46</td>
</tr>
<tr>
<td>03</td>
<td>Administration and Public Management</td>
<td>40.05</td>
</tr>
<tr>
<td>04</td>
<td>Marketing</td>
<td>41.27</td>
</tr>
<tr>
<td>05</td>
<td>Accounting and Informatics</td>
<td>42.20</td>
</tr>
<tr>
<td>06</td>
<td>Commerce</td>
<td>43.16</td>
</tr>
<tr>
<td>07</td>
<td>Cybernetics, Statistics and Economic Informatics</td>
<td>43.84</td>
</tr>
<tr>
<td>08</td>
<td>Economics</td>
<td>44.08</td>
</tr>
<tr>
<td>09</td>
<td>International Economic Relations</td>
<td>44.83</td>
</tr>
<tr>
<td>10</td>
<td>Food Economy and Environment</td>
<td>45.44</td>
</tr>
</tbody>
</table>

Just looking at these average ages at the level of faculties we may conclude what category of age is dominant in each faculty, and what should be the concern for IGL. For instance, considering the Faculty of Business Administration, we may say that the majority of the faculty staff is young, and there are very few older professors. The situation is reversed in the Faculty of Management, where there are very few young persons, and the majority is formed of older professors. Thus, IGL depends not only on the age structure of each faculty and department, but also on the relative number of individuals in each age category.

These differences in age categories reflected by the average ages shown in the above table can be explained as a consequence of the individual history of each faculty (for instance, Faculty of Business Administration is the youngest faculty of the university), and of different requirements for promotion of professors, which means stimulators or barriers in getting a better salary. This is a strong motivation to enter or not into the academic life in a certain domain looking for a full academic carrier.
The graphical illustrations presented in Figures 1 and 2 show that in the university we may distinguish practically four different academic generations which are comparable in size: assistants (preparatori + asistenti), lecturers (lectori), associate professors (conferentiari), and full professors (profesori). It is a very attractive environment for developing IGL throughout the university.
Intergenerational learning in universities. Case Study

Table 2

Comparison between the two extreme average age faculties

<table>
<thead>
<tr>
<th>Academic position</th>
<th>Faculty of Business Administration</th>
<th>Faculty of Management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of faculty staff</td>
<td>Age interval</td>
</tr>
<tr>
<td>Assistants</td>
<td>7</td>
<td>28-31</td>
</tr>
<tr>
<td>Lecturers</td>
<td>8</td>
<td>30-59</td>
</tr>
<tr>
<td>Associated Professors</td>
<td>3</td>
<td>36-43</td>
</tr>
<tr>
<td>Full professors</td>
<td>2</td>
<td>41-44</td>
</tr>
</tbody>
</table>

We have to mention the fact that in the category of assistants there are very few individuals with ages over 30, so we may consider that there exist actually a compatibility between age structure and academic structure, which means also between age generations and knowledge generations (by assuming that each academic position yields a knowledge generation).

3. Scan at the university level

For this organizational scan we considered that the best is to evaluate how decision makers think about age structure of the university and of the need for IGL. We developed a questionnaire based on that given in the SILVER documentation. We formulate similar questions but considering the specific context of the university. This Questionnaire has been given to all decision makers in academic life in the university: rector, vice-rectors, deans and vice-deans of faculties, and head of departments. In the Bucharest University of Economic Studies there is one rector, 6 vice-rectors, 11 deans of faculties, and 12 heads of departments. Thus, the total number of these decision makers is 30. Out of these decision makers we got valid answers from: 2 vice-rectors, 5 deans, 7 heads of departments that is 14 persons (46.66% rate of answering). Results are presented below.

UNIVERSITY QUESTIONNAIRE

1. Considering all faculty staff from the university, how would you define the age characteristics for each of the following groups of people:
   - Young people, with ages between: 23.78 and 37.35 years
   - Mature people, with ages between: 38.28 and 56.21 years
   - Senior people, with ages between: 57.14 and 68.57 years

2. Considering the three groups defined above (i.e. young, mature and senior people) how would you assign the academic position to them:
   - Young people: assistants and lecturers
   - Mature people: lecturers, associate professors, full professors
   - Senior people: full professors

3. Knowing that in your university there are different age generations, how would you consider the process of IGL to be:
   - (a) nonexistent
   - (b) existent but not significant – 78.57%
   - (c) existent and significant – 21.43%
4. If you consider that in your university there is IGL, what are in your view the most important forms of its manifestation:
(a) the older people assume themselves the role of mentors for the younger people – 57.14%
(b) intergenerational research teams – 85.71%
(c) workshops with participants from different age generations – 28.57%
(d) organizing training programs for the young people – 14.28%
(e) inviting the old professors to deliver lectures and recording these events – 21.14%
5. What are in your view the positive effects of IGL, at the individual level of the faculty staff?
*Answers:* exchange of ideas; sharing experience; professional dignity; increased performance; sharing the academic values; continuity in teaching; professional synergy; increased quality of the teaching activity; transfer of good practices; learning a professional ethics
6. What are in your view the positive effects of IGL, at the university level?
*Answers:* institutional commitment; institutional excellence; scientific authority; increased university performance; a better working atmosphere; a better organizational culture; developing an institutional tradition; increased communication between generations; reducing conflicts between generations.
7. What are in your view the negative effects of IGL at individual and organizational level?
*Answers:* transfer of some bad practices in teaching students; inertia to some changes in the university life; lack of debates.
8. What are in your view the factors able to stimulate IGL at the department level?
*Answers:* open discussions for a better understanding of each generation; acknowledgements from your colleagues; common activities and projects; developing intergenerational communication; mixed age teams for teaching and research; organizing workshops with participants from different generations.
9. What are in your view the factors able to stimulate IGL at the faculty level?
*Answers:* organizing activities at interdepartmental level; complex research projects with participation from different departments and different generations; improving communications between departments; developing interdisciplinary projects.
10. What are in your view the factors able to stimulate IGL at the university level?
*Answers:* developing institutional projects; debates for university strategy with participants from different generations; organizing scientific conferences with participants from all generations; policy for career development; promoting professional values regardless the age of people; developing cooperation between different faculties and age generations.
11. What are in your view the main barriers in developing IGL at department level?
*Answers:* old mentalities; differences in work culture; too many activities and lack of time; lack of motivation from older professors; lack of interest from younger colleagues; a low level of salaries, especially for young colleagues.
12. What are in your view the main barriers in developing IGL at faculty level?
*Answers:* competition between departments; reduced interaction between teaching and research; lack of managerial experience from the dean and vice-deans.
13. What are in your view the main barriers in developing IGL at university level?
*Answers:* lack of some institutional programs for IGL; competition between faculties; inefficient research management at the level of university; lack of an institutional coherent strategy; too much bureaucracy; lack of an adequate organizational culture.
14. On a scale from 1 (minimum) to 5 (maximum) show how much importance could have implementing policies for stimulating IGL in this university. The average score is **4.07**
15. Evaluate your own implication in stimulating IGL at the department, faculty or university level in concordance with your managerial position. Very few consider that they have a significant implication in promoting IGL. Most of them have only random implications.

The conclusions we may get out of this analysis are the following:

(a) The first conclusion is that not all members of the Administration Council answered to this questionnaire, which means lack of interest for IGL and for our project, although the questionnaires have been promoted by the rector of the university.

(b) The second conclusion is that some of the respondents could not make the difference between the implications of IGL at the level of departments, faculties and university, in terms of factors to stimulate or not IGL. That means that although they have some academic managerial positions, they do not have the full understanding of their authority and duties.

(c) Many of them recognize that there are cases of IGL as a result of generosity of some old professors and interest of younger colleagues, but there is no policy and coherent strategies at the level of university, faculties and departments concerning promoting IGL.

(d) There is a lack of complex and interdisciplinary projects to ask for mixed age teams that could stimulate IGL in the university

(e) There is a bad salary system coming from the Ministry of Education that is not able to stimulate people for doing more than their strict teaching and research duties.

(f) There is need for better communication at the interindividual level, as well as at the faculty and university levels.

(g) However, the level of awareness of the need of implementing programs to stimulate IGL is rather high, having an average (on a scale from 1 to 5) of 4.07. Most of the respondents consider that their implication is occasional and not part of a certain institutional strategy.

4. Conclusions

Intergenerational learning is a social process that increases organizational learning and the overall performance of any organization by increasing the knowledge level and the organizational entropy. In universities, the academic structure based on assistants, lecturers, associate professors, and full professors induces four age generations. This age generation structure is a perfect setting for IGL. However, IGL is a process driven by individual motivation and trust. In order to transform this rather singular process into an organizational one it is necessary a high degree of stakeholders awareness, able to stimulate adequate policies and strategies.

The purpose of this paper is to analyze the stakeholders awareness in universities, and to present our results in the case of the Bucharest University taken as a case study. With the approval of the rector of the university, we performed an age spectrum analysis and a scan at the university level. From the first intervention we got the age configuration of the university, and from the second one we identified the most important barriers in implementing IGL.

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Abstract: In an accounting system with a lot of regulations, in which entities are offered the possibility to choose out of a series of options as regards the presentation of operations in accounting, in a system in which the information users’ decisions mainly rely on what the financial statements reveal, it is to every company’s interest to have as good an image as possible, an image which should open new ways for development. These are elements which could lead to the application of creative accounting, by manipulating accounting values, in compliance with accounting laws and standards in effect. Creative accounting is a topic of widespread interest worldwide; in Romania, there is evidence that the relationship with banking institutions, fiscal authorities and third parties are focused on.

Keywords: creative accounting, norms in accounting, ACCA, IFAC.

THE ACCOUNTING PROFESSION BETWEEN NORMS AND CREATIVITY

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1. Introduction

Considering that the role of accounting is to set the result obtained into order and acknowledge it, according to the principle adopted by Luca Paciolo, “ubi non est orde, ibi confusio”, the object of accounting has been approached, researched and improved over time. Given the economic development of production, trade and services, accounting has always been considered a social science as well, which has extensively influenced people’s existence.

Under the impact of the changes occurred in the economic environment, accounting has passed from a primary form to a complex one, able to meet the ever more diverse requirements of the accounting information users, thus turning into an information system which has implications even at the level of the distribution of the entire economy.

It is well known that in the relationship with third parties, each entity is interested to exhibit as good an image as possible, so as to gain the clients’ and suppliers’ confidence and to develop the business. Taking into account the fact that the basic financial data found in the balance sheet and in the profit and loss account are public information available at any moment on the site of the Ministry of Public Finance, but also on different business portals, the image these statements reflect must be an “embellished” one. Furthermore, there are banking institutions and organizations of worldwide repute, as for instance Dun & Bradstreet, which offer very detailed information for analysis, starting from a company’s financial data.

Creative accounting, also referred to as “aggressive accounting”, represents the manipulation of accounting values, in compliance with the accounting laws and standards in effect, but, despite this, against the spirit of providing a true and fair view of the company. The phrase can also be encountered in different specialized papers under the name of intent-based accounting or imaginative accounting, being considered a tool for the management of the entity, in the sense of selecting that information that supports the stakeholders’ interests.

2. Accounting norms worldwide and in Romania

Given the process of international accounting harmonization and convergence, there are actions conducted by international political organizations, multinational companies and strongly industrialized countries, accompanied by important auditing firms, mainly of Anglo-Saxon origin, which most of the time succeed in imposing their model.

The International Federation of Accountants (IFAC) was established on the 7th of October 1977 and represents the world organization of the accounting profession, collaborating with 164 full and associated members from 125 countries and jurisdictions to protect public interest. The Organization encourages accountants worldwide to implement high quality practices, while members and associates comprise 2.5 million accountants involved in public practice, industry, trade, academic environment. The body of the accounting profession cooperates with the academic environment for an education aimed at achieving the competences necessary for becoming a chartered or a certified accountant, in accordance with The International Education Standards released by IFAC.

Another important body in the world is The Association of Chartered Certified Accountants (ACCA), which is a professional organization homologated by the member states of the European Union and by the United Nations Organization, with the headquarters in Great Britain. It started operating in 1904 as an association of the accountants from London, extending over time to other countries.
The accounting profession between norms and creativity

As a normative science, accounting is based on three categories of norms:
- norms referring to the practice of liberal accounting (professional ethics, deontological conduct, independence);
- general norms deducted from the accounting objectives and principles, starting from which the harmonization of the accounting practice is aimed at nationally and internationally;
- norms connected to details which need to be considered when accounting techniques are applied and quality controls performed on accounting information by accounting auditors or other bodies.

These norms have been devised considering accounting objectives, postulates and principles, and the evolution of the accounting profession, contributing to the enhancement of the usefulness of the accounting information and of the trust between business partners, who rely on this information for decision making.

In Romania, where the continental model is applied, accounting is strongly influenced by legislation, commercial code, accounting practices being very descriptive and practically restricted by the fiscal one. Instead, the legislation does not bare the same importance in the Anglo-Saxon system, the laws setting only the limits beyond which an operation is considered illegal, as accounting practices are established by accountants, especially in the private sector, and then generalized. The pragmatic spirit of the British has left its mark on the European continent, through the introduction of the concept of truthful image, by offering additional information which invites account producers to transparency.

3. Manifestation of creative accounting in Romania

The creative accounting techniques change over time, due to the transformations in the accounting standards, to the legislation in the field. Many of the points added to accounting standards aim specifically at blocking the openings by means of which accounts can be manipulated, which involves that those interested in such operations need to find new ways to cope with this. However, at the same time, changes may bring about new opportunities for implementing creative accounting.

Whereas in big countries, such as the USA, creative accounting is encountered especially in corporations, in Romania it can be mainly found in the relationship with banks, financial authorities, third parties.

Thus, one of the strategies an entity could resort to refers to the improvement of the elements found in financial statements and, implicitly, of the economic and financial analysis that ensues, so that the reliability reflected in figures should be superior to what happens in reality. Companies act this way with a view to altering their financial results and position, to producing a misleading impression on the performance of the activities they conduct.

Historically speaking, accounting in Romania has been guided towards providing information towards a single user, namely the state (represented by the Fiscal Administration and the Government). As regards the relationship with the Fiscal Administration, the companies’ interest is to diminish the contributions and taxes payable as much as possible. Thus, for instance, the possibility to offer dividends to employees and maintain a minimum salary for them, as compared to offering a higher salary proves to be more profitable because the quantum of the profit and dividend tax is lower than that of the contributions payable by the employer for each employee of the company. As the analysis conducted by the big auditing and accounting firms in Romania reveals, even though the taxes corresponding to salaries (both those of employees and those of employers) have not increased over the recent years, the salaries went up due to the growth of the tax base. This situation has been generated by taxing
other earnings than those from salaries, and by taxing collaborators in the same way as in-house employees.

At the same time, considering the present context al normalization, where there are several options to reflect the same transaction, the result obtained is not objective. Choosing a norm or option out of a series of available possibilities influences the financial statements and the accounting profit and loss. For instance, applying the FIFO method can generate a higher profit, considering the fact that the entry price of the products had an upward trend. This has implications over the manifestation of creative accounting as regards the three types of relationships in Romania: banks, financial authorities, third parties. In a strict sense, the whole of the accounting options represents the accounting policy of the company.

In Romania, one of the creative accounting modalities practised by firms is that of not paying suppliers by voluntarily filing for insolvency. According to the minister of the Economy, only in 2013 this procedure has been used for over 15,000 companies on the local market. Since the beginning of the crisis, the return rate has been only 10%, to which the assets capitalized and the money retrieved by creditors should be added. Of course, the situation should not be generalized, as there are a lot of companies which file for insolvency as a result of the financial crisis and of the decrease in sales. The liability, in the case of this procedure, lies with the administrators, managers, censors and financial auditors. In the case of managers, the liability refers, for instance, to the following aspects:

- using goods, services, credits for one’s personal use and not for the company’s benefit;
- misappropriation of funds, not paying the sums representing the contribution for health insurance;
- trading for one’s personal use, under the cover of the legal person;
- paying advance money to partners for fictitious works, as it happens in certain situations triggering the insolvency procedure.

In this respect, the administrators, directors and managers have to become aware of the fact that they can be liable for their actions and choices as managers of their entities.

4. Practices in creative accounting

1. Premature acknowledgement of fictive earnings

Considering the importance of earnings in the profit and loss account, as well as their direct impact on the profit, the premature acknowledgement of certain earnings represents an important component of creative accounting. The company under consideration performs wholesale activities, and it also rents commercial premises to other economic agents. The rental period specified in the contract is one year, with the possibility to extend it. The cumulated value of all contracts for one year is 470000 lei. The starting date for the contract is 01.11.N.

The registration of the earnings should be done under the heading “deferred income”, which is to be reflected in the profit for the period encompassing the contracts, i.e. 12 months. The accounting registrations would be:

<table>
<thead>
<tr>
<th>a)</th>
<th>4111</th>
<th>=</th>
<th>472</th>
<th>480000 lei</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Customers”</td>
<td>“Deferred income”</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>b)</th>
<th>472</th>
<th>=</th>
<th>706</th>
<th>40000 lei</th>
</tr>
</thead>
</table>
The accounting profession between norms and creativity

“Deferred income” “Rental and royalty income”

\[
\frac{480000}{12 \text{ months}} = 40000 \text{ lei}
\]

c) \[
\begin{array}{ll}
706 & = 121 \\
40000 \text{ lei} & \\
\end{array}
\]

“Rental and royalty income” “Profit (loss) for the period”

However, the company registers the whole sum as rental and royalty income, influencing the period N with the sum of 400000 lei, earnings corresponding to the period N+1, which contradicts the principle of independence of the period.

a) \[
\begin{array}{ll}
4111 & = 706 \\
480000 \text{ lei} & \\
\end{array}
\]

“Customers” “Rental and royalty income”

b) \[
\begin{array}{ll}
706 & = 121 \\
480000 \text{ lei} & \\
\end{array}
\]

“Rental and royalty income” “Profit (loss) for the period”

If the company had registered only 80000 lei as rental income corresponding to November and December of the period N, the loss of the period would have been 270000 lei. As a result of the premature registration of earnings, the gross profit was 130000 lei. From the fiscal point of view, if the company did not have any non-deductible expenses, it would pay a profit tax of \(130000 \times 16\% = 20800\) lei.

Practically, the company improves its image for third parties, usually banks or other stakeholders, but it pays a profit tax which it should normally pay as earnings are evened in compliance with the rental agreement, and not at the end of the period N.

2. Understating expenses

If certain firms increase their profit by increasing earnings in a forced way, some others resort to the understating of expenses, which leads to the overstating of assets or understating of debts. The company X, whose line of business is represented by the production of footwear, owns three production departments: tailoring, sewing, re-shoeing. In the re-shoeing department, there are 12 machines with the ordinary operating time in compliance with the Twelve-year fixed assets Catalogue. They were purchased at the same time and have been used for three years, the amortization method used being the linear one. The board of the company considers that five of these machines have not been used at full capacity and decides to increase the remaining duration with three more years. The entry value for each machine is 22000 lei. The annual amortization quota calculated for each fixed asset from the re-shoeing department is:

\[
\begin{align*}
\text{CA(\%)} &= \frac{100}{12} = 8.33\% \\
Aa &= 8.33\% \times 22000 = 18326 \text{ lei}
\end{align*}
\]

The monthly depreciation calculated and registered in accounts for each machinery during the three years:

\[
\begin{array}{ll}
A1 &= 18326 / 12 = 1527 \text{ lei} \\
\end{array}
\]

\[
\begin{array}{ll}
6811 & = 2813 \text{ lei} \\
1527 & \\
\end{array}
\]
"Depreciation of non current assets” "Depreciation of plant and machinery, motor vehicles”
-----------------------------------------------------------------------
The net accounting value at the end of the three years
VNC = VC – VA = 220000 - 54978 = 165022 lei
As a result of the decision of the board, the duration for the economic use is changed for five of the machinery of the re-shoeing department, in the sense that it becomes longer than the ordinary depreciation duration. The effect consists in changing the annuity of the depreciation and, consequently, registering in accounts a smaller monthly value as regards depreciation. Thus:
Aa = 8.33 % * 165022 = 13752 as compared to 18326 lei
Therefore, a minus difference results of 4574 lei *5 machines = 22870 lei/year
Al = 13752 / 12 = 1146 lei /month

A significant change in the use or preservation of fixed assets can explain the revision of the depreciation duration, leading to a new depreciation cost for the remaining usage period.

3. Capitalization or direct registration as expense

There are situations in which, in order to decide which expense needs to be capitalized, it is necessary to resort to the professional rationale, so as to establish whether it is appropriate to capitalize it or register it as expense. If the option to capitalize an expense is chosen, new assets will be created, or there will be a growth in the value of the existing assets, which will be paid off during the whole ordinary operating period. Thus, the influence on the output will be a positive one by progressively registering the assets depreciation as expenses.

The company X which owns commercial premises in a three-store building performs repair and modernization works based on the administrator’s decision. Hygienization, painting, sanitation works are performed, but also additional ones to the original project. The total value of the works is 368000lei. From this, 125000 lei are used to increase thermal comfort (thermal insulation). In addition, in order to separate certain spaces with insulating boards, 36500 lei are used. Based on the professional rationale, an analysis should be performed for each type of expense in order to establish which works represent current repairs which should be registered directly as expenses of the period, and which ones should be capitalized. The company considers them all as expenses of the period, as follows:
--------------------------------------------------------------------
a) 611 = 3021 368000 lei
"Maintenance and repair expenses" “Auxiliary materials”
--------------------------------------------------------------------
Provided distinction and separation of expenses is made, it results:
--------------------------------------------------------------------
a) 611 = 3021 239350 lei
"Maintenance and repair expenses" “Auxiliary materials”
--------------------------------------------------------------------
The accounting profession between norms and creativity

b) 231 = 3021 128650 lei
   “Tangible assets in progress” “Auxiliary materials”

--------------------------------------------

c) 212 = 231 128650 lei
   “Buildings” “Tangible assets in progress”

--------------------------------------------

From the fiscal point of view, the option the company has chosen presents a two-fold impact. First of all, this refers to the influence on the profit tax, which diminishes. Secondly, according to the Fiscal Code, a company which performs modernization and refurbishment works for a building has to notify fiscal authorities about this to recalculate the tax on the building. The company board should have considered the principle of connecting expenses with earnings when making the decision, taking into account that endeavour, represented by expenses, need to be connected to accomplishments, i.e. earnings, each time this is reasonable and possible to do.

5. Conclusions

An overview of the business world and of its component elements reveals different preoccupations as regards the path accounting takes, economists playing the role of mediators in the arguments between different information users. Even though the regulation of accounting is relatively recent, the existence of rules has stimulated the devising of evading techniques, complying with the law. The ascertaining of the application of creative accounting will not impinge on the implementation of different procedures, on the contrary. That is why a series of measures needs to be taken to set limitations, such as:
- creating a conceptual accounting framework for a more thorough understanding of the accounting norms and for analysing complex operations;
- establishing an interpretation and/or mediation body;
- reducing the number of alternatives in choosing the accounting policies within the company, by altering certain regulations and norms.

In applying IAS/IFRS norms in Europe, the Anglo-Saxon spirit for bookkeeping raises worries for countries of Latin-origin. Their implementation here will require more complex interpretations, as the presentation and registration rules are coded by regulations. The greater the inflexibility and complexity of imposed norms, the more the ones targeted will attempt at finding solutions which support the accomplishment of the objective envisaged.

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Management & Marketing, Special Issue

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Abstract. The aim of this paper is to review the literature concerning the key factors affecting a post-merger organisation from the aspect of market orientation and organisational culture as a means of developing a conceptual framework. In the context of a large complex organisation (a Higher Education Institution), the literature indicates that there is a greater propensity for the emergence of subcultures. A number of external pressures are also found to impact upon the emergence of a market orientation. Through the findings a conceptual framework is developed which is to serve as a basis for further research.

Keywords: market-orientation, merger, organisational culture.

A CRITICAL REVIEW OF MARKET-ORIENTATION IN THE ORGANISATIONAL CULTURE OF POST-MERGER ORGANISATIONS

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1. Introduction

The purpose of this paper is to consider the issue of market-orientation within the organisational culture of post-merger organisations through a literature review as means of understanding the interplay between these variables, which can then be displayed as a conceptual framework.

In addition to this, this review seeks to examine the claims that organisational culture may be unitary, differentiated, deeply fragmented or a combination of these three as the complexity of an organisation’s culture may impact upon market-orientation, and this complexity may be further accentuated by a merger. Given the fact that so many mergers have and appear imminent (Richardson, 2010), it is crucial to build up a model for understanding the interaction of these variables and factors. One major practical contribution of this paper would be to provide insight for management into issues that require attention if such organisations are to continue towards their key goal of market-orientation as well as provide a certain degree of guidance and direction for future mergers.

2. Organisational culture: Cultural perspectives

Adopting a suitable cultural perspective is a suitable starting point for considering organisational culture and market-orientation as this considers the degree of complexity of the organisation. According to the integration or unitarist perspective, there is an essential unity of the organisation that allows the classification of organisation culture. This perspective also assumes top-down cultural leadership and Martin (1992) referred to this perspective as the integration perspective. However, Kuh and Whitt (1988, p. 27) point out that “the ‘small homogenous society’ analogue ... is surely strained when applied to many contemporary institutions of higher education”.

The differentiation or pluralist perspective recognises the existence of diverse subcultures in organisations (i.e. culture is heterogeneous) and as such, diversity management becomes a hot topic. According to Gregory (1983), large, complex organizations are likely to resemble the larger society in which they are situated and may, therefore, contain many of the same subcultures, or groupings of values, as would be found outside an organization. Martin (1992) refers to this perspective as the differentiation perspective and as such highlights the diversity and inconsistency that occurs within the notion of subcultures, thus allowing cultural diversity and accepting that conflict may exist between subcultures. Boisnier and Chatman (2002, p6) point out that this typology does not allow for subcultures to ‘co-exist within an overarching culture’ and that these differences in perspective reflect a conceptual division.

The fragmentation or anarchist perspective indicates an even greater level of fragmentation, with all organisational cultures being made up of individuals with their own values and norms and as such neither a single dominant culture nor any subcultures are said to exist. Hofstede et al. (1990) found this to be the case in twenty case studies. Martin (1992) refers to this perspective as the fragmentation perspective with fragmented groups being issue-specific and no shared meaning between members of the organization.

However, some research indicates a perspective which may combine these perspectives or consider additional factors. Schein points to the possibility of the co-existence of subcultures and a dominant culture when dealing with pivotal and peripheral values (Schein, 1988). Pivotal values are central to an organization’s functioning; members are
required to adopt and adhere to the behavioural norms derived from these values and are
typically rejected from the organization if they do not (Chatman, 1991; O'Reilly & Chatman,
1996). Peripheral values are desirable but
are not believed by members to be essential to an organization's functioning. Members are
couraged to accept peripheral values, but can reject them and still function fully as members.
Martin and Siehl (1983) developed a typology of organizational subcultures, including
enhancing, orthogonal, and counter cultures. Within the context of Shein’s pivotal and
peripheral values this subculture typology clarifies how subcultures can exist in an
organization without detracting from the strength of the overall culture as members may
embrace or reject pivotal and peripheral values within an organization. Further diversity in
subcultures can be seen in the study by Hatch (1997, p. 229), where subculture types can be
seen on a scale of increasing diversification:

![Figure 1. The diversification of subculture](image)

As can be seen in the above figure, an integrated culture is when the enhanced
subcultures are a part of the overall dominant organisational culture. Whereas in the
disorganised form of organisation, there is no dominant culture and subcultures have no
common values. Such cases may be found in certain organisations such as the army where
there are entirely independent units, but there is also some form of dominant culture leading
from the top.

It has been argued that in some of the strongest culture organisations, such as prisons,
pivotal values are so widely adopted that they restrict the emergence of peripheral values and
thereby, the emergence of subcultures (O’Reilly and Chatman, 1996; Van Maanen and Barley,
1984). However, as pointed out by Boisnier and Chatman (2002), this is less likely in strong
culture organisations in general where a set of pivotal values may be relevant to day-to-day
functioning and performance of tasks but also a set of peripheral values which are far less
important.

Martin (2002) indicates the most suitable approach to assessing organisational culture
may in fact be a combination of all three perspectives, this seems to agree with Schein’s work
referred to earlier in that a dominant culture may exist, with a variety of subcultures
(orthogonal, enhancing or counter) and not only this, but also areas of ambiguity and
uncertainty. This seems a realistic assumption mimicking the nature of culture in society, as
well as highlighting the complexity of organisational culture.
3. Complexity: The formation of organisational subcultures

Large, complex organisations are likely to resemble the larger society in which they are situated (Gregory, 1983), and thus subcultures can be said to be likely to exist and have been found to exist (Hofstede, 1998; Martin & Siehl, 1983; Trice, 1993). Subcultures are groups whose common characteristic is a set of shared norms and beliefs and as such, subcultures may be seen as ‘groupings of values’ (Boisnier and Chatman, 2002, p. 13). Meek (1988, p. 198) claimed that organisational cultures are not only created by leaders, but also managed and eventually destroyed by them. Such values may be fall into one of two categories: instrumental (the means to achieve certain ends); or terminal (concerning the end itself) values. This begs the question as to whether this is also the case for subcultures and if not, what scenarios are more likely to encourage the formation of subcultures within organizations.

The unity and homogenous nature has been questioned in various studies. For example, Parker (2000) claimed that staff identifies with different groups in the organisation and that such groups may be formed on the basis of age, gender or education as well as location, job description and length of tenure. Van Maanen and Barley (1985) define institutional subcultures as subgroups that regularly interact with each other, see themselves as a group within the institution, share a commonly defined set of problems and act on the basis of collective understandings unique to their group. It is on the basis of this definition that subcultures are assessed in this study.

According to Boisnier and Chatman (2002) there are certain characteristics (e.g. organizational size, task differentiation, power centrality, and demographic composition) that make some organizations more susceptible to subculture divisions than others. Subcultures are more likely to develop in bureaucratic, larger, or more complex organizations since these organizations are more likely to encompass a variety of functions and technologies (Trice & Beyer, 1993). With a variety of functions and technologies, professional groups may appear. Bokor (2000) found that subcultures were identified according to technicians (profession culture), customer oriented parties (market culture), business oriented parties (return culture) and a subculture of employees referred to as ‘small labourers’. Through these typologies it can be seen how the different interactions and values resulted in subculture formation:

The decentralization of power is another way of making organisations more susceptible to subculture formation. Martin and Siehl (1983) attributed the emergence of DeLorean’s counterculture at General Motors to their decentralized power structure while Hage and Aiken (1967) found that more decentralized power was associated with more professional activity and hierarchical differentiation.

Cohen (1955) claims subcultures are likely to form among members who interact often and who face similar problems, providing them with opportunities to exchange concerns about the existing culture and through interaction, build relationships. When individuals work together on a task, subcultures may also form as values may become specific to the task on which the group is focused (Trice & Beyer, 1993). Boisnier and Chatman (2002) suggest three criteria which are conducive to subculture formation and support these studies: 1) structural properties; 2) group processes; and 3) individual’s propensity to form and join subcultures. As with the development of subcultures in society, organisational subcultures can be said to exist when employees of a certain work group develop and adopt common norms and values that may not be in line with the dominant culture. One such example is provided by Boisnier and Chatman (2002): “a peripheral overall cultural value that favours individualism may be
A critical review of market-orientation in the organisational culture of post-merger organisations

dysfunctional for a team that requires close, interdependent teamwork to complete their tasks. Therefore, the team may adopt a different set of more collectivistic values...”.

Table 1

<table>
<thead>
<tr>
<th>Subcultures in the development process</th>
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<tr>
<td><strong>Return Culture</strong></td>
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<tr>
<td>Members</td>
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<tr>
<td>Self portrait</td>
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<tr>
<td>Perception of others</td>
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<td>Internal – external focus</td>
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<td>Attitude towards risk</td>
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<td>Time orientation</td>
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<td>Professional – task orientation</td>
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<td>Professional – business orientation</td>
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Organizational subcultures may be based on membership in various groups such as (Jermier, Slocum, Fry & Gains, 1991; Trice & Beyer, 1993): Departments; workgroups, and teams; levels of hierarchies, such as management versus support staff; professional and occupational affiliations; physical location in the organization; socio-demographic categories such as sex, ethnicity, age, or nationality; informal groups like those formed by friendships; performance-related variables such as organizational commitment and work performance. Hatch (1997) claims a similar set of factors: task interdependence; reporting relationships; proximity; design of offices and work stations; and sharing equipment and facilities. Barley (1986) points out that technical advancement does not always lead to alienation but can also positively change role structures, that subcultures may arise with competing ideologies, from staff rejecting existing subgroups or feeling rejected through blocked ambition, poor training, inadequate rewards, impersonal management or inadequate resources. Barley (1986) also found that career filters, especially among executives, such as promotion incentives can encourage formation of subcultures as uncertain performance criteria may lead to rejection by existing members. Maintaining the existence of subcultures can be affected by the social identity which acts as a binding force for the group (Levi 2001).

Yeung et al. (1991) found clusters of cultures within a single firm and developed typologies based on these culture types as follows: ‘Group culture’ with a high degree of
commitment, loyalty and tradition ("employee-oriented culture", Hofstede, 1990); Hierarchical culture with a large number of professional rules and policies ("profession-oriented", Hofstede 1990); Rational culture. Central to this culture was the accomplishment of tasks and goals. ("task-oriented" / "results-oriented", Hofstede, 1990); and Developmental culture with a strong commitment to innovation and development ("innovation-centred").

4. Market-orientation and organisational culture

Day (1999, p. 9) claimed that the climate of market instability and fierce competition have led to the increased need for a market-orientation for all organisations. Orientations began to take a new direction in the early 1980s with the emergence of Ouchi’s theory Z (1981) as elements of Japanese management were introduced. The change drivers in both public and private organisations are often cited as: globalization, economic rationalism and information technology (Burke and MacKenzie, 2002; Weber and Weber, 2001).

Kasper (2005) claimed that there is a link between strategy, organisational culture and the market-orientation of the organisation. However, researchers disagree on the values related to a market-orientation which in turn determine the culture. Kaspar (2005) characterises the market culture type as:

- Dominant attributes as competitiveness and goal achievement;
- Leadership style emphasising decisiveness and achievement orientation;
- Bonding to the organisation via goal orientation, production and competition;
- Strategic emphasis on competitive advantage and market superiority.

Narver and Slater (1990) see market orientation as an orientation towards the customer, the competitor, and interfunctional coordination. Kohli and Jaworski (1990) define the market orientation as intelligence generation, intelligence dissemination and responsiveness. A study by Cameron and Quinn (1999) was also based upon mechanistic and external positioning and the results indicated that market cultures were associated with the best performance. Using the six dimensions of Hofstede (1991), Kasper (2005) concludes that market cultures will be more pragmatic than normative (the 6th dimension) with customer needs taking priority above procedures and a strong external focus (on competition). Day (1999, p6) and Cameron and Quinn (1999) confirm the need for an externally focussed culture as part of a market orientation.

According to Kasper (2005) there are number of factors which are crucial to an organisation’s market orientation, such as the degree of openness. Furthermore it was found that the culture of a market-oriented organisation should be results oriented, employee oriented and professional. Hurley and Hurt (1998, p45) found a strong link between market orientation and innovation: “A market- and learning oriented culture, along with other factors, promotes a receptivity to new idea and innovation as part of the organisation’s culture (innovativeness)”.

Market-orientation may vary by degrees between organisations. Kasper (2005; 6) refers to “a scale ranging from being truly market-oriented to not being market oriented at all”. Hence the market orientation definition is: “the degree to which an organisation in all its thinking and acting (internally as well as externally) is guided and committed to the factors determining the market behaviour of the organisation itself and its customers” (Kaspar, 2005; 6). Although market orientation may not be the only source of competitive advantage, Day (1999) suggested that the following may be considered a means by which new information concerning trends in the market may be accessed: creating a spirit of open-mind inquiry;
analyzing competitors’ actions; listening to staff on the front lines; seeking out latent needs; active scanning of the periphery of the market and encouraging continuous experimentation.

5. The post-merger organisation

Berscheid (1985) claims, “the well-supported similarity-attraction paradigm suggests that individuals would prefer to be around others with similar attitudes, including perceptions of the organization and their jobs”. Using the example of mergers, according to Nahavandi & Malekzadeh (1988) the changing environment that is produced by mergers or acquisitions may result in subculture formation as members of the consolidated firm attempt to cling to their previous firm’s values. Furthermore, conflict arising from mergers takes many forms and according to Trice and Beyer (1993), subcultures may develop due to ideological conflict or even intentional countercultural movements. Taking this example of mergers, subcultures may also form through dissatisfaction or dislike for their leader, where groups have formed with other individuals in the organisation sharing feelings such as job insecurity, lack of trust in leadership and so on. However, Parker (2000) claims that subcultures within one organisation may in fact feel more unity with a corresponding unit in another organisation rather than the dominant culture of its own organisation depending upon how they see their own role and significance in the organisation.

The issue of cultural differences and ‘cultural fit’ has developed into a hot topic in the case of mergers (Lynch & Lind, 2002; Trompenaars & Wooliams, 2000; Weber, 1996). This refers not only to the integrating of national cultures but the integrating of two corporate cultures in a merger: Nahavandi and Malekzadeh (1988) claim that cultural integration requires intense contact between members the two or more merged organisations. Shreader and Self (2003, p. 511) refer to culture as ‘the make or break factor in the merger equation’. The effects of culture clashes can be extensive and far-reaching such as low level of commitment, trust, cooperation and a loss of productivity (Weber, 1996). However, this does not mean that the cultures have to be similar or the same, which could be foreseeable in the case of merging organisations, but rather the cultures need to be complementary (Buono, Bowditch and Lewis, 1985, Cartwright and Cooper 1993). Vaara (1999, p. 3) points out that there are many issues lacking in the consideration of the culture of post-merger organisations such as: “disregard of cultural differentiation, fragmentation, inconsistencies and ambiguities; lack of understanding of cultural permeability and embeddedness in the environment; overemphasis on abstract values and lack of attention to organisational practices; overemphasis on initial structural differences and lack of attention to the new cultural layer; lack of recognition of the political dimensions and failure to recognize cultural differences as a source of value and learning”.

Maanen and Barley (1985) claim an acquisition or a merger can introduce new subcultures, as well as importing new occupation, which may bring different mixtures of subgroups, levels of interaction and problem-solving; technological innovation.

Conroy and Sipple (2001) conducted a study of a merger of two programs at Cornell University and the result was one single program where all members shared experiences and perceptions, which developed into a new frame of reference shared by all members of the previously separate programs held in different locations. This does not necessarily mean that mergers on a grander scale such as between large institutions could experience the same transformation but as Conroy and Sipple (2001) claim there is a possibility for convergent thinking based on shared experiences.
6. Mergers and acculturation

Acculturation is the ‘exchange of cultural features that results when groups of individuals having different cultures come into continuous first-hand contact: the original cultural patterns of either or both groups may be altered, but the groups remain intact’ (Kottak, 2005, pp. 209, 423). Theories on acculturation are used to describe organizational cultures about to merge and when considering two cultures where one is dominant, the other can be considered a subculture. According to Berry (1980: 211-279), there are four options (or sometimes called strategies): assimilation, separation, integration and deculturation. Each of these indicates the extent to which one culture has blended with the other. The effect of a merger on the organisational culture can be seen in the following figure:

![Figure 2: A model of acculturative dynamics](source)

**Source:** Elsass and Veiga, 1994; 440.

However, the above figure takes a unitarist perspective which is not the case for many organisations that are by nature more complex (Martin et al., 1985). Elsass and Veiga (1994) point out the acculturation outcome is still subject to change even after an initial outcome of acculturation, as can be seen in the following table:
5. Conclusions

From this critical review there are number of key considerations for the market-orientation in the organisational culture of post-merger organisations. Firstly, any researcher or consultant needs to be clear not only on the definition or concept of organisational culture that best suits their particular study, but also the perspective or combination of perspectives taken which will result in determining the focus and scope of the study. It seems clear from this review that research to date has been limited in its focus on members of the organisation with a leaning towards management rather than non-managerial members. Furthermore, there seems little research that has taken a multi-perspective approach to organisational culture. This complex perspective may complicate research concerning market-orientation as market-orientation may vary to differing degrees between the subcultures in relation to each other as well as the dominant culture (if one exists) or may simply be an area of ambiguity and uncertainty.

A market-orientation brings with it certain aspects of organisational culture concerning innovation, creativity, customer focus and so on. This does not necessarily mean that a checklist exists for the organisation to tick off factors indicating market-orientation but rather that a contingency approach should be adopted to suit the need for a market-orientation based on internal and external factors.

The post merger aspect seems to indicate complexity both from a marketing orientation and organisational culture perspective. A merger brings with it acculturation through which conflict, subcultures, conformity, disassociation and many other issues arise, many of which will affect the cultural make-up of the organisation and could be seen as a means by which orientation may head in the direction required by the organisation or in another direction altogether.

Based on this critical review (and primarily on the findings of Schein (1988), Martin (2002), Becher and Trowler (2003) and Nahavandi and Malekzadeh (1993), I have developed...
the following framework which indicates the interplay of key factors and could provide a useful basis for future research:

![Figure 3. A conceptual framework for organisational culture and market-orientation of post-merger organisations](image)

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About the author

Nicholas CHANDLER has been a lecturer / adjunct professor covering a range of management topics at the Budapest Business School since 1997 and currently with research fields covering organisational culture in large organisations, market-orientation in higher education, the formation of subcultures and the strategic implications of mergers.
Abstract. The purpose of this paper is to analyze the usefulness of financial statements for small and medium sized companies prepared under IFRS, in comparison with the financial statements under Romanian Accounting Standards. The main research question is whether the financial statements under IFRS could fit better the needs of managers and if these financial statements would be useful for external users. The research methodology consists in analyzing the secondary data available – the previous studies and the international financial reporting standards and in comparing it with the existing mandatory standards for SMEs in Romania. Our study has found that the adoption of international reporting standards has its benefits, but also its drawbacks. Overall, the IFRS for SMEs could improve the opportunity of companies in going abroad, by harmonizing the financial reporting. In addition, we can state that, as globalization is imminent, the International Financial Reporting Standards will become mandatory for both large companies and SMEs, so we can recommend managers to be prepared for the process of adoption.

Keywords: IFRS, SMEs, communication process, financial statements, financial communication.

THE UTILITY OF IFRS FOR SMES IN FINANCIAL COMMUNICATION

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1. Introduction

As it is known, the primary objective of accounting is to provide information in order to ensure a fair, clear and full image of heritage, financial position and results of the entity, to all interested parties, ensuring "transparency" of accounting information to all the interested people (Paliu-Popa and Cumpănaș, 2010).

Financial communication represents the way in which the accounting, thru the management team, inform investors, shareholders, credit institutions or clients about the financial health of the company and about the decisions that had been taken, about the strategies or future development perspectives.

The interested parts, especially investors, use these reports that companies provide in order to analyze financial data, having the purpose of economic decision-making.

Included in these reports are the annual financial statements, prepared by companies for a series of internal or external users of financial and accounting information.

The general-purpose financial statements are designed to address the information necessity of a large range of users that are not in the position of asking a company to prepare personalized reports adapted for their information needs (Borlea, Breban and Achim, 2011).

Still, setting targets for financial statements depends on many factors and, in addition, there is not a universal set of targets available to all businesses, whatever the accounting system adopted is (Berheci, 2005/2006).

For listed companies that have public accountability there is a compulsory demand of using the International Financial Reporting standards. However, what happens in the case of small companies, that do not have the financing and the staff needed to make the transition to full IFRS? Some claim that the adoption of international accounting standards by the smaller firms is too complicated. "I can guarantee that if SMEs should adopt IFRS in the next decade, small professional accountants will be outside the market. The international standards are too complex", said Luc Hendrickx, Director of External Relations at the European Association for SMEs (UEAPME). He showed that in the EU, from 25 million enterprises, 99.8% are SMEs, of which half are firms with one employee (www.zf.ro).

The objective of IASB project was to develop an IFRS expressly designed to meet the financial reporting needs of entities that (a) do not have public accountability and (b) publish general purpose financial statements for external users. Examples of such external users include owners who are not involved in managing the business, existing and potential creditors, and credit rating agencies. The IFRS for SMEs was derived from full IFRSs with appropriate modifications based on the needs of users of SME financial statements and cost-benefit considerations.

2. What is the situation in Europe?

An internet study on a sample of 1071 companies shows that small and medium sized companies tend to communicate qualitative and quantitative data only with users that have a legal obligation, like tax authorities, credit institutions and shareholders.

A study made by Eierle and Haller (2009), quoted by Farcane et al. found that the majority of SMEs in Germany considered only slightly necessarily, if at all, providing international comparable financial information (Farcane, Căpușeanu and Briciu, 2012).
The utility of IFRS for SMEs in financial communication

Based on the IASB information, in 2012, over 80 countries have adopted IFRS for SMEs or announced plans to do so. The countries worldwide are as follows: Antigua & Barbuda, Argentina, Aruba, Azerbaijan, Bahamas, Bangladesh, Barbados, Belize, Bermuda, Bosnia, Botswana, Brazil, Cambodia, Cayman, Chile, Costa Rica, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Ethiopia, Fiji, Ghana, Guadeloupe, Guatemala, Guyana, Honduras, Hong Kong, Jamaica, Jordan, Kenya, Kyrgyzstan, Lebanon, Lesotho, Macedonia, Malawi, Malaysia, Mauritius, Moldova, Montserrat, Myanmar, Namibia, Nepal, Nicaragua, Nigeria, Palestine, Panama, Peru, Philippines, Qatar, Sierra Leone, Singapore, South Africa, Sri Lanka, St Kitts-evis, St Lucia, Swaziland, Switzerland, Tanzania, Tonga, Trinidad, Turkey, Uganda, Venezuela, Zambia, Zimbabwe.

The regulation it is planned for adoption in United Kingdom and Ireland and has limited use in United States and Canada (IFRS for SMEs Fact Sheet, 2012)

3. What is the situation in Romania?

In Romania, there are two different types of financial statements. There are ones for large companies, whose securities are admitted to trading on a regulated market – prepared under the European Commission Regulation no. 1606/2002. In addition, there are ones the rest of the companies - unlisted companies, small and medium companies - (prepared under the Public Finance Minister Order no. 3055/2009 for the approval of Accounting Regulations in accordance to the European directives, as amended and completed).

Along with the mandatory compliance with accounting regulations applicable to listed companies, namely the adoption of IFRS both for consolidated and individual financial statements, the listed companies made financial and staff efforts. Not being yet required to adopt the international referential, SMEs are still in the assessment period of IFRS.

As there are different financial regulations for listed and unlisted companies, there are also different needs regarding the financial information a SME provides. The information needs in the case of these types of companies must be considered depending on their cost and benefits offered at its disclosure. Unlike large companies seeking to attract investors, new partners or economic growth by adding value to the business, usually a small business purposes are giving performance and being profitable. This causes differences in the reporting needs for different categories of companies, according to financial information recipients.

The small and medium sized entities prepare financial statements mainly for the necessity of their owners and for the tax authorities and credit institutions.

In the approximately 500.000 SMEs in the country, there were employed in mid-2012 over 3 million people, the number of these firms representing 99,7% of all existing companies. That is why small and medium sized companies have a big importance on Romanian’s economy, being the main catalyst of economic growth.

The National Counsel for SMEs has proposed as future actions a few major objectives, from which we can exemplify: the absorption of European Funds by as many SMEs as possible, fighting tax evasion at their level and encouraging investments. For Romania, the 2020 Europe Strategy for intelligent and sustainable growth seeks to improve the economic environment for SMEs and to promote their internationalisation.

So by adopting the International Reporting Standards, small and medium sized companies in Romania will benefit by the fact that their financial communication statements will be comparable and so will access European funds easier, al lower prices. By investing in
their activity, the SMEs will improve the quality of their services or goods and so they can became international, without having the problem of accounting differences.

For now, the SMEs cannot use the light IFRS. But as there are differences between the current accounting frame and the international accounting referential, the problem is either the Romanian SMEs should adopt or adapt the international standards in order to have a better communication process with the interested parties and to straighten the trust relationships, but at the same time, to be cost efficient.

So how are the IFRS for SMEs different from the full IFRS and the Romanian accounting standards applicable to non-listed companies?

Because it refers to smaller companies, with few employees and not a big financial power, the standard proposed by IFRS is also undersized, compared with full IFRS. The referential does not treat aspects such as interim financial reporting, earnings per share, assets held for sale or revaluation models for biological assets, equipment and intangible assets. In addition, it is omitted the proportional consolidation for investments in jointly controlled entities. The motivation for these eliminations is that the financial communication should be as simple as possible, without burden the information and the people who use it.

The abridgements refer to the relevancy of some information that are important to listed companies but irrelevant for smaller entities; it also states that offered information should be less; and it prohibits accounting politics from the full IFRS because regulations are stated in the IFRS for SMEs.

In what concerns the differences between IFRS for SMEs and the Romanian accounting standards applicable (Order 3055/2009), we can notice: the international standard does not present a standard format for the financial statements. The cost of stocks under IFRS is not allowed to be calculated with LIFO method (last in, first out). The costs of borrowing are recognized under IFRS for SMEs as expenses, but the Romanian standard allows the capitalization of such costs for assets that require a significant period to get ready for intended use or sale.

4. Conclusions

Experts present at the 18th Seminar of the Committee of European-Latin American Integration (CILEA) and Body of Expert and Licensed Accountants of Romania (CECCAR) under the title "Globalization: Challenges and perspectives for SMEs" have showed that accounting globalization is an inevitable process that occurs in all economies; This is necessary to create procedures, values and criteria of universal values (Gronski 2009).

The international dimension, in a permanent process of growing, has highlighted the fact that the accounting system, as a way of communication, differs by content and by application methods from one country to another (Bogdan, 2004).

In order to achieve an international market, where the financing sources could be available with low costs and less bureaucracy, the international standards could help the process of border crossing for SMEs.

The adoption of International Financial Reporting Standards in the small and medium companies in Romania will produce a big change in the economic market, particularly as regards the financial and accounting information obtained within this referential.

One of the benefits of adoption the IFRS for SMEs would be the increase in the level of satisfaction of information necessities for internal and external users, they being able to compare financial statements from one country to another without needing special knowledge.
in particular accounting referential. The financial statements would become easy to compare and to analyzed, facilitating the absorption of European and International funds at lower costs.

Nevertheless, a common, harmonized international accounting language will increase trust in the financial statements, giving SMEs a benefit in the economic market.

This problem is not specific to our country, and not even to ex communist countries; it is a dilemma that keeps in fever the profession worldwide. From a European perspective, this is even more interesting, since the European Union must decide again about the destiny of its so hardly elaborated directives, which may be eventually challenged by the IFRS for SMEs (Albu, Albu and Fekete, 2010).

Nevertheless, changes of any nature have some negative aspects. By adopting the international regulations for SMEs, companies in Romania should be very careful with the costs associated, especially if they chose to adopt voluntarily the international referential. We can stated that, from the discussions had with professions accountants, they are not yet ready to fully understand the nature and the differences in application of IFRS for SMEs. Moreover, the impact of transition could be a drawback for decision makers – either managers or investors – as the comparability of information can be a hitch on recognition and measurement criteria.

Still, for achieving all the benefits of an optimum financial communication system, the managers of SMEs should first of all act locally, but think globally.

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About the author

Ioana Cristina COLBU received her BBA from Letterkenny Institute of Technology, Irland, and MA in accounting from Ștefan cel Mare University of Suceava, at present being a Ph.D. student in accounting at the same university. Her experience ranges from teaching, research and consultancy work for private companies.
Abstract. The intensive economic growth during the last decades has been associated with a continuously increasing intensive use of material resources, in spite of the rapid technological progress. The historical data over long periods of time reveal that the current economic system deals to a certain degree the inefficient use of resources by allowing large waste, low conversions factors, pricing below true costs. The situation is somehow different in the countries that have adjusted their industrial structure after major political and societal events as it is the case with Romania. The paper intends to address the issue of diversity in the evolution patterns of the resource productivity and other resource indicators among the EU member states, relating to the resource consumption at the domestic economy level, and conducting a statistical analysis based on observations derived from evidence on resource indicators (such as resource efficiency and the following broad categories - overall (national) resource consumption and industry resource consumption). In the paper, the resource productivity is addressed, measured as the volume of Gross Domestic Product in market prices (GDP) over Domestic Material Consumption (DMC). The evolution of these indicators was very specific at the member states’ level depending on domestic context – the economic structure, the competitiveness level, the impact of financial crisis etc. but the link with other time series or structure indicators bring to light new perspectives in revealing the patterns of consumption and policy actions to improve the resource efficient use.

Keywords: resource consumption, domestic material consumption, productivity, efficiency.

ESTIMATING DYNAMIC PATTERNS FOR RESOURCE CONSUMPTION IN ROMANIA vs. EU

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1. Introduction

Resources underlie basis of economic development for each country. Some countries have considerable resources, while others have to import. Resources are limited in volume and have a patchy distribution in the territory. Developed countries use intensive exploitation of resources, while developing countries use extensive development resources. In the 1990s they started to intensive use of waste as raw material for some resources that can be salvaged. This has influence on lower production costs through lower costs of raw materials, but also a positive impact on environmental protection.

The efficient use of resources can contribute to relatively steady growth, whereas inefficiency and over-exploitation may put long-term growth in jeopardy.

The European policy relates to the resource efficiency as one of the crucial dimension in the Europe 2020 strategy of achieving throughout European areas a smart, sustainable and inclusive growth; it also aims to claim an adjusting process towards a resource-efficient, low-carbon economy to achieve sustainable growth. The Europe 2020 strategy focuses on the three major priorities to undertake to a growth which should be [2]:
- smart: developing an economy based on knowledge and innovation;
- sustainable: promoting a more efficient, greener and more competitive economy;
- inclusive: fostering a high-employment economy delivering social and territorial cohesion

Transforming the economy onto a resource-efficient path will bring increased competitiveness and new sources of growth and jobs through cost savings from improved efficiency, commercialization of innovations and better management of resources over their whole life cycle. This requires policies that recognize the interdependencies between the economy, wellbeing and natural capital and seeks to remove barriers to improved resource efficiency, whilst providing a fair, flexible, predictable and coherent basis for business to operate.

2. Indicators: definitions, data sources and methodology for research

The resource-efficiency indicators measure the environmental impact of the EU and each member state in relation to resources used, including data on imported and exported products.

The eco-efficiency indicator monitors de-coupling of the overall environmental impact linked to apparent consumption and related use of natural resources from economic growth.

The resource productivity indicator measures productivity progress in the use of natural resources, such as GDP in euro per kilo of iron extracted or cubic metre of water consumed. The resource-specific impacts indicator evaluates how negative environmental impacts have been de-coupled from resource use over time [3].

The leading indicator assigned to the EU’s policy initiative to foster sustainable development is the Resource Productivity, built as the ratio of the volume of gross domestic product (GDP) over domestic material consumption (DMC) and is regularly produced and published by Eurostat [4].

- Gross domestic product (GDP) is a measure of the economic activity, defined as the value of all goods and services produced less the value of any goods or services used in their creation. For measuring the growth rate of GDP in terms of volumes, the GDP at current prices are valued in the prices of the previous year and the thus computed volume changes are
imposed on the level of a reference year; this is called a chain-linked series. Accordingly, price movements will not inflation the growth rate.

○ Domestic material consumption (DMC) measures the total amount of materials directly used by an economy; it is defined as the annual quantity of raw materials extracted from the domestic territory of the focal economy, plus all physical imports minus all physical exports. The DMC indicator provides an assessment of the absolute level of the use of material resources (such as metal ores, non metallic minerals, biomass, fossil energy materials/carriers), and allows distinguishing consumption driven by domestic demand from consumption driven by the export market. The DMC indicator is derived from Economy-wide Material Flow Accounts, which is a Eurostat methodology closely following the concepts of National Accounts.

Base on these indicators, we will use in this article a compound indicator, GDP/DMC. The available data from the Eurostat database will refer the member states for the 2000-2009 period of time. For comparisons across countries, resource productivity is measured as Gross Domestic Product (GDP) expressed in purchasing power standard (PPS) over Domestic Material Consumption (DMC).

3. The empirical analysis

As it was mentioned before, resource productivity measures the efficiency with which the economy uses energy and materials (the natural resource inputs needed to achieve a given economic output). The resource productivity of the EU28 economy (as reported by the Eurostat) increased from 1.33 EUR per kilogramme of DMC in 2000 to 1.65 EUR/kg in the year 2011 (Table 1).

<table>
<thead>
<tr>
<th>Country</th>
<th>Resource productivity (EUR per kg)</th>
<th>Average growth (2000-2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2000</td>
<td>2005</td>
</tr>
<tr>
<td>EU28</td>
<td>1.34</td>
<td>1.4</td>
</tr>
<tr>
<td>Belgium</td>
<td>1.52</td>
<td>1.61</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>0.17</td>
<td>0.18</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>0.47</td>
<td>0.56</td>
</tr>
<tr>
<td>Denmark</td>
<td>1.43</td>
<td>1.36</td>
</tr>
<tr>
<td>Germany</td>
<td>1.5</td>
<td>1.74</td>
</tr>
<tr>
<td>Estonia</td>
<td>0.42</td>
<td>0.39</td>
</tr>
<tr>
<td>Ireland</td>
<td>0.76</td>
<td>0.8</td>
</tr>
<tr>
<td>Greece</td>
<td>1.04</td>
<td>1.06</td>
</tr>
<tr>
<td>Spain</td>
<td>1.12</td>
<td>1.05</td>
</tr>
<tr>
<td>France</td>
<td>1.8</td>
<td>2.01</td>
</tr>
<tr>
<td>Croatia</td>
<td>0.72</td>
<td>0.63</td>
</tr>
<tr>
<td>Italy</td>
<td>1.5</td>
<td>1.72</td>
</tr>
<tr>
<td>Cyprus</td>
<td>0.76</td>
<td>0.71</td>
</tr>
</tbody>
</table>
### Resource productivity (EUR per kg)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Latvia</td>
<td>0.25</td>
<td>0.3</td>
<td>0.34</td>
<td>0.32</td>
<td>28.00%</td>
</tr>
<tr>
<td>Lithuania</td>
<td>0.53</td>
<td>0.51</td>
<td>0.57</td>
<td>0.56</td>
<td>5.66%</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>2.47</td>
<td>2.73</td>
<td>3.47</td>
<td>3.21</td>
<td>29.96%</td>
</tr>
<tr>
<td>Hungary</td>
<td>0.59</td>
<td>0.47</td>
<td>0.88</td>
<td>0.9</td>
<td>52.54%</td>
</tr>
<tr>
<td>Malta</td>
<td>3.28</td>
<td>2.25</td>
<td>2.81</td>
<td>2.52</td>
<td>-23.17%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2.43</td>
<td>2.79</td>
<td>2.82</td>
<td>2.89</td>
<td>18.93%</td>
</tr>
<tr>
<td>Austria</td>
<td>1.21</td>
<td>1.23</td>
<td>1.44</td>
<td>1.43</td>
<td>18.18%</td>
</tr>
<tr>
<td>Poland</td>
<td>0.39</td>
<td>0.44</td>
<td>0.48</td>
<td>0.4</td>
<td>2.56%</td>
</tr>
<tr>
<td>Portugal</td>
<td>0.78</td>
<td>0.83</td>
<td>0.83</td>
<td>0.96</td>
<td>23.08%</td>
</tr>
<tr>
<td>Romania</td>
<td>0.35</td>
<td>0.24</td>
<td>0.23</td>
<td>0.21</td>
<td>-40.00%</td>
</tr>
<tr>
<td>Slovenia</td>
<td>0.7</td>
<td>0.78</td>
<td>0.96</td>
<td>1.07</td>
<td>52.86%</td>
</tr>
<tr>
<td>Slovakia</td>
<td>0.56</td>
<td>0.51</td>
<td>0.67</td>
<td>0.67</td>
<td>19.64%</td>
</tr>
<tr>
<td>Finland</td>
<td>0.79</td>
<td>0.82</td>
<td>0.88</td>
<td>0.93</td>
<td>17.72%</td>
</tr>
<tr>
<td>Sweden</td>
<td>1.45</td>
<td>1.45</td>
<td>1.6</td>
<td>1.6</td>
<td>10.34%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>2.18</td>
<td>2.54</td>
<td>3.18</td>
<td>3.22</td>
<td>47.71%</td>
</tr>
</tbody>
</table>

**Source:** Eurostat, code [tsdpc100].

The development of EU’s resource productivity over time fluctuated in time. After a constant increase between 2000 and 2003, the resource productivity indicator dropped significantly in 2004; then, recovering the fall in 2005 it continued to go larger with a constant growth rate until 2010. From 2006 to 2010, in the case of EU28, it registered a leap from 1.42 to 1.65 EUR/kg (Figure 1). One explanation of this sudden increase may be link to the fact that the economic crisis in 2009 affected the material-intensive industries of manufacturing and construction much more than the services industries. Taken into account the ratio GDP/DMC, can be inferred a greater decrease of DMC (11%) comparative with the decrease of GDP.

![Figure 1. The evolution of the resource productivity (as the ratio GDP/DMC), in 2000-2011 period](image)
Regarding the specific growth rate, it varies heterogeneously across the different state members, in terms of dynamics. The aggregated EU27 economy increased resource productivity from 1.33 EUR per kilogram of DMC in 2000 to 1.60 EUR/kg in the year 2011 which relates to an average annual increase of 19.40 % in the period 2000-2011. On contrary, in Romania, the resource productivity decline with 40%, from 0.35 EUR/kg in 2000 to 0.21 in 2011, as it is seen amounting for only approximately 13% of the European average.

In 2011, countries performing significantly above EU average include the United Kingdom (201.25%), Luxembourg (200.63%) and the Netherlands (180.63%) as compared to the 100% the bases for the EU28 – Figure 2. Countries where resource productivity is very low as compared to the EU28 average are Romania (only 13.13%), and Bulgaria (12.50%).

![Index EU28=100%](image)

**Figure 2. The 2011 performance countries in terms of resource productivity (GDP/DMC) – index EU28=100%**

The following picture is indicative for the dynamics on the whole interval 2000-2011, registering the average on this period.
During the reporting period of 2000-2011, the Domestic Material Consumption (DMC) slightly de-coupled from GDP growth. Between 2000 and 2003, DMC decreased in absolute terms whilst GDP was growing. From 2003 until 2009, DMC has developed in parallel with GDP. The economic downturn starting in 2007 is also reflected in the DMC development. The drop between 2008 and 2009 was more pronounced for DMC than for GDP.

Table 1

<table>
<thead>
<tr>
<th>Unit</th>
<th>2000</th>
<th>2005</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU28 (EUR per kg)</td>
<td>1.34</td>
<td>1.40</td>
<td>1.65</td>
<td>1.60</td>
</tr>
<tr>
<td>Index 2000=100</td>
<td>1.00</td>
<td>1.04</td>
<td>1.23</td>
<td>1.19</td>
</tr>
<tr>
<td>Romania (EUR per kg)</td>
<td>0.35</td>
<td>0.24</td>
<td>0.23</td>
<td>0.21</td>
</tr>
<tr>
<td>Index 2000=100</td>
<td>1.00</td>
<td>0.69</td>
<td>0.66</td>
<td>0.60</td>
</tr>
</tbody>
</table>

Table 2

<table>
<thead>
<tr>
<th>Unit</th>
<th>2000</th>
<th>2005</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU28 Millions of PPS</td>
<td>9,262,356.9</td>
<td>11,149,731.1</td>
<td>12,356,916.0</td>
<td>12,734,859.9</td>
</tr>
<tr>
<td>Index 2000=100</td>
<td>1.00</td>
<td>1.20</td>
<td>1.33</td>
<td>1.37</td>
</tr>
<tr>
<td>Romania Millions of PPS</td>
<td>111,288.3</td>
<td>169,995.3</td>
<td>244,549.7</td>
<td>252,801.1</td>
</tr>
<tr>
<td>Index 2000=100</td>
<td>1.00</td>
<td>1.53</td>
<td>2.20</td>
<td>2.27</td>
</tr>
</tbody>
</table>

Source: Eurostat, code [nama_gdp_c].
Estimating dynamic patterns for resource consumption in Romania vs. EU

Table 3

<table>
<thead>
<tr>
<th>Unit</th>
<th>2000</th>
<th>2005</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU28 Total (1000 tonnes)</td>
<td>7,544,074</td>
<td>7,911,673</td>
<td>7,030,282</td>
<td>7,345,675</td>
</tr>
<tr>
<td>Index 2000=100</td>
<td>1.00</td>
<td>1.05</td>
<td>0.93</td>
<td>0.97</td>
</tr>
<tr>
<td>Romania Total (1000 tonnes)</td>
<td>172,796</td>
<td>334,997</td>
<td>400,003</td>
<td>444,255</td>
</tr>
<tr>
<td>Index 2000=100</td>
<td>1.00</td>
<td>1.94</td>
<td>2.31</td>
<td>2.57</td>
</tr>
</tbody>
</table>

Source: Eurostat, code [tsdpc230].

Figure 4. The dynamic for selected indicators in EU28 - chain-linked volumes, reference year 2000

Although the GDP of the EU28 increased on average between 2000 and 2011, domestic material consumption grew at a much slower pace, rising with two main surges in 2000 and 2004); as a result, resource productivity in the EU28 rose by 19% overall. This could be seen as a relative decoupling of the use of materials in relation to the economy, however, much of the economic growth during this time was due to a growth in services so any conclusions about the increasing efficiency of the EU28 economies should only be made taking this into consideration.
Resource productivity varies considerably across the Member States. This indicator is influenced by the GDP levels, the stages of economic development or the structure of their economies. There are states high levels of competitiveness (Luxembourg, Nederlands, UK), while states with lowest resource productivity have low levels of competitiveness (Bulgaria, Romania and Latvia).
4. Conclusions

There are several indicators that address the issue of resource consumption and one of them is the resource productivity. Resource productivity is calculated take into account GDP and DMC.

Efficiency using of resources have major impact in lowering costs of supplies and production, with a positive result on lower product prices. At the same time, this is accompanied by an increase of labor productivity and increase competitiveness and profitability of the company. Positive financial results have an impact on economic growth and on employees. Also, in the time of globalization, we can speak about green global environment and eco-efficiency and to proper waste management, in a general context of development, taken into account the environment protection.

Some directions to optimize the resource productivity are:
- develop new products and services
- find new ways to reduce inputs
- minimize waste
- improve management of resource stocks
- change consumption patterns
- optimize production processes, management and business methods
- improve logistics.

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DIGITAL EUROPE
*** http://s3platform.jrc.ec.europa.eu/wikis3pguide/-/wiki/Main/PART+i
*** http://ec.europa.eu/environment/resource_efficiency/index_en.htm

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Abstract. The market of heating systems changed considerably in 12 years. Due to their high losses, poor quality, and high prices, the district heating systems were replaced by micro thermal plants that seemed more cost efficient at that time. As the market changed the interest for affordable modern heating systems such as, floor heating and radiant heating panels was growing. Although many people were reserved when it came to purchasing one. Therefore a quantitative research was conducted on 300 households to determine the view Brasov’s population has on these modern heating systems. The results presents the main criteria taken into consideration when buying a heating system, the amount of money people are willing to spend on it and the reasons for which the population is reserved when it comes to purchasing one. The paper also provides a perspective for companies operating in this field on how to approach the market and increase the demand for these products.

Keywords: modern heating systems, micro thermal plant, district heating, floor heating, heating panels.

RESEARCH ABOUT POPULATION’S VIEW ON MODERN HEATING SYSTEMS

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1. Introduction

Around the year 2000, because the lack of distribution efficiencies, lack of consumer choice and flexibility at the household level, many people saw the abandonment of district heating in favour of alternative methods of domestic heating. Aside from the technical deficiencies of the networks, this switch was prompted by rising energy prices and the lack of improvements to the service. (Poputoaia and Bouzarovski, 2010)

These alternative methods include modern heating solutions that are both cost efficient and eco-friendly, although the demand for this kind of systems is not very high at the moment, prompting companies in this field to determine the market trends and a way in which to approach the market in order to increase the demand for this kind of products as opposed to micro thermal plants.

2. The market for heating systems

Before the year 2000 there wasn’t too much to discuss about the market for modern heating systems. The market before that time had two major players, the extensive district heating networks developed in the urban centres (Popovici, 2011), and wood stoves (Colesca, Ciocoiu, 2013) in the rural areas.

District heating (DH) is an energy efficient technology that transmits and distributes heat from energy sources to residential, commercial and industrial consumers for space heating and hot water supply (Zhang, Wang and Kang, 2013).

In case of Romania the entire service was centrally regulated and owned by the state, within a single public company – S.C. Termoelectrica S.A. – being in charge of running it. (Poputoaia and Bouzarovski, 2010) This company was operating in 251 localities in the year 1990. (Iacobescu and Badescu, 2011)

After 1990 Romania has been affected by major political and social changes. The production of goods has decreased significantly. This led to a sharp decrease of the energy consumption in the industrial sectors (Iacobescu and Badescu, 2011) because of this the large industrial enterprises were requiring fewer or no heat services (Poputoaia and Bouzarovski, 2010) which led to lower income for the district heating company and the difficulty to cover its expenses.

Many domestic users were also affected by this change due to the inappropriate billing system that didn’t measure accurately their consumptions, and due to the losses acquired because of the poor distribution system of Termoelectrica.

It is also estimated that up to 77% of the thermal energy is lost in the district heating distribution network due to leaks and poor insulation of the piping. (Popovici, 2011)

This created a situation in which individual gas-fired heating appliances became more competitive than DH networks (Poputoaia and Bouzarovski, 2010) encouraging residential consumers towards the use of gas for heating rather than district heating (Kennedy, 2005) Systems functioning on gas were micro thermal plants.

The micro thermal plants are gas-fired heating appliances that produce hot water used for heating, and for the household, categorizing the devices as mixed micro thermal plants and thermal plants only for heating. (Constructiv, 2003)

For the promotion of these, suppliers exploited the shortcomings of DH through marketing campaigns that emphasized customer comfort and lower running costs.
As a result, from the total of 2.696.000 apartments connected to the district heating, 581.000 were disconnected in 4 years period, meaning 21% of household users. The district heating units from cities smaller than 20.000 inhabitants were closed. Therefore from a total of 184 systems that were functioning in 2002, more than 40 were closed in the years 2003 and 2004.

In the winter 2008–2009 about 1,800,000 apartments were fed with heat from centralized systems and the average national level of the apartments connected to DH was approximately 65% (COGEN Romania, 2013).

To diminish the disconnection rate, DH companies imposed additional bureaucratic requirements for the disconnection to be approved. (Poputoaia and Bouzarovski, 2010).

For the same purpose the state provided a direct social support scheme since 2003, to address the social impacts of increasing DH prices by covering a given percentage (10–90%) of the DH bill, (Poputoaia and Bouzarovski, 2010) but these subventions ceased from the year 2007 (COGEN Romania, 2013).

As a result the market of micro thermal plants started to present a great potential and several companies entered this field, becoming the main products of the heating market by 2005.

The onset of the global financial crisis in late 2007 set in motion a series of events that caused rising political, economic, and social tensions. (Gheorhge and Muresan, 2011)

This resulted in consumers looking for more comfortable and more cost efficient heating solutions, based mainly on electricity, while the demands of the residential service sector substantially decreased for the micro thermal plants (Zhang, Wang and Kang, 2013). Adding the fact that the acquisition and installation of gas-fired heating is a capital-intensive and time consuming process (Poputoaia and Bouzarovski, 2010).

After 2008 the legislative frame was also discouraging the acquisition of micro thermal plants, especially because the European Union was planning to impose a pollution tax on the owners of this kind of systems, encouraging together with the local government, innovative heating systems that are eco-friendly. (Rezessy, Dimitrov, Urge-Vorsatz, and Baruch, 2006) For instance the government of Sweden grants subsidies for households that are willing to implement brine/water-based heat pump or a boiler fired by wood pellets (Mahapatra and Gustavsson, 2008) while the Spanish government financed to a large extent solar energy projects (Patlitzianas and Psarras, 2007).

Two modern heating methods getting more and more known on the Romanian market are heating panels and floor heating.

The radiant floor heating systems offers distinctive advantages in several special applications and allows the use of low temperature heat. Its construction usually consist of small pipes, embedded in masonry floors or in prefabricated panels in which hot water flows, or as light systems where the pipes are placed in aluminium foil. (Zhang, Caia and Wang, 2013) These systems allow a good flexibility in modifying the internal partitions of the indoor space, above all, in high space, allowing a good thermal comfort, otherwise difficult to obtain (Fontana, 2011).

The radiant heating panels are made of heating wire mat embedded in a layer of electric insulating polymeric material pasted from both sides with thin polymeric sheets. This combination emits infra-red heat through the radiating front panel, and this heats all the objects in the room, which in turn heats the air, obtaining as a result the same temperature in the entire
The electric circuit inside is equipped with a thermostat that keeps the panel surface temperature between the range of 80-95 °C.

This paper will discuss these two innovative heating methods, due to their financial accessibility to the Romanian market, other methods such as solar panels, or geothermal energy being very expensive taking into consideration the initial investment involved.

3. Research methodology

The main objective of this paper is to get an overview on what opinions and which attitude does Brasov’s population have regarding modern heating systems. This quantitative research also includes identifying the criteria taken into consideration when choosing a heating system, together with the amount of money they are willing to spend on it and on its monthly consumption. Another discussed aspect is identifying the reason for not purchasing modern heating systems.

Aside from the above-mentioned objectives, the research contains 2 hypotheses, where the first one aims to determine if the home in which one lives has an influence on the type of the modern heating system preferred, the second studies if at least 70% of Brasov’s population heard something about the modern heating systems.

The targeted research population was established to include individuals, both male and female, who own their own house or apartment.

In order to determine the research sample, both simple random sampling and Systematic sampling with the interval of 5 was used. The data was collected from 308 household units, by applying the Questionnaire to the head of the household. For processing and analyzing this data, SPSS was used.

4. Results

According to the research, the most commonly used heating method is the micro thermal plant and is used by 67.6% of the respondents, followed by the central heating system that works on wood 15.7%.

Taking into consideration the level of satisfaction, 45.4% of the respondents are fully satisfied, 38.9% satisfied, 9.3% are so-so while 5.5% are unsatisfied. Therefore 85.2% have no reasons to replace the system they have, while 14.8% are looking for a better method from which only 5.5% have the specific need for change.

When it comes to the amount of money that the respondents are willing to spend on a heating system, the average amount is 4557.86 lei. On the level of the entire Brasov population, with a probability of 95% the amount that the people are willing to spend is in the interval of 3248 lei and 5868 lei.

As for the amount spent on heating per month per room, the most of the respondents (53%) are willing to spend between 51-100 lei, and 37% consider spending under 50 lei, while 10.2% are willing to spend up to 150 lei per month.

The main criteria according which the respondents choose a heating system is the overall consumption on long term. So the most important characteristic of a heating system is low consumption, followed by a low acquisition and installation price, and it is also important to be user friendly. The last criterion on the list is the physical aspect of the system.
Research about population’s view on modern heating systems

90.7% of the respondents are aware that these modern heating systems exist, having very basic knowledge about them, and 71% are interested in acquisitioning this kind of systems on the far future either to replace or to supplement the systems they currently have.

The rest of 29% have various reasons for which they would not acquisition a modern heating system. The main reason was that they are fully satisfied with the heating solution they are currently using, while the next reason pointed out is that respondents perceive these systems as very expensive from the acquisition, installation and consumption point of view. The smallest concern (7.1%) is in connection with the fact that these systems might not be healthy.

From the two researched systems, the radiant floor heating is preferred by 71.4% of the respondents opposed to radiant heating panels.

With regard to the type of radiant heating panel, 68.4% of the respondents prefer the ones that can be installed on the wall as opposed to the ones that are installed on the ceiling. This option is also explained by the model of the chosen heating panel, which is the one that looks like the wall. (38.8%) followed by the one that look like a painting. (34.7%).

According to the results, at a first glance, it seems that there is no difference in preferences between the people who live in flats and people who live at house. Basically from the two heating methods, they both like more the radiant floor heating systems.

Although when using the contingency table with percentages it is shown that 70% of the respondents who live in a house prefer radiant floor heating systems and 30% prefer radiant heating panel, while amongst the respondents living in a flat 72.4% prefer the radiant floor heating systems and 27.6% the radiant heating panels.

The relationship between the household and the type of heating system preferred is tested using the Chi square test, and the theoretical values are calculated in SPSS using the crosstab function, and the results of the Chi square test are displayed in the table below.

Table 1

| If you were to choose between floor heating and heating panels which one would you chose? * Do you live in a house or a flat? Crosstabulation |
|-------------------------------------------------|-----------------|-----------------|-----------------|
| If you were to choose between floor heating and heating panels which one would you prefer? | Floor heating | Heating Panels | Total |
| Do you live in a house or a flat? | % within Do you live in a house or a flat? | % within Do you live in a house or a flat? | % within Do you live in a house or a flat? |
| House | 70.0% | 30.0% | 71.4% |
| Flat | 72.4% | 27.6% | 28.6% |
| Total | 100% | 100% | 100% |

The relationship between the household and the type of heating system preferred is tested using the Chi square test, and the theoretical values are calculated in SPSS using the crosstab function, and the results of the Chi square test are displayed in the table below.
If you were to choose between floor heating and heating panels which one would you chose? * Do you live in a house or a flat? Crosstabulation

<table>
<thead>
<tr>
<th>If you were to choose between floor heating and heating panels which one would you prefer?</th>
<th>Count</th>
<th>Expected Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor heating</td>
<td>80</td>
<td>80.6</td>
</tr>
<tr>
<td>Heating Panels</td>
<td>34</td>
<td>33.4</td>
</tr>
<tr>
<td>Total</td>
<td>114</td>
<td>114.0</td>
</tr>
</tbody>
</table>

The theoretical value calculated with Microsoft Excel, with a probability of 95% and a degree of freedom of 1, has the value of 3.84.

Comparing with the value of Chi square 0.068 it is clear that this one is significantly smaller than the theoretical value of 3.84, therefore H0 will be accepted. Meaning that on the level of the entire population it is guaranteed with a probability of 95% that there is no relationship between the type of household in which Brasov’s population lives and the type of modern heating system preferred.

The second hypothesis studies the awareness of Brasov citizens of modern heating systems. According to the left sided T Student test, T>t where T=32.28 and t=1.98. Therefore H0 is accepted. Meaning that with a probability of 95%, at least 70% of Brasov’s population heard about modern heating systems such as radiant floor heating and radiant heating panels.

The main reason for rejecting modern heating systems is that the price of its acquisition, installing and consumption is perceived to be expensive. In case of the two systems presented, these prices are not high compared to micro thermal plants which are very popular among people’s choice. This leads to the fact that the population is not very well informed about modern heating systems.
5. Conclusion

As the qualitative research shows, there are a number of conclusions that can be very useful for companies operating in the field of modern heating systems.

First of all, the market is still dominated by the micro thermal plants, this being their main competitor, and most of the users of this method are satisfied with it, leaving a market share of 15% of potential customers in the near future.

Most of the people are not willing to spend over 5800 lei on purchasing and installing a heating system and the monthly consumption should not exceed the amount of 100 lei/mo/month. Therefore companies operating in this field must take into consideration these requirements when targeting the majority of Brasov’s market, especially because these two are also the main criteria in the buying decision.

As a final conclusion, it can be stated that most of the people are aware that modern heating systems exist, having very basic knowledge about them, because of which they are reserved when it comes to purchasing one. Therefore the main emphasis should be placed on informing the population correctly about these systems. A well informed population about the benefits of floor heating and heating panels would result in an increase in demand for these products.

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Abstract. The paper proposes a model of convergence in higher education, based on four main directions and twelve indicators. Using structural equation modelling, the framework is tested and turned into a real model by inputting data obtained, through interviews, from experts in the field of European higher education. Additionally, we employ Eurostat data to test the influence on convergence of some proxies of our considered directions, and give interpretations on the relations between indicators and analyses on actions to be taken to foster convergence in European universities.

Keywords: convergence in higher education, indicators, qualitative and quantitative data, structural equation modelling.

A STRUCTURAL EQUATIONS MODEL OF HIGHER EDUCATION CONVERGENCE IN EUROPE

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1. Literature review

In recent years there has been a significant interest among economists (Teixiera, 2013; Middlehurst and Teixeira, 2012; Sohinger, 2005) about issues of economic convergence, both at the national and regional levels. With the development of closer integration at the European and global scales, it is worth to analyze to what extent this greater integration may contribute to deeper convergence and/or divergence, for instance, in levels of income or well-being and what are the factors that might stimulate this trends.

Some authors state that the economic convergence depends on various factors among which technological factors are important (Paci, 1997; Tondl, 2001), others underlying the role of technology has for long run economic convergence (Paci and Usai, 2000; Fagerberg, 2000; and Paci and Pigliaru, 2001). The relationship between technology and growth might be different for different clusters of regions (Neven and Gouyette, 1995; Fagerberg and Verspagen, 1996). Conclusions of the studies reflect that technology policies have proliferated across Europe at different paths in different countries and regions and thus generating economic growth.

Verblane and Vahter (2005), Estrin and Urga (1997), Lenain and Rawdanowicz (2004), Sohinger (2005), Alho et al. (2004) analyzed the convergence between de old EU member states and new EU member states in terms of convergence of gross domestic product per labor-unit. According to Zizmond and Novak (2007), these studies confirm the theoretical expectations since the integration process should bring to the transition economies some important advantages aimed at accelerating the growth of real gross domestic product per labor-unit.

Selecting 28 indicators which best fit the theoretic principles and taking into account the member countries of the European Union as a sample (15) for the period of the seven-year (2000-2006), Hervas-Oliver et al. (2011) tried to identify the convergence between the theory of the intellectual capital of nations and that of the National Systems of Innovation from the literature of innovation systems, with the aim of providing a more robust theoretical framework to explore the drivers of intangibles and the policies which foster competitiveness through the development of the national intellectual capital platforms. Underlying this convergence was recognition that higher education institutions and systems were central to the achievement of Europe’s economic and social goals (Middlehurst and Teixeira, 2012).

Studies proved that advanced qualifications and high level skills are a key factor in promoting economic growth and development (Wolf, 1993), the creation of an institutional context favourable to the development of innovation and entrepreneurship has strengthened the opinion that the accumulation of human capital can improve the economic growth of different countries or regions (Grubb and Lazerson, 2004). Thus, according to Texeira (2013), changes in the individual and social motivations regarding higher education have had a major impact in the external and internal regulation of higher education institutions, notably by stressing the economic dimension of higher education and the potential of institutions to contribute to individual and socio-economic goals.

Mulas-Granados and Sanz (2008) found that there is a relationship between convergence in input technology indicators (based on research and education), convergence in output indicators (through patented innovations) and convergence in per capita income (by means of higher economic growth). In other words, convergence in higher education spending (which in Europe is mainly done by public universities) leads to convergence in business R&D, which in turn leads to convergence in patents, and then into income per capita convergence. Our approach aims at putting together selected indicators, aggregated from the literature, in a theoretical model which is further tested on qualitative and quantitative data.
2. Methodology

We analyse convergence based on four pillars: national policies, internationalization, funding, and quality assurance. A set of indicators is proposed and tested for each of these categories, and the most relevant are retained in the analysis. Based on literature research, we have proposed a theoretical model of convergence in higher education, presented in Figure 1 below.

The equation corresponding to the model is the following:

\[ C = \beta_1 I_1 + \beta_2 I_2 + \beta_3 I_3 + \beta_4 I_4, \]

where: \( I_i = \sum \gamma_{ij} I_{ij}, \) and \( i, j = 1,4 \)

The equation expresses, synthetically, the relationships in the model, expressing convergence as a sum of the variables included in the theoretical model. The model took into account the four directions identified based on literature research, and three relevant indicators for each direction, selected using bibliographic sources and secondary data sources (Eurostat, World Bank indicators, OECD indicators).

![Figure 1. The theoretical model of convergence](image)

The model, as it is proposed, is balanced between complexity and accessibility, capturing all the relevant information while not becoming excessively complicated. Each of the four pillars contributes to HE convergence with a certain weight (expressed by the \( \beta \) values), and each of these pillars is, in its turn, measurable by the use of indicators, whose respective weights are expressed by the \( \gamma \) values. The real model was obtained from the theoretical
framework by addressing questions related to the influence of various indicators on each of the four pillars, and of the pillars on convergence, to a sample of higher education experts.

We have tested the model by taking into account the opinions collected via in-depth interviews with 109 experts in higher education, holding managerial positions in European universities (out of a sample of 500 experts, selected using snow-ball techniques). Each of the experts was asked to prioritize the four directions, then the indicators to be used for assessing convergence on each direction, and their suitability and accessibility for the analysis. The directions and the indicators were given scores, and using a structural equation analysis software the values of the $\beta$ and $\gamma$ weights were determined and fit into the theoretical model.

According to the experts consulted, the most important direction was funding, followed by internationalization, quality management, and only in the last place policies. The real model, based on questionnaire-collected data, is presented in the next section.

3. Results

Based on the opinions collected from the experts, we have simulated a SE model for convergence in European HE, taking into account the pillars established before. The model is presented in Figure 2 below:

![Figure 2. The real model of convergence](image)

It may be seen that the distribution of indicators, and sub-indicators, is rather equilibrated, pointing out to a difficulty to set out clear what needs to be done, experienced by the experts. It may be seen, as stated before, a slight prevalence of funding-related measures, as perceived by the experts. Policies seem to be the least clear, partly due to the complexity of the field. Indicators related to policies are rather structural, referring to the entry places annually
allocated to each university, for freshmen, or to new programs of study which are started. Obviously, a too large variability in terms of university number of places would hinder convergence, as well as the appearance of many study programs which are not fit into a coherent model. Referring to governance, as part of policies, the experts retain democratic control of management structures as being the most relevant indicator for achieving convergence, in the sense that all management structures will be pushed, more or less, in the same direction. However, controversies and divergent interests which may occur in universities lead to this indicator being only slightly correlated to policies and convergence, well below the other two, more measurable, indicators.

In terms of funding, respondents include an evaluative component, funding needing to be allocated based on satisfaction. More convergent universities are more able to use similar funds for obtaining similar results, in terms of accommodating the needs and expectations of their students. Also, a key issue in funding is investment in infrastructure. If there are significant infrastructure gaps, convergence remains a concept devoid of meaning. Also, international grants create not only the premises for attracting alternative funding, but also for competing in the global arena based on similar methodologies, and thus pushing convergence. This indicator links funding with internationalization, the third pillar, which is based, on the one hand, on the mobility intensity, in both students and professors (share of foreign students/ share of visiting professors – the respondents are focusing on the in-flows, which is normal, in a country which used to be, and still is, a net exporter of students and staff), and on the other hand on the structural progresses, expressed in the number of programs awarding a double diploma. Besides mobility, internationalization has to be sustainable and leave traces in the university.

As far as quality management is concerned, the model is understood in a more complex way, involving not only the university-students relationship, but also the university-community dialogue. According to the experts consulted, the university should be preoccupied, primarily, by the employability of its students, and this desiderate cannot be achieved if students are not involved in their education. In the second place, the university should recover former graduates, or lower educated people who are not employed, and give them a second chance, through targeted reconversion programs.

It may be seen that the sub-indicators derive from each other, which may create autocorrelation problems, and this may be considered a limitation of the study. However, given the implicit intricacy of concepts, finding indicators which are completely independent is quasi-impossible.

In order to further test these results, we have aggregated a cluster-model, based on Eurostat data, for EU countries, for the 2001-2011 period (based on the availability of data, which is released with delays).

The principal component analysis identified two main factors, which we named standardization and differentiation. We took Bologna alignment as a proxy of the convergence of policies, out-going to incoming students ratio as a proxy of the contribution of internationalization to convergence, private to public funding share as a proxy of competitiveness in attracting globally-available funding, and number of universities in top 500 as a proxy of quality management. These proxies were chosen as to fit our model to available Eurostat data. The distribution of the four proxies in the two-dimensional place is shown in Figure 3.

It may be seen that the convergence of policies influences the pace of internationalization, while the competitiveness of funding strategies influences quality management, in the sense of more universities acceding in top 500. While policies and internationalization point towards standardization, funding and quality management mechanisms lead to differentiation. The equilibrium of the two allows for convergence to be achieved.
The cluster model of the data is presented in **Figure 4** below:

A first cluster is represented by the countries scoring high on standardization and which export students, but are rather not represented in top 500, and have low levels of private over public funding. These are the *conformists*, represented by Serbia and Croatia, Eastern European countries, rushing to adopt Bologna standards, but not prepared enough for the "first league". A second cluster is represented by countries scoring moderately to low on standardization, which export, but also attract students, but which are still underrepresented in top 500 and have low
levels of private over public funding. These are the candidates, among which Cyprus, Hungary, Portugal, Romania, Slovak Republic, from Central and Eastern Europe, but also countries like Denmark, Norway or Switzerland, from Northern and Germanic Europe. These countries are still somewhat marginal to the convergence process, but making progresses towards it. The third cluster, comprising Belgium, Finland, Sweden, UK, can be labeled as the harmonized cluster, countries equilibrated on the two factors, both compliance with the Bologna standards and representativeness, as educational systems, in the world. Finally, there are some outliers, like Czech Republic, for example, whose representativeness is low, however, the attraction for foreign students is high, and the private over public funding ratio is also rather high. These cases have perspectives for migration into the harmonized cluster, if they continue their growth pace.

4. Conclusions and limitations

One of the main limitations of the study is the non-availability of data for all the countries, which makes them not entirely comparable, and leads to clustering errors, due to missing data treatment. Also, the limited sample of experts, and their natural biases, makes it hard to compare educational systems in focus. However, we were able to identify some patterns of reciprocal influence between the indicators we proposed, and a grouping of these indicators into two explanatory factors. The educational systems in Europe balance between standardization and differentiation, at the intersection of these two complementary tendencies being possible to achieve harmonization. While the harmonized cluster is not very numerous, the pool of candidates is rather well represented, giving force to the process to continue and include as many as prepared from the candidate higher education systems. The theoretical model proposed can be further tested on more data, used for more refined qualitative and quantitative simulations, and also employed in a dynamic perspective, on time series, to outline the change in perceptions regarding convergence in higher education, from one decade to another. Thus, its usability is increased and it becomes a valuable tool for researchers in the field.

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Abstract. Haiku represents a special and short form of Japanese understood by specialists as the most efficient form of economic speech. The most important strength of haiku is that it expresses so much by so few words. A wide range of poets, from Japanese natives such as Matsuo Bashō to Romanian playwright Marin Sorescu, have practiced writing haiku simply to enhance their personal abilities of observation. Until now, the exploration of the link between haiku and economics has not been much studied. This article presents a relative new field of research, "haiku economics," and provides advice on how to improve teaching skills through using haiku poetry. The paper also makes references on unusual chances given to students majoring in economics and business administration to express themselves, by writing and reciting haiku poetry about economic theory, fact, and experience. The examples within the paper are describing the benefits of explaining economic concepts with the help of haiku, which transcend over the technical understanding of the notions but also give a special emotional state of optimism and harmony specific to the Japanese culture and poetry.

Keywords: haiku, teaching economics, economic concepts, Romanian poetry.

HAIKU AND ECONOMICS LEARNING STRATEGIES

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1. Introduction

Even though I teach economics, poetry is my first Helicon on the way to inspiration for teaching and research. The discovery of metaphors can fill the gap between reason and emotion, adding feelings to economics.

However I managed to make the haiku-economics connection after I graduated the second Bachelor studies in Japanese Philology. In this way I realized the inability of standard economic models to explain bubbles, crashes, and global inequality—and how market fundamentalists refuse to discuss them. I saw the connection I wanted in this poem which makes an obvious reference to the ideas of Adam Smith (Ramchandani, 2013):

Invisible hand;  
Mother of inflated hope;  
Mistress of despair!

I genuinely believe that economists can learn the most from poets about precision and efficiency, about objectivity and maximization.

In his Autobiography, John Stuart Mill wrote about his inability to “feel” the economy. Passions and reason were systematically taught and cultivated by economists during the second half of the eighteenth century. But eventually Bentham’s Rationale of Reward replaced Adam Smith’s Theory of Moral Sentiments, and science thereby justified wholesale neglect of feeling. “From this neglect both in theory and in practice of the cultivation of feeling.” Mill later concluded, “naturally resulted, among other things, an undervaluing of poetry, and of Imagination generally, as an element of human nature.” His personal psychological battle against “hedonistic utilitarianism” and his subsequent breakdown could have been averted, he said, had he valued poetry: “I was wholly blind to its place in human culture, as a means of educating the feelings.”

In Romania, haiku represents a very important element studied by a lot of Romanian writers. They founded, on 19 March 1991 the Romanian Haiku Society, established by members of the editorial board of the journal Haiku. Since it, this is part of famous writers like Marin Sorescu, Stefan Augustin Doinaș, Aurel Rau, Smărăndescu Vasile ,Ion Acsan and Mihail Diaconescu. Currently, many other writers are part of this society and a few of them are also recognized in the world wide anthologies. We can speak about Vasile Moldovan, Marius Chelaru, Magdalena Dale, Valentin Nicolățov, Mihaela Băbușanu Amalanci and Petrut Pârvescu (Stan, 1994).

If we want to talk about an accomplished efficiency for haiku the impact produced by this one should be strongest and the cost must be the lowest. These cases are the most searched by all of us but is very difficult to find this perfection.

2. Connection between poetry and economy

In order to establish the connection between poetry and economy we must first carefully study both the similarities and differences between these two basic elements.

Humanity tries to establish points of contact between economics and arts, in general, poetry in particular. Thinking and seeing in this way, economy integrates a vast fabric which includes elements of all areas of culture.

The current culture is under strong interaction between “locality” and “globality” and all measures and updates should have this characteristic to prevail over any other element.
This question is still trying to answer for thousands of years, but it seems that the answers are interested most of all those who were still convinced of the natural link between the two areas of culture king. Many economists have drawn attention to artistic hypostasis of economy as great poets, took a keen interest in the acquisition of economic culture. As a result of many generations of education received in the last two centuries, economics and poetry are deemed to be a conflicted relationship or, at least, in an irreducible opposition.

In these conditions, any collaboration between them, all of them living together in the same personalities concerns are considered to be an exceptional phenomenon, which should be noted in the record books. By applying stupid slogan under which strengthens the exception rule, it concludes that mathematics and poetry is light years away from each other and we need a bridge linking them. Many authors rushed to build this bridge in a negative form, making oppositions list of them. In Poetics math I compiled and I see this way and analyzed dozens of opposition between poetry and mathematics. It is however obvious that the oppositions are interesting only when they exercise between entities that have a strong common denominator on no matter the opposition between a chair and a peach. Is this common denominator, and he does not deserve to be explained? In recent years we have started looking for analogies between mathematics and art.

Economics is the art of giving the same name to different things or a science of analogies, a true triumph of metaphor that allows us to move between different levels of abstraction and generality. Also it often degenerates into a collection of recipes, jargon dominated by stereotypes (The Economist, 2011).

The relationship of the two languages, economics and poetry became increasingly difficult problem, as each of them has grown in complexity. Economic language has greatly enriched artificial component, thus far more than natural language, while poetic language he diversified, giving rise to an entire poetic typologies.

These differences cannot be understood in a unified and deeply than in the fundamental analogies into which the two types of languages develop. Some of these analogies are implicitly assumed by almost all authors, but just the default character prevents their recovery. Even the fact that they insist so much on the contrast between economics and poetry is proof that the common denominator is very strong, and no one is interested in comparing things too heterogeneous (Capristo, 2011).

So, the relationship between scientific and artistic languages is approximated by a virtually unlimited alternation of similarities and differences. Inside each develops a contrast similarities leading to a new case or a new generation contrast. For example, scientific and artistic languages are, and some others, the language of human creativity, but that creativity can take the form of discovery or that of invention. Discovery has long been considered to be as scientific creativity while the invention was considered as artistic creativity.

Another example of an analogy between the two types of languages is their common tendency to achieve a certain concentration of expression, colloquially high semantic density and allowing the development of their heuristic function.

Haiku theory, as economic theory is based on the principles of budget imposed by each country. This is a common feature with a decisive influence on the environment and on all components. Therefore, haiku and economic learning strategies are designed to bring only benefits and for it to be a fruitful relationship the two concepts should be based on elements of the same nature followed a certain preset level (Ramchandani, 2013).
In a much closed connection with creativity is innovation that brings both benefits and also additional costs. However, these additional costs must be necessarily invested to ensure continuous improvement of products and services. All these changes are becoming more and more frequent nowadays.

The most important is the pedagogical innovation. It represents a movement from tradition to modernity, introducing changes in order to increase the efficiency of education and training to contemporary human personality. Innovations in education can be achieved in the form of design changes on the system of organization, programs, textbooks and teaching methods, changes related to interpersonal relationships, such as teacher-student relationship, or changes of material nature.

The implementation of innovations in education is achieved through educational reforms and the introduction of various structural and functional changes in level in order to improve the educational process.

One of the most interesting modern haiku is one that refers to all changes visible every day, even relevant when you least expect. Given the current situation, innovation and continuous improvement by implementing new strategy is already on the agenda. Therefore, we must be able to adapt more quickly to all these changes (Ziliak, 2011).

Yesterday it worked.
Yet, today it does not work;
Windows is like that.

As a teacher, I must manage to combine all these qualities and Haiku technique helps a lot to be able to make yourself very well understood and teaching strategies to be more diversified.

In a haiku we do not ask about the past and future, but the most important is the present moment. Beyond appearances, despite the seemingly simple language, a haiku is a vital poetry, a meditation on the fate of man in the universe of small and large, along with other creatures and plants.

Therefore, the connection between haiku and economic strategies of learning is very tight because every teacher has to emphasize the artist side and the ability to model so that the information submitted to be understood by all those who listen. Also some poems can be perceived differently by each person is where the discussions in order to reach a consensus or at least a somewhat similar opinion.

3. Conclusions

In Japan, Haiku does not tell a story. It tells nothing tangible. It focuses on the sensible. Its raw simplicity allows a direct relationship with the emotion. No analysis or description. He staged futile emotions often associated with the contemplation of nature. The reader is left with an impression broadcasts (Capristo, 2011).

Economists are the ones who have the most to learn from poets because in this way they develop their thinking and way of expressing also managed to combine the two elements (economy and poetry). Thus, efficiency and objectivity are traits that you must have and use to a maximum level. With the passage of time and the implementation of these concepts, the connection will become increasingly pronounced and all learning strategies will become more attractive both for students and for all stakeholders.
Today, haiku is the most popular form in Japan, but it is known and beyond. Many British and American writers, but not only, have also tried skill in composing lyrics. It is estimated that today only in Japan, there are about 10 million haiku writers, but most of them are at amateur and write for themselves. Many have asked why this form is so popular both in Japan and abroad, especially since, in an attempt to compose such poetry in languages other than Japanese haiku loses definition – because here, in this language, all the sounds that form the alphabet have the same length, and all haiku poems - default - are equally long, keeping a pace since ancient times. But modern art tries - it seems - to eliminate these limitations, these rules, leaving free the artist's imagination, and it focuses on the content, not the number of syllables. One can say that haiku is strength: that expresses so much by so few words. The main idea of this concept is to try to express yourself in a limited number of words or syllables (Dincă, 2010).

Haiku is just a sketch but less significant and the details cannot be included in it poetry. The essence must be presented so as to indicate the exact overall theme that the author thought.

The three levels of a haiku are perfectly glued to the situation presented to be as concise and detailed as well:

Source: Own research.

Figure 1. The three levels of haiku poetry

Therefore the connection between artistic haiku and realistic economy are based on some strategies that encourage a harmonious development of every person.

In Romanian society there is a dynamic process which required all walks of life to keep up with the evolution of society and therefore education. As we very well know the knowledge economy index of a country grows if the country possesses knowledge workers which within this age of knowledge economy must have some system at their disposal to create, process and enhance their own knowledge (Brătianu, Dincă, 2010). The most knowledge workers are placed in the education areas.

However rapid changes taking place in education from creating learning environments that can optimize learning techniques and intellectual work or can block the lack of money sometimes slow. Rethinking formal education is required, and forces us to change the relationship with students and between students promoting mutual support and constructive dialogue with new strategies.
Searching for ideas through interactive methods offers to this activity a mystery in which the student is an active participant that he encounters problems, complex situations for the child's mind, but group, analyzes, debates discover the answers to all the questions, solve the learning task, feels responsible and satisfied at the end of class.

All those interactive methods make students to practice their ability to select, combine, learn things they will need in school or in the future, once the new adult life.

All these techniques should help the student develop the ability to assimilate certain information and to put them into practice as soon as possible and in a manner as to be able to speak about the effectiveness of learning strategies.

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Abstract. An efficient management of inventories means proper planning and usage of the control methods as Just in Time (JIT), Material requirements planning (MRP), Vendor Management Inventory (VMI) or Distribution resource planning (DRP). Are presented and analyzed in their interdependence, issues such as: delivery time, payment term, payment methods, transport administration, minimum quantity delivered, stock buffer, planned quantities to be supplied according to the production and sales plan, delivery time, risk assuming in terms of delivery terms agreed and accepted, transport administration, minimum quantity delivered, stock buffer, planned quantities to be supplied according to the production and sales plan, monthly average consumption, product category (“jumper” or not), the free market price, availability of one article on market, the importance of Bulletin analysis and Declaration of conformity, migration tests for packaging that come into direct contact with the product, management methods used, system management, storage capacity, mandatory and optional commercial documents, the frequency of inventory management, ambient or temperature controlled, humidity records, storage capacity, Quality standards followed, internal audit and external audit, physical and qualitative reception, issuance and tracking complaints, labelling, items identifying, samples management, expired items administration, losses recording, key performance indicators and many other aspects referring to inventory flow till production capacity of food company.

Keywords: stocks coverage, minimum and maximum boundary, manufacturing cycle, shelf life.

INVENTORY FLOW TILL PRODUCTION CAPACITY

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1. Introduction

This paper aims to analyze stocks of food factory, in their relationship with both upstream and downstream sources, the places where the stocks are consumed. It's analyzed that part of supply chain of stocks, both raw and packaging materials before production capacity. The correlation of stocks with the operating result, with regards to increasing or decreasing of them, means efficiency.

2. Stocks flow till company warehouse

The flow of raw and packaging materials till company warehouse means activities of Purchasing and Logistic Departments made in order to deliver the article required "in the best quality", "at the right time" and "in the most cost-effective way". The procurement is more effective if company manages to find multiple sources of supply for the same raw or auxiliary materials and services. A few objectives pursued by analyzing suppliers are to identify strategic suppliers and to determinate the dependence of the company by certain suppliers. For example when a recipe is established by using a specific type of spices this means an agreed supplier, a fixed source.

Before the building of stock the link with supplier is mandatory to be created. A business relationship starts with supplier's identifying and verification. The evaluation of suppliers is very important activity of Procurement Department. Considering supplier’s certifications, current customer portfolio and its availability, the negotiation is open. There are analyzed aspects as minimum of delivery, delivery time, payment terms, methods of payment, payment instruments, terms of delivery, freight administration, possibility of creating a buffer stock at supplier, average monthly consumption referring to article subject of negotiation, prices and discounts quantities and values, pallets policy, information about the temperature during transport and storage, the insurance of goods during transport, the timing of the transfer of ownership.

The delivery of an article means a purchase order issued based on terms agreed before each delivery. Commercial terms are with regards to a minimum of delivery, unit price, condition of delivery, lead time, day of delivery, facultative documents as Analysis Report or Bulletin of microbiological analyses, Bulletin of antibiotic residues, Pallets Notes and mandatory documents: the contract or purchase order signed and stamped by both parties, Packing list, CMR, Invoice, Technical Specification, Declaration of Compliance or Conformity, temperature diagram for each delivery, migration tests for those packaging which come in direct contact with the product.

Before a purchase order the link with supplier is mandatory to be created. A business relationship starts with supplier's identifying and verification. The evaluation of suppliers is very important activity of Procurement Department. Considering supplier’s certifications, current customer portfolio and its availability, the negotiation is open. A purchase order contents the information similar with the final invoice: information about both supplier, and customer, date of issuing, the article ordered, the quantity, the unit measure, the unit price, the discount agreed, the value, the date of delivery.

The purchase order together with the packing list, reception and invoice represent the set of documents required by Accountancy Department. Based on it the payment to supplier for the article bought will be done according to commercial terms agreed.

No article can be delivered to a food production company before testing. This means a request of Research & Development Department for an article. The article is sought from several suppliers, active suppliers or not still. Before delivery of minimum of quantity needed by a trial
Inventory flow till production capacity

period, a technical specification of article required is mandatory to be provided by each contacted supplier. Also, the unit price and delivery terms (transport is included or not within unit price) are very important aspects because of Controlling Department which needs them for an internal calculation in order to make a simulation of final cost of finished goods. The Controlling Department will provide information about profitability of article tested.

3. Efficient management of existing stock

3.1. Control method used

Inventory is one of the most critical aspects of most businesses. Management inventory within a company is essential because of fact that it tends to become an important part of a company’s balance sheet.

The company uses the Material Requirements Planning (MRP) as software dedicated for inventory management.

“The main objective of MRP is to use the demand for higher-level items to drive the demand for lower-level (dependent) items. Similarly, the main objective of DRP is to use demand at downstream facilities to drive demand at upstream (supplying) facilities. The logic used in DRP is really just an extension of MRP logic.” (Balan C., (2001), Logistica, Editura Uranus, Bucuresti, pp.171-212)

MRP is a method of planning and control of inventory, with implications in procurement activities with the aim of minimizing inventory and to plan efficient each delivery. This means that are always available the followings information:

- a list of all articles, raw and packaging materials required by all finished goods
- inventory records
- weekly, monthly production plan
- clients firm orders
- a forecast of clients orders.

The list of all articles represents all raw material or packaging materials required by all finished goods. It is a structure of finished goods. Each article as finished good has a recipe. The recipe means quantities or values of raw materials (meat, spices, for example) and packaging (labels, films, bags, boxes, casings, clips). A recipe will always include the percentage of losses allowed.

The inventory records means the actual stock of raw and packaging materials, available stocks within Warehouse Company, the quantities open, ordered already to suppliers, the lead time of purchasing for each article. Current stock is recorded both a physical and script. Stock's updating occurs after each settlement of production orders which can be made daily or weekly. The sooner, the better, in terms of accuracy of stocks registered into management inventory system. A settlement of production orders means an updating of recording of all work in progress (WIP) articles.

Production plan of the company analyzed is frozen for next week and open for the period ahead, depending on production capacity, sales forecast and firm clients orders. Without a production plan the Material Requirements Planning (MRP) cannot issue requirements of raw and packaging materials. Production plans content the quantity of each article as finished product, planned to be realized on next week.

Clients’ firm orders represent actual customer requests for the next period.

The forecast of clients’ orders means estimating demand for final products, for a time horizon. All these information are provided by Sales and Marketing Department because of them
responsibilities to keep in contact with each client referring to possible quantity required by market, marketing activities (promotions, samplings, so on). Information available about market behavior in the past are also an essential input.

3.2. The frequency of inventory counting

According to Romanian law the inventory stocks is mandatory once a year. Nevertheless a good warehouse or stocks manager will perform this inventory at the end of each month, for a good accuracy of the data and especially there where are kept the products that are intended for human consumption. This is not only the correct management of the pluses or minuses of inventory.

An monthly inventory can be a warning of losses greater than those accepted by the recipes, a good administration of those articles with short life, updating of the minutes referring to products expired or products which cannot be used because of special requirements of clients (new labels, new design for a film or for a bag or for boxes, new recipe, new article which require new raw and packaging materials), the supervising of monitoring reports referring to humidity and temperature within warehouse during last 30 days. Products with lower lifetime are carefully managed within food Production Company. To pay attention to these articles means to announce in due time those people responsible for production plan building and to find a way to produce and sell the finished products which require these raw materials.

3.3. Storing stocks

The flow of raw and packaging materials till company warehouse “in the best quality”, “at the right time” and “in the most cost-effective way” is a responsibility of Purchasing and Logistics Departments. The activities of the flow presented require not only the high quality of service, but the quality of the product delivered.

Keeping the quality of service means to ensure that at any time or place in the chain has to be provided:

- cleanliness of storage conditions, even during the transportation
- compliance with temperature control conditions for those article which require a special temperature, both in the truck and in the warehouse
- keeping away from direct light exposure
- pest control of the places where the goods are stored
- segregation of goods so that the products are stored isolated from those goods which might affect their properties.

Securing high quality of service is equal to preserving the quality of products.

The quality of product delivered may be challenged on delivery or reception point before placing the item in stock, or after delivery, when it is used and can be detected the non-compliance. In both cases, a formal complaint is issued to supplier. Supplier shall analyze product claimed or the lot of article delivered and give an official response which describes the solution found: replacement item, commercial discount for the whole quantity delivered or describing of all measures took for the prevention of nonconformity complained.

The warehouse of raw and pack materials has to prove in every moment the goods traceability. Product traceability consists of quick identification of a route of a product in the supply chain. Product lot code is the key information for traceability report. A traceability report provides the information about all customers were products were shipped to and their related quantities. To be able to recall a product from the market traceability report includes the
following information: the quantity of boxes coming in the warehouse, the quantity of boxes shipped to customers (per Delivery Note document) and the quantity of boxes currently in stock in the warehouse. This means that the lot number of each raw and pack material is a mandatory information. The lot number is an information filled in Declaration of Conformity, a document which accompanying the article to the destination. If the packing list is mandatory from commercial point of view, providing the information about net quantity, supplier name and address, date of delivery, a Declaration of Conformity or Certificate of Compliance provides information about lot number, production date, expiry date, date of issuing, and it’s required by Quality Department of production plant (responsible for traceability), by Sanitary Veterinary Authorities and by Auditors.

Because of two types of articles categories handled there are different storage conditions: temperature controlled (TC) for meat and specials spices and ambient for spices, labels, boxes, films, bags, casings, auxiliary materials for production activity and cleaning materials. These mean more warehousing spaces with the own management inventory.

A dedicated place is arranged for those articles that contain allergens. The usage of these items requires a special attention, involving strict observance of flux.

Dedicated spaces have the samples, the refusal articles and the expired items or decommissioned also.

3.4. Key performance indicators, Productivity

As a measure of Management Inventory performance there are used some Key Performers Indicators (KPI’s). Related to the transportation of goods there is “On Time Loading” (OT), number of loadings made in time versus total number of loadings. For reception point the “Invoice Accuracy” (IA) as number of invoices correctly issued versus total number of invoices.

The mains objectives of those who manage the inventory are to avoid any “out of stock”, to obtain a good coverage stock per each category of articles which means less “Days on stock” and to obtained time to time a cost saving. The cost saving means the same effect with less effort, or a better effect with the same effort. It can be obtained, for example, be replacing a film with 180 my with one with the same structure but thinner, a better use of storage space by creating a vertical storage space, easy to access, good manipulation and administration. A kind of cost saving could be the Order Size Rebate which is offered when the quantities ordered by the customer are such that the trucks ordered are fully utilized both in weight and cubic capacity. This allows to get better $/kg rate on transportation. Benefits would be shared. The company which buy is encouraged to issue orders above certain percentage of truck utilization based on the product specifications.

4. Conclusion

Inventory management involves determining the optimal amount of stocks to be held, identifying of the right moment for a new purchasing and the right quantity which has to be bought.

The stock level of raw and packaging materials is influenced by the actual sales (coverage of finished goods), sales estimates, production input (production lead time, production cycle time, minimum lot size, quarantine period) logistic input (transport time, shelf life, trade life).

“The maximum stock limit is the upper level of inventory and the quantity that must not be exceeded without specific instruction from the management. In other words, the maximum stock
level is that quantity of material above which the stock of any item should not normally be allowed to go.” (Piasecki D. J.,(2009), Inventory Management Explained, Ops Publishing, p.241)

“The minimum level or minimum stock is that level of stock below which stock should not be allowed to fall. In case the stock of any item falls below this level, there is the danger of stopping production and, therefore, the management should give top priority to the acquisition of new supplies.” (Piasecki D. J.,(2009), Inventory Management Explained, Ops Publishing, p.241)

The Boundaries recommendation, presented below by Figure no 1 are influenced by coverage of the actual stock (days on stock), production output which depend on capacity utilization, raw and pack material availability, personnel usage and sales estimates.

![Figure 1. Boundaries recommendation](image)

Source: Own research.

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Balan C., (2001), Logistica, Editura Uranus, Bucuresti, pp. 171-212
Piasecki D. J.,(2009), Inventory Management Explained, Ops Publishing, p. 241

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Abstract. This paper is part of a doctoral research aimed at studying the possibilities and mechanism for fostering and administering dispersed cluster based solutions to social problems, while conserving business competitiveness and achieving their corporate social responsibility functions. The authors present here an approach to planning a business cluster oriented towards achieving social benefits based on the implementation of structured design instruments, namely Analytical Hierarchy Process, cascading Quality Function Deployment and Pugh’s New Concept selection method, with the help of the dedicated software package Qualica QFD. The purpose of the paper is to contribute to the establishment of the structure and organization within such an entity in order to maximize the impact on its potential beneficiaries. The main advantages of this deployment come from its ability to transmit and process “the voice of the customer” throughout all levels of interest that must be addressed in this complex endeavor to generate an innovative business solution: the determination of target niche requirements, the establishment of the desired characteristics of the social solution, the identification of possible component services or products for the envisioned package and the advancing of a possible clusterization solution.

Keywords: corporate social responsibility, business clusters, quality function deployment.

CLUSTER PLANNING FOR ACHIEVING SOCIAL BENEFITS

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Management & Marketing Challenges for the Knowledge Society (2013) Vol. 8, Special Issue, pp. 169-176
1. Introduction

The complex, diverse, competitive and fast-paced socio-economic environment in which we live everyday forces companies, authorities and communities to change their working paradigm in order to better meet the market challenges and remain relevant for the new generations. While the business sector is engaged in a continuous cycle of change and innovation, the public sector is pressed many times to come up with solutions to the social issues arising within communities (e.g. youth unemployment, care for the elderly, access to basic services, etc.). Still, there might be solutions available in which such divergent objectives can be met under the same “roof” within innovative clusters (Ryumkin, 2009) or public-private partnerships (Iliescu et. al, 2012).

One of the possible solutions for this has been proposed in the form of CSR enabled clusters in a paper by D. Dragomir (2013). Continuing on this trend, the current paper presents an approach to planning such a cluster based on the implementation of competitive engineering instruments, namely the Analytical Hierarchy Process, the cascading Quality Function Deployment and Pugh’s New Concept selection method, with the help of the dedicated software package Qualica QFD, version 2.5, by Qualica Software GmbH. The purpose of the article is to contribute to the establishment of the needed elements and organizational structure, as well as to the collaboration mechanism within such an entity, in order to maximize the impact on its potential beneficiaries, a typical effect of the design for quality approaches.

2. Study methodology

In order to achieve this goal, the present study has to go through the following levels of interest in the indicated order, so as to transmit and process “the voice of the customer” into workable items for product, process and organizational development:

- the determination of target niche requirements, through focus groups and study of socio-economic trends;
- the establishment of the desired characteristics of the social solution, through brainstorming and consensus building;
- the identification of possible component services or products for the envisioned package based on market surveys;
- the advancing of a possible clusterization solution containing both the structure of members and their means of aggregation.

In the next section of the paper, the following core steps of the methodology are addressed in detail by presenting the results of the applied design instrument (table 1):
Cluster planning for achieving social benefits

3. Achieved results

In the first stage of the current study, the identified possible requirements of the beneficiaries have been ranked. Figure 1.a presents the actual pairwise comparisons performed within AHP, while Figure 1.b presents in a sorted manner the normalized importance ratings. The first three elements and their scores clearly show the orientation towards concrete results: reduced pain, increased mobility and improved anatomic functions.

In the second step of the undertaking, the rating obtained and presented in Figure 1.b are used as inputs for the first use of the QFD method in the context of design for quality of the service package and the cluster structure. In this stage, the requirements are correlated with proposed characteristics of the social product envisioned at the core of the cluster activity (see Figure 2), and their importance for the target market are determined.

Table 1

<table>
<thead>
<tr>
<th>Study methodology</th>
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<td>Methodology step</td>
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<td>Ranking of potential beneficiaries’ requirements</td>
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<td>Deployment of requirements into social product’s characteristics</td>
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<tr>
<td>Deployment of product characteristics into social product’s component products and services</td>
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<td>Deployment of product components into cluster member entities</td>
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<td>Selection of an adequate method for clusterization</td>
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</table>

Source: Authors’ own contribution.

Figure 1. a) AHP ranking of requirements b) Normalized importance ratings of requirements
One must notice the “roof” of the House of quality which identifies possible conflicts within the characteristics. For proper product development, these should be eliminated within this design phase. In our case, there are 4 moderate conflicts (availability, accessibility, adaptability and level of personalization versus value-for-money). These indicate the complex intricacies of assembling such a product and the solution proposed is the clusterization effort itself, meant at maximizing these characteristics without effect on price based competition. Moreover, the fact that the cluster members are part of a managed entity will enable the elimination of internal inefficiencies and external redundancies in a better way, thus improving the value-for-money aspect.

Also, the most important characteristics resulting from the analysis, complementarity, integration, adequate length and personalization, all lead to possible effects that can be obtained through successful clusterization.
The third step of the process involves using a QFD deployment to determine the importance ratings of the possible components that contribute to the realization of the social product in the form of a services and products coherent package (see Figure 3):

![QFD deployment of characteristics into social product components](image)

Source: Authors’ own contribution.

**Figure 3. QFD deployment of characteristics into social product components**

Based on the results, the core services should be related to the medical services, their pharmaceutical or naturist complements and to the balneotherapeutic services, which are dual in nature, medical effects combined with touristic benefits.

The next step is finally dedicated to establishing a proper and adequate cluster structure, by indicating, in terms of importance scores, the type of members that should become part of this entity (see Figure 4):

![Cluster structure diagram](image)
When interpreting the results, it is obvious that a complete mix of services, and, to a lower degree, products, is necessary to satisfy all the requirement. These can be divided into two categories, namely core members (medical service providers, bathing and spa&wellness units, fitness and sports facilities and pharmacies) and complementary members (transportation firms, HoReCa firms, entertainment venues and information centres). The catalysts and administrators of the cluster could be, in decreasing order to potential success, either the local and regional authorities (public sector), the tourism agencies (private sector) or the associations representing the beneficiaries (NGO sector). A key role should also be played by the financing and regulation entities (health or pension insurance companies or government units). The high degree of importance associated with them is an indicator that failure to correlate with their requirements would lead to the failure of the entire undertaking.

In the last step of the methodology, based on the importance ratings of the prospective cluster members, a comparative analysis is performed upon 4 different cluster solutions in order to select the most appropriate one, using Pugh’s method. The possibilities include a connection system based on electronic cards, a geographical clustering approach, a virtual platform for self-management of services and an approach directed towards specialization on a certain topic.
By following the analysis in Figure 5, it is visible that all the solutions have strong points and are viable candidates for developing a collaborative environment for the cluster members. However, a solution based on a card system seems to be the most appropriate because:

- it allows the flexibility of the web platform, while at the same time providing palpable involvement (especially important considering the target group – elderly and/or ill people);
- it maintains a level of universality of the services, thus appealing to a larger audience (unlike the functional clusters);
- it incurs far less expenses and time to develop than a geographical based cluster, which would imply to relocate and transform many businesses.

4. Conclusions

The above study represents an implementation exercise for a design methodology dedicated to achieving CSR enabled clusters focused on health related issues. The approach can represent, for this type of clusters, an alternative to the known emergence and development mechanisms, as presented by (Brenner and Mühlig, 2007) and (Ketels and Memedovic, 2008). The further refinement of the methodology with more concrete data could form the basis for a strategic planning process aimed at creating an optimized cluster structure, i.e. an adequate selection of members and a proper cooperation mechanism aimed at providing the most appropriate social product (service package) with the most desired characteristics, that would fulfil the customer requirements in the target niche in a “silent” way. Potential customers would feel their quality of life improving at a reasonable cost, while the businesses would get increased revenue from the cooperation, without hindering their competitiveness.

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About the authors

Diana DRAGOMIR has recently graduated PhD. studies in Engineering and Management at the Technical University of Cluj-Napoca (2013). Her main research direction for the PhD. thesis has been related to corporate social responsibility and social responsibility management systems.

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**Abstract.** The paper presents an interesting analysis of the future economic development of EU countries, offering in the same time some comparisons with USA. Starting with an analysis of the annual dynamic rates of GDP for the EU countries, during 2000-2012, there are identified two periods which are important to consider them for scenarios of Strategy Europe 2020. The trajectories of future economic development until 2015 are extrapolated considering the average dynamic rates both for the period 2002-2007 also for 2002-2008. There are obtained two trajectories: an optimistic one based on average dynamic rate of the period 2002-2007 and a less optimistic the other based on the average dynamic rate during 2002-2008. An analysis of the relative positions of the countries depending on their GDP per capita and their development potential shows which scenario will be viable for the EU development until 2015.

**Keywords:** Strategy Europe 2020, sustainable development, scenarios of development, GDP, GDP per capita, dynamic mean annual rate.

**SCENARIOS OF ECONOMIC DEVELOPMENT IN EUROPE**

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Challenges for the Knowledge Society  
(2013) Vol. 8, Special Issue, pp. 177-182
1. Sustainable development – strategic objective

The European Union established in 2010 the Strategy Europe 2020, which contains the objectives to be achieved by the end of second decade of the 21st century for a smart, sustainable and inclusive development.

The goals of European Strategy are transposed in national strategies for each European Union country-member. The national plans established the European targets in national frameworks and at every two years EUROSTAT monitors the national data of these indicators.

The base of a sustainable development is the economic growth to ensure the achievement of all the targets of Strategy Europe 2020. The indicators GDP and GDP per capita of each country characterize the socio-economic development of the national economy.

2. Economic development in European Union during 2000-2012

To ensure the achievement of the targets established by Europe 2020 Strategy it is important to analyze the dynamics of Gross Domestic Product of European Union.

The Europe 2020 Strategy presents three possible scenarios for the evolution of EU output level:
- scenario 1 of “sustainable recovery”, when Europe will fully return to earlier growth path from pre-crisis period;
- scenario 2 of “sluggish recovery”, when Europe will suffer a loss in wealth, but it will continue to grow started from that reduced point on a trajectory lower than that of scenario 1;
- scenario 3 of “lost decade” when the Europe potential for future growth will decrease and the loss in wealth will be greater each year.

The sustainable development for Europe will be that of scenario 1. But the evolution of the real GDP growth rate presented in the chart from Figure 1 shows that the slow development from years 2010-2011, became negative in 2012, abandoning the hope to follow scenario 1.

During the period 2000 – 2008, Romania, being a developing country, it had higher dynamic annual growth rates than the levels of EU GDP growth rates. But the decrease in 2009 showed that the Romanian potential of development was not sustainable. Even so, after two years, in 2011, the rate became positive and even lower than in 2011, it maintained also positive in 2012.

The kind of scenario foreseen after the first two years passed from the second decade of 21st century, may consider either the period of increasing dynamic rates of European GDP between 2002-2007, before the crisis started or the period 2002-2008, before the deep decrease in 2009. These two scenarios are presented in Figure 2, which are based on data of real GDP growth rates as percentage change of previous year for EU 28 countries.
The average dynamic rate calculated for the period 2002-2007 is 2.58% and for the period 2002-2008 is 2.21%. Following the two annual average rates there are obtained the two trajectories from Figure 2.

Figure 2. Forecasting the sustainable development path in EU until 2015
The economic crisis started in 2008, as it can be seen on Figure 2; the economic decrease in 2009 was followed by a sluggish evolution in the next three years 2010-2012. As the chart shows it is difficult to follow the first scenario of “sustainable recovery” without any difference which trajectory is selected, from the two presented. It could be also hard to maintain the second scenario of “sluggish recovery” keeping a constant deviation face to one of these trajectories, because the level in 2012, already have changed downward. The third scenario of “lost decade” is rather seen in the chart from Figure 2, but it is still to wait the next years until to conclude this.

3. Economic development potential in Europe and USA, in 2012

The relative positions of the EU countries and USA considering the average annual growth rate of GDP per capita during the period 2008-2012 and their levels of GDP per capita are presented in the chart from Figure 3.

The GDP per capita is expressed in Euro/inhabitant and the average annual growth rates of GDP per capita, is in percentage the geometric mean of the annual change rates for each country. At the intersection of the two axes there is the GDP/capita at EU level (27 countries) and the average of the annual rates of this indicator during 2008-2012.

The four frames of the chart have certain significances. The countries found in the first and second frames have the GDP per capita higher than the average at EU level. The other
countries placed in the third and fourth frames have the GDP per capita lower than the average level of EU.

The average dynamic rate of GDP per capita at EU level was negative during the period 2008-2012. This indicator represents the future potential. Its less negative value means a slow decrease from year to year, in the future, if the conditions are constantly kept. It also defines the countries placed over and under its value, the average change rate of EU GDP per capita. USA is placed in the first frame, having the level of GDP per capita at around 40,000 euro/inhabitant but having the value close to zero of its potential of growth.

The first frame is that of “leaders”, where the countries are placed in the same time over the average level of GDP per capita at EU level and over its average dynamic rate. They are in the best position: Germany has a positive potential of development, Austria and Sweden have higher GDP per capita levels, but less potential of development; Switzerland has a higher level of GDP per capita face to the other countries from this frame.

In the second frame there are the “followers”. These countries are placed over the average of GDP per capita, but with negative rates they don’t have chances to recover the pre-crisis path. Luxembourg has over 80,000 euro/inhabitant, followed by Norway, both being outliers in the second frame.

The third frame is for the “trailings”. The countries: Spain, Slovenia, Croatia, Cyprus, Hungary, Portugal, Estonia, Latvia – are placed over the EU average of GDP per capita and have low negative dynamic rates, but not lower than 2%. An outlier in this frame is Greece which has the dynamic rate less than -4%.

The countries in the fourth frame are the “catching-up” countries. Even they have GDP per capita lower than EU level they still have chances of development because they have positive values of average dynamic rates. Romania has a small positive dynamic rate, lower that Bulgaria, Slovakia, Lithuania, Malta and Poland.

The outlier is Poland which has the highest positive value of dynamic rate not only from this frame, but face to all the analyzed countries. These countries are new EU members and they are still spread in the frame.

The majority of countries are crowded around the average level of GDP per capita and its dynamic rate at EU level, in an interval of minus and plus 2% for their dynamic rates.

4. Conclusions

This kind of analyses are useful to present the level of economic development in the most recent year and its potential of growth for the next two-three years, on a medium term, in order to establish if the purposed scenarios of Europe 2020 Strategy can be attained.

The decision actors can see in advance what the future will be and some corrections can be applied in time in order to follow the recovery path of economic development to ensure its sustainable character.

At level of the year 2012, it can be concluded that Poland is the only country which has an average dynamic rate higher than the values 2.21% or 2.58%, as it can be seen in Figure 3.

Poland could follow a sustainable recovery of the economic development from the pre-crisis period. All the other countries could not keep the pace in order to follow the first scenario, maybe neither the second, but the third. In these conditions the Europe 2020 Strategy should be adjusted.
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Abstract. Reducing of the restrictions regarding the circulation of capital as well as relaxation of controls of currency has resulted in a significant increase of transactions of foreign exchange on international financial markets. Thus, in the context of an enhanced volatility of the exchange rates, it is important use of some performing methods of management of currency risk. The purpose of the article is to present an analysis of the situation of the currency risk in a commercial bank, by establishing individual and global currency positions. In this respect, we used specific methods for the calculation of currency risk indicators, on the basis of the synthesis documents and we determined their level, in order to establish the extent of the bank’s exposure to this type of risk. Thus, the bank elaborates policies and effective procedures for determining limits of the exposure to currency risk. In conditions of the existence of a controllable level of risk by the unfavourable evolution of exchange rates, the bank may record a normal trend of growth of profits from a period to another and can limit potential losses.

Keywords: currency position, exchange rates, exposure to risk, specific risk indicators, potential loss.

ANALYSIS OF EXPOSURE TO CURRENCY RISK AT THE LEVEL OF A BANKING UNIT

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Management & Marketing Challenges for the Knowledge Society (2013) Vol. 8, Special Issue, pp. 183-190
1. Introduction

For banks, the currency risk involves the possibility of recording losses due to exchange-rate developments, because a negative variation of the exchange rate on the market may lead to a decrease in net profit banking. This risk takes on a greater significance to the banks directly involved in foreign exchange operations for its own account or on behalf of clients. Variations in the exchange rate can generate both gains and losses independently of bank's efforts. So, if it records a net long position, in foreign currency, depreciation of the national currency determines a net gain for the bank and if a national currency appreciation occurs a loss. If it registered a net short position, exchange rate fluctuations have an opposite effect.

Assessment of currency risk involves trading operations carried out every day and is achieved by:

- limits of foreign currency positions apply on the points by revaluation of balance sheet or on the daily positions, which are adjusted according to the expectations of the bank related to the evolution of the exchange rate between the national currency and foreign currency;
- limits by exposure to risk, which involve the following situation: with how is less liquid the currency market, with so much below is established the limit of exposure;
- limit of net open position indicates an approximation of the maximum loss with which the financial institution it may confront in the future. In the situation in which the exchange rates for currencies in which the bank has open positions, are in a perfect correspondence, limit of net open position is sufficient for currency risk management.

In general, banks that carry out transactions with foreign financial institutions are more exposed to foreign exchange risk. Also, currency risk is high and if the banks borrow in foreign currency.

In this context, the use of modern and effective methods of management of currency risk is very important for all participants in the international financial activity. Also, it's important that currency market practitioners adopt an integrated approach towards currency forecasting and strategy that is both rigorous and flexible (Henderson, 2006).

Exposure of the bank to currency risk is due mainly to the following factors:
- structural factors, which are linked to foreign exchange operations carried out;
- strategic factors, which are relate to matching as the volume and term between foreign currency and national currency;
- internal factors, which refers to the management of financial institution in this activity;
- external factors which refers to the actual economic context or are linked to the competition and changes in legislation.

In Romania, in case in which exists a strong depreciation of the national currency in relation to the euro, it registers an increase for requirement of capital for foreign currency exposures, fact which leads to the increasing of degree of indebtedness of borrowers which are exposed to currency risk. Thus, uncertainties related to the evolution and the volatility of the exchange rate, on very short term, lead to the appearance of disturbances in the problem of financing in foreign currency, in the case of currency swap made with entities from outside of the country. This aspect is highlighted in Figure 1.
Analysis of exposure to currency risk at the level of a banking unit

*Daily VaR (value at risk) is determined at the level of 99-percentile, according to daily variations of the exchange rate of the national currency in relation with a representative basket of currencies, for a period of 3 years.

**2. Currency position – the main indicator for measuring the risk of currency exchange**

The main indicator which measures the exchange risk is currency position. This represents the difference between total claims and total commitments expressed in a particular currency. For each currency it compares assets with liabilities, resulting two distinct positions: long currency position and short currency position (Olteanu; Olteanu; Badea, 2003). A currency position is considered a long position in the event in which the total of the claims exceeds the total of the commitments. In case in which total commitments exceeds the total of the claims, that position is a short position.

In the banking activity is very important to establish exchange position because not all of the assets or liabilities are exposed in the same extent at risk (Dedu, 2008). Thus, the position of exchange shall be determined for each currency separately, depending on the maturity of the claims and debts.

Identify of the risk of currency is based on two indicators:
- individual currency position;
- global currency position.
Individual adjusted currency position is determined as a result of reduction of the value of the individual currency position with the updated equivalent in national currency, corresponding of social subscribed capital and premiums of issue paid in respectively currency.

Total currency position represent the highest value between the total of individual adjusted positions "long" and the total of individual adjusted positions "short". Thus, the amounts which represent the individual long adjusted positions are considered with the sign + and the amounts which represent the individual short adjusted positions are considered with the sign - (Moinescu and Codarlasu, 2009).

An efficient management of currency risk primarily involves establishing and maintaining of specific limits the bank's for exposure to risk. Thus, limits of currency positions apply on the re-evaluation points of balance sheet, on the positions "overnight" or on daily positions (Greuning and Bratanovic, 2004). Those limits should be adjusted depending on the expectations of the bank related to the variation of exchange rate.

Currency hedging is undertaken in order to reduce the impact of volatility of exchange rate on the assets and liabilities of the bank (Badea; Socol; Drăgoi; Driga, 2010). The technique of hedging currency risk is carried out on the basis of contractual derivatives instruments (forward contracts, futures contracts, currency swap or exchange options).

3. Determining of indicators of currency risk

The indicators used in the analysis of exposure to currency risk can be calculated at both the level of territorial units and central banking level. These indicators are:

Individual foreign exchange position for each currency (expresses the difference between total assets and total liabilities, respectively commitments expressed in a particular currency).

\[ P_{Vi} = A_i - P_i \]

where:
- \( A_i \) - represents total assets expressed in the currency \( i \);
- \( P_i \) - represents total liabilities, expressed in the currency \( i \).

For each currency it compares assets with liabilities, resulting two positions:
- short currency position, when the sum of commitments exceed the total of claims;
- long currency position, which occurs when the total debt is higher than the sum of the commitments.

For a bank a foreign exchange position may become favorable or unfavorable depends on the evolution of the exchange rate of the national currency against a certain currency. This aspect is highlighted in Table no 1.

<table>
<thead>
<tr>
<th>Currency position</th>
<th>Depreciation of national currency</th>
<th>Appreciation of national currency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short currency position</td>
<td>unfavorable</td>
<td>favorable</td>
</tr>
<tr>
<td>Long currency position</td>
<td>favorable</td>
<td>unfavorable</td>
</tr>
</tbody>
</table>

Source: (Basno and Dardac, 2002).

Global currency position (expressed net balance of receivables expressed in foreign currency compared with commitments of foreign currency, converted into national currency in order to be comparable).
Analysis of exposure to currency risk at the level of a banking unit

\[ P_{vg} = P_{vl} - P_{vs}, \]

where:

- \( P_{vl} \) – represents the long currency position expressed in national currency;
- \( P_{vs} \) – represents the short currency position, expressed in national currency.

This indicator gives us a global picture about the exposure of the bank to currency risk and it determines the purposes of daily reporting into banks and at the end of the day of reporting the potential loss shall not exceed 10% of the own funds of the financial institution.

The evaluation of currency risk to the bank "B", branch "A", is performed by means of indicators of individual currency position and global currency position, according to data from balances of verification for the three periods taken into consideration, namely: 31.01.N, 31.01.N+1, 31.01.N+2, as well as formulas for measuring the currency risk, as follows:

### Table 2

<table>
<thead>
<tr>
<th>Crt. No.</th>
<th>Currency</th>
<th>Individual currency position (currency units)</th>
<th>Exchange rate (in RON)</th>
<th>Individual currency position (in RON)</th>
</tr>
</thead>
<tbody>
<tr>
<td>31.01 N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>EUR</td>
<td>7,084,700</td>
<td>4.2775</td>
<td>30,304,804</td>
</tr>
<tr>
<td>2</td>
<td>USD</td>
<td>-</td>
<td>6,423,965</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Other</td>
<td>-</td>
<td>-</td>
<td>2,725,070</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td>-</td>
<td>-</td>
<td>33,029,874</td>
</tr>
<tr>
<td>31.01 N+1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>EUR</td>
<td>10,635,343</td>
<td>4.1220</td>
<td>43,838,884</td>
</tr>
<tr>
<td>2</td>
<td>USD</td>
<td>-</td>
<td>7,407,760</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Other</td>
<td>-</td>
<td>-</td>
<td>3,931,898</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td>-</td>
<td>-</td>
<td>47,770,782</td>
</tr>
<tr>
<td>31.01 N+2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>EUR</td>
<td>20,084,103</td>
<td>4.2549</td>
<td>85,455,848</td>
</tr>
<tr>
<td>2</td>
<td>USD</td>
<td>-</td>
<td>7,001,860</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Other</td>
<td>-</td>
<td>-</td>
<td>5,542,659</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td>-</td>
<td>-</td>
<td>90,986,477</td>
</tr>
</tbody>
</table>


Using the data from the table no. 2 and the formulas of the indicators, results the following values of the global currency position:

- \[ P_{vg\,31.01\,N} = P_{vl} - P_{vs} = 21,335,272 - 33,029,874 = -11,694,602 \]
- \[ P_{vg\,31.01\,N+1} = P_{vl} - P_{vs} = 21,859,560 - 47,770,782 = -25,911,222 \]
- \[ P_{vg\,31.01\,N+2} = P_{vl} - P_{vs} = 21,833,199 - 90,998,477 = -69,165,278 \]

Based on the data from the table no. can be done the analysis of the exposure of the bank "B", branch "A", to the foreign exchange risk for the period considered.

Changes in currency exchange rates may affect the net profit of the bank by increasing or decreasing it, depending on the structure of assets and liabilities in foreign currency and depend on the value of specific risk indicators, respectively individual and global currency position. It is found that in the three reporting periods the bank has a short currency position for all the currencies, with the exception of long currency position which is recorded at USD,
in conclusion the assets related to currencies are lower than liabilities which are corresponding to the respective currencies.

**Centralizing of indicators of measuring the currency risk**

<table>
<thead>
<tr>
<th>Crt. No.</th>
<th>Currency</th>
<th>The evolution of individual currency position</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N+1/N short</td>
</tr>
<tr>
<td>1</td>
<td>EUR</td>
<td>1.4466</td>
</tr>
<tr>
<td>2</td>
<td>USD</td>
<td>1.0246</td>
</tr>
<tr>
<td>3</td>
<td>Other currency</td>
<td>1.4429</td>
</tr>
</tbody>
</table>

**Source:** Balance of verification for the branch “A” for the commercial bank “B” for periods: 31.01.N, 31.01.N+1, 31.01.N+2.

**Table 4**

<table>
<thead>
<tr>
<th></th>
<th>N+1/N</th>
<th>N+2/N+1</th>
<th>N+2/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>The evolution of the global currency position</td>
<td>2.2156</td>
<td>2.6693</td>
<td>5.9141</td>
</tr>
</tbody>
</table>

**Source:** Balance of verification for the branch "A" for the commercial bank "B" for periods: 31.01.N, 31.01.N+1, 31.01.N+2.

From the tables no.3 and no.4 it is found that in the three periods taking into account, branch “A”, of the commercial bank “B” recorded a long currency position only for the USD because the total debts denominated in USD are higher than the total commitments expressed in this currency. In this situation, the net profit of the bank may be decreased due to the decreasing of the exchange rate for dollars. Exposure of banking unit to risk of currency for USD, however, is lower in comparison with exposure resulting from the structure of assets and liabilities in euro.

From the comparison of the individual currency positions for the three periods, there is an increase of 2.82 times of the short currency position in case of EUR in the period 31.01. N+2 in comparison with the same period of year N.

From the analysis of the global foreign exchange positions for three periods, we can get a picture about the entire exposures of currency for the territorial banking unit for each period separately and through comparison between these periods.

The analysis carried out shows that the total amount of liabilities in foreign currency is higher than that of the assets in foreign currency, obtaining thus a short currency position, as follows: 11,694,602 RON in period 31.01. N, 25,911,222 RON in period 31.01.N+1 and 69,165,278 RON during the period 31.01.N + 2. In figure no.2 is presented the evolution of the position of global currency at the level of branch "A", of commercial bank "B", using data from Table 2.
Figure 2. The evolution of the global currency position

**Conclusion**

From the comparison those three values that appear in the graphical representation of the evolution of the global currency position, it follows that the exposure to currency risk, in the case of commercial bank "B", branch "A" is higher than 2.1675 times in period 31.01.N+1 and 5.9143 times in period 31.01.N+2 compared with the same period of year N. About the exposure of bank to currency risk in the period 31.01.N+2 compared to 31.01.N+1, appears an increase of the exposure by 2.6693 times. These values of the exposures are within limits considered acceptable, bearing in mind that global currency position shall not exceed at the end of the banking day 20% of own funds of a financial institution, in accordance with regulations of Romanian National Bank (Norm no.4/2001).

As a result of analysis performed it resulted that the branch "A", of the commercial bank “B”, is a stable banking unit, with good prospects for the achievement of a high profitability.
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References


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Abstract. The aim of this article is to verify the effect of the effective tax burden and the economic growth on government spending in OECD countries for time period 2005 – 2010. From the methodological point of view, we use VAR model and generalized method of moments. The taxation is approximated by the tax quota (TQ) and the World Tax Index (WTI) - an alternative designed by the authors of the article. Concerning the impact of the economic growth on the government spending we found out that results diverge from the economic theory and this can be attributed to the non-standard fiscal measures in response to the economic crisis. Concerning the impact of the taxation on the share of the government expenditure there exist the significant positive impact on the government spending in the case of use of the TQ. For the WTI, we found out that increasing effective taxation is reflected in declining government spending which can be attributed to legal tax evasion or the crowding out effect associated with declining tax revenues within the meaning of the Laffer curve.

Keywords: economic growth, government spending, tax quota, World Tax Index, VAR model.

INTERACTION OF THE TAXATION, ECONOMIC GROWTH AND GOVERNMENT SPENDING

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1. Introduction

The issue of the interaction between individual fiscal policy elements, in particular taxation as a source of government spending under social contract theory, on the one hand, and the examination of the impact of taxation and government spending on long-term economic growth on the other, is the subject of many theoretical and empirical studies. These studies, have taken the form of cross-sectional regression models or time series analysis in a particular country.

This article aspires to use VAR models to describe the interaction of taxation, economic growth and government spending on panel data with dynamization using a generalized method of moments. In addition, the tax burden is approximated not only using the tax quota, but also using the effective tax burden index of the authors' own design – the World Tax Index (WTI).

In terms of methodology, an ontological approach is used, as described by Kotlán (2008) and the aim of the article is to verify the effect of the effective tax burden and the economic growth on government spending in OECD countries for time period 2005-2010.

2. Theoretical foundations of interaction among government spending, economic growth and taxation

Foelster and Henrekson (2001) state, that economic theory is not extensive in this area, however, there is wide scope for empirical analyses and pointed out that it was necessary to take into account the type of public expenditure that was financed through tax revenues.

Barro (1990) yet conclude that the effect is negative in developed, wealthy economies with a large public sector and a greater proportion of non-productive expenditure due to crowding out. In contrast, in less developed countries with a higher share of productive expenditure, the positive effect of increased productivity of the private sector may become dominant, such as positive externalities of the public goods provided.

Wagner (1911) and his law of increasing state activity (Wagner's Law) offers a different approach to examining the relationship between economic growth and government spending. He postulates that economic growth and rise in living standards lead to growing public sector and therefore government spending. Wagner believes that expenditures on education, health, etc. are in fact characterized by a high income elasticity of demand. Therefore, real income growth causes economic growth to lead to more than a proportional increase in government spending.

In connection with the examination of the relationship between economic growth and government spending, it is needed to pay attention to the question of the relationship between government spending and the taxation necessary to finance it. For example, in the event of a government spending increase that households consider permanent, households may expect their permanent income to decrease (Friedman, 1957), depending on future tax increases, and reduce their consumption accordingly (Barro, 1974). Such behaviour by households may increase private savings instead of consumption and thus suppress the effect of increased government spending on economic growth.

Further there is fact that the growth of taxation level does not necessarily lead to an increase in tax revenues to be used to finance expenditures. As described by the Laffer curve (Laffer, 2004), increasing the tax rate may, from a certain point, even lead to a decline in tax revenues due to tax evasion and the substitution of labour by leisure. Expenditures covered by
taxes would consequently not lead to the crowding out of private consumption, which would be further boosted by growth in disposable income.

Public Choice economists offer a different interpretation. They understand collective decisions on the level of the tax burden and public spending as a result of rational individual fiscal decisions. Buchanan (1998) writes, that the same mechanisms apply in the case of collective decisions as in the case of individuals, who adjust their spending according to their income. Although any decision to change spending necessarily leads to a decision about the level of taxation, any decision to change taxation leads to a decision about spending. Buchanan (1998) further indicates that this analogy applies especially under conditions of representative democracies, where all fiscal decisions are ultimately made by individuals. Individuals adjust their total expenditure, both private and public, to their incomes, but incomes can usually be adjusted to a relatively limited extent. Likewise, public spending can match the agreed level of tax revenues, rather than the other way round.

3. Methodology and data of the analysis

This study is based on a panel data VAR model with a generalized method of moments (GMM) for estimation. The below VAR model includes a lag of one period, as is usual in these types of studies and the software used is E-Views, version (7).

Table (1) describes the estimated VAR model. Endogenous variables in each equation are used as dependent variables. Lagged values of endogenous variables and exogenous variables are then used as independent variables. Given to the focus of this paper, the interest must be given to the second equation. For the additional results of another part of the model, see Machová (2012).

Real GDP per capita (RGDP), government expenditure at current prices, in USD adjusted for purchasing power parity relative to nominal GDP (PEXPGDP) and tax burden approximator are the endogenous variables in the model. Exogenous variables include the real investment rate relative to real GDP (RINVESTMENT) and the variable approximating the level of human capital. It is the number of students enrolled in tertiary education in relation to the total population (HUMAN). It also includes a dummy variable (DIS), which, together with the level of the tax burden, forms the interaction element expressing the influence of the group of countries with highly distortionary. The tax approximation was implemented by the tax quota (TQ) and by the World Tax Index (WTI). For a detailed WTI composition see Kotlán and Machová (2012a).

**Table 1**

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Independent variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real GDP per capita (RGDP)</td>
<td>Rate of real investment</td>
</tr>
<tr>
<td></td>
<td>Approximated level of human capital</td>
</tr>
<tr>
<td></td>
<td>Lagged value of real GDP per capita</td>
</tr>
<tr>
<td></td>
<td>Lagged value of government spending</td>
</tr>
<tr>
<td></td>
<td>Lagged value of approximated tax burden</td>
</tr>
<tr>
<td>Level of government spending</td>
<td>Rate of real investment</td>
</tr>
</tbody>
</table>

193
Dependent variable | Independent variables
---|---
Approximated level of human capital | HUMAN
Lagged value of real GDP per capita | RGDP(-1)
Lagged value of government spending | PEXPGDP(-1)
Lagged value of approximated tax burden | TQ(-1) / WTI(-1)

Approximated tax burden (TQ / WTI)
Rate of real investment | RINVESTMENT
Approximated level of human capital | HUMAN
Lagged value of real GDP per capita | RGDP(-1)
Lagged value of government spending | PEXPGDP(-1)
Lagged value of approximated tax burden | TQ(-1) / WTI(-1)

Source: own creation.

The level of GDP, government spending, human capital and taxation was drawn from OECD iLibrary Statistics and OECD Factbook Statistics. The hard data that was used to construct the WTI was obtained from OECD Tax Database, OECD Tax Statistics and World Bank's Doing Business project database.

Stationarity tests using the panel unit root were performed first. Only the level of GDP was found to be non-stationary. This problem was removed by using logarithmic differences - d (log RGDP). With regard to a possible occurrence of autocorrelation and heteroscedasticity was used the "White Period" method. The estimates employed the model with fixed effects, which is, according to Wooldridge (2009), more suitable in the case of macroeconomic data.

4. Results of the analysis

This section describes estimates of the second equation of the panel VAR model using two alternative taxation level approximations. These are the tax quota and the WTI. With respect to the length of the WTI time series, the reference period is from 2005 to 2010. Previously published studies (Kotlán and Machová, 2012b) confirm that a relatively shorter period does not modify the results.

In the analysis below, the investment rate is the exogenous variable; unlike in the summary table (1), however, it does not include the level of human capital due to its statistical insignificance based on the preliminary analyses of primary regression models. Endogenous variables then include the level of taxation (alternatively TQ/WTI), the level of government spending and the level of GDP in logarithmic differences, representative of GDP growth rate (d (log GDP)). As is usual for VAR models, the below summaries include even statistically insignificant variables, if applicable. The only exception is the human capital.

The analysis also employ the dummy variable (DIS), which enables the examining of the separate influence of countries with a significant share of distortionary taxes on overall taxation, measured by TQ or WTI (Figure (1)). The criterion for countries to fall within the high-distortionary tax group is a ratio of direct tax revenue to indirect tax revenue of more than 200%. The dummy variable is used to create the interactive member DIS*(TQ(-1)/WTI(-1)).
Interaction of the taxation, economic growth and government spending

![Graph showing countries with high and low share of direct taxes](image)

Source: OECD Tax Database.

Figure 1. OECD countries by the ratio of direct to indirect taxation (%), 2010

Table (2) presents the effects of independent variables on the level of government spending (PEXP GDP). When expressed using the tax quota, taxation has a statistically significant positive effect. This effect is negative when using the WTI. In the case of approximation through the tax quota, i.e. de facto through a share of tax revenues, increased tax revenues will reflect in an increase in government spending (see the theoretical explanation of this approach of the public choice school). Using the WTI, which conversely presumes negative impact from an increased tax burden on the level of government spending, is interesting, as the index comprises a number of factors affecting the tax burden, which may not necessarily lead to an increase in tax revenues upon increasing the tax burden; in contrast, they can cause higher tax evasion or significant substitution effects.

Table 2: Expenditure panel data model for OECD countries, 2005-2010

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>PEXP GDP</th>
<th>PEXP GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of observations</td>
<td>138</td>
<td>83</td>
</tr>
<tr>
<td>Approximated taxation</td>
<td>Tax quota</td>
<td>WTI</td>
</tr>
<tr>
<td>RINVESTMENT</td>
<td>-0.64(-9.8)**</td>
<td>-0.65(-17.8)**</td>
</tr>
<tr>
<td>d(log RGDP(-1))</td>
<td>-19.63(-3.57)**</td>
<td>-32.8(-2.97)**</td>
</tr>
<tr>
<td>PEXP GDP(-1)</td>
<td>-0.02(-0.61)</td>
<td>-0.24(-5.37)**</td>
</tr>
<tr>
<td>TQ(-1)/WTI(-1)</td>
<td>0.28(5.62)**</td>
<td>-0.20(-1.63)*</td>
</tr>
<tr>
<td>DIS* (TQ(-1)/WTI(-1))</td>
<td>-0.08(-0.73)</td>
<td>0.08(2.36)**</td>
</tr>
<tr>
<td>Adj. R²</td>
<td>0.88</td>
<td>0.85</td>
</tr>
<tr>
<td>F-statistic</td>
<td>199.0***</td>
<td>117.1***</td>
</tr>
</tbody>
</table>

Source: own calculations.
Raising the effective tax burden can then be accompanied by a reduction in tax revenues, and also lead to a decline in government spending. This finding can be significantly modified by the decision makers of economic policy. The table also shows that, in countries with a large share of distortion or direct taxes, the positive effects of an increased tax quota and thus increased tax revenues to the share of government spending decrease (however statistically insignificant); conversely, the negative effects of an increased tax burden (measured by WTI) are partially eliminated. As suggested by Boadway, Marchand and Pestieau (1992), legal tax evasion is practically possible only in the case of direct taxes. Countries with a relatively high share of direct tax revenues to indirect tax revenues will likely experience tax evasion to a lesser extent and the negative effect of an increased tax burden on government spending, as described above, is moderate.

For completeness, in both cases it has been confirmed a statistically significant negative effect of GDP growth on the share of government spending, contradicting the Wagner's Law. This can be attributed to the austerity fiscal policy adopted by a large number of countries in the reference period, due to the economic crisis.

The lagged value of the share of government spending is also negative (statistically significant only in the case of the WTI). There is thus no proof of the inertia or persistence of government spending, but rather a negative reaction of government spending in the current period to high government spending in the previous period. This can probably be related to the issue of savings due to the rehabilitation of previous government debt.

5. Conclusions

The article builds on the previous studies of the authors and explores the effect of the effective tax burden and the economic growth on government spending in OECD countries for the period 2005-2010. To approximate the level of taxation, the tax quota and the WTI indicator of the authors' own design are used. The authors have employed the VAR model with the generalized method of moments. The analysis has also employed the technique of dummy variables and the created interaction member to study the above relationship within two basic groups of countries based on tax distortion criteria.

The second equation of the model described the effect of taxation and economic growth on the share of government spending. The empirical analysis results diverge from economic theory, especially as regards the impact of economic growth on the level of government spending. This can be attributed to non-standard fiscal measures in response to the economic crisis, which affect a large part of the reference period. It has been shown that taxation has a statistically significant positive impact on government spending, if we use approximate taxation through the tax quota. This is probably not inconsistent with the economic theory of the public choice school, which says that growing revenues is reflected in an increased share of government spending. If WTI is used to measure the tax burden, increasing effective taxation is, conversely, reflected in declining government spending, which can be attributed to legal tax evasion or the crowding out effect associated with the Laffer curve. In countries with a large share of distortionary taxes, the positive effects of increasing the tax quota become smaller (statistically insignificantly), and conversely, the negative effects...
Interaction of the taxation, economic growth and government spending

of an increasing tax burden (WTI) are partially eliminated, since these countries, characterised by high direct tax yields, probably suffer from tax evasion less frequently.

The above suggests that the WTI is a suitable indicator for tax burden approximation and a very important alternative to the tax quota. It is applicable not only to compare the tax burden in individual countries, but also as a tax burden indicator in macroeconomic models. The WTI can also modify the conclusions in these as well as other econometric models that examine the influence of institutional and economic variables on key, and currently very frequently used quantities such as the level of corruption (Kotlánová and Kotlán, 2012) and it can serve as suitable indicator for fiscal policy authorities (for more on its goals, see Kotlán, 2001).

Acknowledgements

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Abstract: Many of the operational decisions taken in the current processes from universities use dichotomous thinking, characterized by the division of the elements analysed into two distinct classes, according to the bivalent logic 1 / 0, “it belongs” or “it does not belong”. The concept of fuzzy set introduced in mathematics by L. Zadeh in 1965 allows a less rigid modelling, with various nuances, of certain phenomena, by considering several intermediate degrees of membership, placed between full membership and non-membership of the elements analysed to a certain attribute. In Romanian public universities, the places allocated to faculties can be funded by the state budget (budgeted places) or on tuition fees, the entrance being based on an entrance examination. The present article puts forward a model based on fuzzy techniques which establishes a student’s belonging to the set of budget students. The model does not change the financial input of the university and could represent an important motivator for students. An algorithm is developed and a numeric example is presented.

Keywords: decision-making model, fuzzy set, university management

USING FUZZY MODELS IN UNIVERSITY OPERATIONS MANAGEMENT

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1. Introduction

The process of decision-making represents an important part in the management of an organization. This is a difficult process due to the fact that, in many cases, there are incomplete elements and inaccurate information. Operational decisions which are taken in current processes within universities and which are centred on university students are particularly sensitive, given the competition on the education market in our country. Generally, these decisions use dichotomous thinking, characterized by the division of the elements analysed into two distinct classes, according to the bivalent logic 1 / 0, “it belongs” or “it does not belong”.

The concept of fuzzy set, arisen out of the need to measure vagueness, imprecision, quantitatively, was introduced in mathematics by L. Zadeh in 1965. Zadeh (1965) states that the fuzzy set theory is not aimed at replacing probability measures of stochastic randomness, but to provide... a natural way of dealing with problems in which the source of imprecision is the absence of sharply defined criteria of class memberships rather than the presence of random variable.

Kaufman (1998) describes the fuzzy set theory as... a body of concepts and techniques that gave a norm of mathematical precision to human cognitive processes which in many ways are imprecise and ambiguous by the standards of classical mathematics.

Zimmermann (1985) states: The fuzzy set theory provides a strict mathematical framework (there is nothing fuzzy about fuzzy set theory!) in which vague conceptual phenomena can be precisely and rigorously studied.

Using a vague language, a fuzzy set is a set where there is no sharp transition from membership to non-membership of an element to this set. The basic idea is the following: if X is a classical set, in which membership is dichotomous, any subset $A \subset X$ can be identified by its characteristic function:

$$\chi_A : X \rightarrow \{0,1\},$$

where

$$\chi_A(x) = \begin{cases} 1, & x \in A \\ 0, & x \notin A \end{cases}$$

So, the set of the parts of X is in bijective correspondence with the set of functions $f : X \rightarrow \{0,1\}$

The classical theory has bivalent logic as a model. The model for the theory of fuzzy sets is continuous logic. Fuzzy sets of X are in bijective correspondence with the set of functions: $f : X \rightarrow [0,1]$.

In (Zadeh, 1965) a fuzzy set is defined as follows: let $X = \{x_1, x_2, ..., x_n\}$ be a universe of discourse, a fuzzy set $A$ is characterized by a membership function $\mu_A : X \rightarrow [0,1]$, which associates to each element $x_j \in X$, the degree of membership $\mu_A(x_j)$,

$$A = \{(x_j, \mu_A(x_j)) , x_j \in X\}$$

(1)

In the particular case when $\mu_A$ only takes the values 0 or 1, the fuzzy set $A$ is a classical subset of $X$.

The definition of fuzzy sets clarifies the distinction between random and fuzzy: the random phenomenon is the result of uncertainty regarding the membership or non-membership of an object to a class; in a fuzzy phenomenon, there are several intermediate degrees of membership, set between full membership and non-membership.
2. Admission to universities

In the state universities from Romania, the places allocated to faculties for Bachelor’s and Master’s degrees can be funded by the state budget (budgeted places) or on tuition fees, the entrance being based on an entrance examination. Regardless of the organization, following the entrance examination, each candidate for the Bachelor’s degree obtains a grade which is the result of the weighted average of the tests taken and / or the high school graduation grade. The calculation of the final grade can also consider grades the candidate obtained during high school for certain subjects directly related to the program of study chosen.

For the Master’s degree, the entrance examination is represented by a grade which is the weighted average of the tests taken and / or of the faculty graduation grade point average. To various extents, the calculation of the final grade can also consider other specific criteria defined for the Master’s program under consideration.

Universities, based on university autonomy, develop their own methodologies for admission, which include the calculation of the final grade for each program of study, Bachelor’s or Master’s degree.

The final ranking is obtained by ordering the candidates’ grades decreasingly and then, considering the number of places funded by the state budget (budgeted places) attributed, the membership or non-membership to the set of budgeted places is established. The system of establishing the membership to the set of budgeted places is applied after each year of study (in some universities after each semester).

This raises the question of the equity of the system as regards the membership to the set of budgeted places. For example, the final ranking of the admitted students for a program of study having 80 places on the whole (30 budgeted places and 50 tuition-fee places) may look like this:

<table>
<thead>
<tr>
<th>Position</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9.85</td>
</tr>
<tr>
<td>2</td>
<td>9.83</td>
</tr>
<tr>
<td>...........</td>
<td></td>
</tr>
<tr>
<td>29.8.28</td>
<td></td>
</tr>
<tr>
<td>30.8.29</td>
<td></td>
</tr>
<tr>
<td>...........</td>
<td></td>
</tr>
<tr>
<td>31.8.30</td>
<td></td>
</tr>
<tr>
<td>32.8.31</td>
<td></td>
</tr>
<tr>
<td>33.8.33</td>
<td></td>
</tr>
<tr>
<td>...........</td>
<td></td>
</tr>
<tr>
<td>80.6.45</td>
<td></td>
</tr>
</tbody>
</table>

It can be seen that the division into the two subsets is at least questionable for the candidates located in the vicinity of the demarcation line, for example, positions 25-35. It is frustrating for the candidate with the average 8.30 to pass into the tuition-fee places, not being convinced of the objectivity of the evaluation, given that the weighted average which defines the final mark of the entrance examination contains heterogeneous elements.

For example, in the case of the Bachelor’s degree programs, although efforts are made for the baccalaureate exam to become a national unitary exam, the tests are different, depending on the profile and specialization. Even the same test (e.g. mathematics) can have subjects with different degrees of difficulty depending on the type of education attended: theoretical, technological or vocational.

For masters programs, candidates may come from different universities, with a different content of the graduation examinations, with a different quality of the teaching process, certified by the Romanian Agency for Quality Assurance in Higher Education (ARACIS).
3. The fuzzy classification model

To establish a student’s membership to the set of budgeted places, we propose a model based on fuzzy techniques. The model will provide a degree of membership for each student to the set of budgeted places.

Let \( X = \{ x_1, x_2, \ldots, x_n \} \) be the set of students from a program of study.

We note with \( A \) – the set of budgeted places which defines the property to be a budgeted student and with \( \mu_A(x_j) \) the degree of membership to this property of each student \( x_j \in X \).

The degree of membership will be determined by the proposed algorithm. Depending on this degree of membership we can determine the amount of the tuition fee to be paid.

We note:
- \( n_1 \) – the number of budgeted places
- \( n_2 \) – the number of tuition-fee places
- \( n = n_1 + n_2 \)
- \( k \) – the number of places which defines the symmetric vicinity \( V \), of the demarcation line between the budgeted places and tuition-fee ones \( [n_1 - k, n_1 + k] \); obviously \( k < n_2 \).

\( T \) – the amount of the annual fee for a tuition-fee place.

Figure 1 shows the graph of the function which defines the degree of membership to the property to be a budgeted student.

![Figure 1. The function of the degree of membership](image)

4. The algorithm

**Step 1.** Input \( n_1, n_2, k, T \)

**Step 2.** For \( j \in \{1, \ldots, n_1 - k\} \) the degree of membership to the property to be a budgeted student is \( \mu_A(x_j) = 1 \). It results that these students will be entirely funded from the state budget.

**Step 3.** For \( j \in \{n_1 + k + 1, \ldots, n_2\} \) the degree of membership to the property to be a budgeted student is \( \mu_A(x_j) = 0 \). It results that these students will pay the full tuition fee \( T \).
Using fuzzy models in university operations management

Step 4. For places in the vicinity defined \( V = \left[ n_1 - k, n_1 + k \right] \) the degree of membership \( \mu_A(x_j) \) is calculated for the feature to be a budgeted student, considering a linear function of the evolution of the degree of membership in the interval \([0, 1]\) as follows:

- the equation of the line that passes through the coordinate points \( P_1(n_1 - k, 1) \) and \( P_2(n_1 + k + 1, 0) \) is established:

\[
y = -\frac{x}{2 \cdot k + 1} + \frac{n_1 + k + 1}{2 \cdot k + 1}
\]

\( (2) \)

- for \( \forall x_j, j \in \{n_1 - k + 1, ..., n_1 + k\} \) the degree of membership is established, according to the equation (2)

\[
\mu_A(x_j) = -\frac{j}{2 \cdot k + 1} + \frac{n_1 + k + 1}{2 \cdot k + 1}
\]

\( (3) \)

Step 5. Depending on the degree of membership determined, the fraction from the annual tuition fee \( T \) is calculated, that will be paid by each student from the vicinity \( V \):

\[
(1 - \mu_A(x_j)) \cdot T, \quad \forall x_j, j \in \{n_1 - k + 1, ..., n_1 + k\}
\]

\( (4) \)

Stop.

Remark 1. It can be easily demonstrated that:

\[
\sum_{j=n_1-k}^{n_1+k} (1 - \mu_A(x_j)) \cdot T = k \cdot T
\]

\( (5) \)

Equation (5) shows that the total amount of the tuition fees collected does not change. By means of this algorithm, the value \( k \cdot T \) (equivalent of \( k \) tuition fees) has been allocated to \( 2 \cdot k \) students.

Remark 2. In the case of several students in the vicinity \( V \) with the same average, the degree of membership is determined as arithmetic means of the degrees of membership. Thus, the fraction of the annual tuition fee to be paid is the same for all the students with the same average.

5. Numerical example

We consider the number of funded places \( n_1 = 30 \), the number of tuition-fee \( n_2 = 50 \) and \( k = 5 \). The vicinity \( V \) will be \([26, 35] \). For an annual fee of study \( T = 3000 \text{ lei} \), application of the algorithm leads to results in the following table:

<table>
<thead>
<tr>
<th>No</th>
<th>Average</th>
<th>Membership grade</th>
<th>Value fee fuzzy model</th>
<th>Value fee in the current tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9.86</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>9.83</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>25</td>
<td>8.45</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>26</td>
<td>8.40</td>
<td>0.9091</td>
<td>272.73</td>
<td>0</td>
</tr>
<tr>
<td>27</td>
<td>8.39</td>
<td>0.8182</td>
<td>545.45</td>
<td>0</td>
</tr>
<tr>
<td>28</td>
<td>8.37</td>
<td>0.7273</td>
<td>818.18</td>
<td>0</td>
</tr>
</tbody>
</table>
The amount of fees paid by students who occupy positions 26-35 is equal to the equivalent of five charges, ie $5 \times T = 5 \times 3.000 = 15.000$ lei, which would have been paid in the current system by the students occupying positions 31-35.

6. Conclusions

We believe that the model presented may be an important motivator for students. The model preserves the financial input obtained from tuition fees. The management of the status budgeted student can be made by cumulating the degrees of membership to this status. The slow switch from the status budgeted student to the status tuition-fee student can provide the necessary flexibility in a student-centred educational process, in which the decision should not be taken considering bivalent logic. We should not forget that between black and white there are many shades of grey which allow a nuanced reasoning in decision making, by using fuzzy techniques.

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About the author

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Abstract. This analysis aims to create a model for a complex system of decision support that can assist CCIBv (Chamber of Commerce and Industry of Braşov) staff in activities of mentoring local entrepreneurs or individuals willing to conduct economic activities in Braşov county. Besides the data-mining and business intelligence tools, the system proposed will also use geolocation tools and interactive maps. By using these components we will create the possibility to design reports in graphical, digital or mixed format. Based on this information, one could quickly draw the conclusion about which activities are profitable, where they are located and what the trend of that sector is. The results of the system will consist in making more efficient the consultancy services offered by CCIBv to people who want to pursue an economic activity in Brașov, through a thorough analysis of the economic information on the companies in the county and by drawing up reports on the trends in the different economic activities. The use of the new tools for data mining and business intelligence lead to better decisions based on the analysis underlying the large volumes of data and a better understanding of the reports obtained. This is achieved by creating a fully parameterized form of the result lists, which can contain graphs, numerical forms, arrangement of information on the geographical map in an interactive way.

Keywords: business intelligence, data-mining, geolocation, new information technologies.
1. Introduction

Since the main activities of CCIBv are opening business consultancy and advice in accessing grants, there is currently a need within CCIBv to process a large volume of historical data on the existence and activity of firms in the county.

The analysis is based on historical data stored within the MySQL database, existing in CCIBv, which, used in multidimensional OLAP (Online Analytical Processing) data cubes and data mining techniques can lead to achieving online dashboards, interactive as regards the decision support.

These dashboards or reports can be used later by CCIBv in the advice they provide, showing both the overall economic situation of the county, the situation regarding different fields of activities, types of activities, geographical area and, comparatively, between the above categories.

An important benefit of this research is represented by the development of models to draw general trends at economic, sector, activity level etc.

Consequently, using this development of the existing system, CCIBv will be able to provide improved additional consultancy, based on historical economic data. Thus, answers can be obtained for questions such as:

- What is the level of development of the economic activities in the county?
- What are the most profitable fields of activity and where are they geographically located?
- What are the fields of activity in which significant fluctuations were seen as regards the turnover as compared to other fields?
- What are the trends for each industry and aggregate at the county level?
- What are the most economically developed zones?
- What is the geographic distribution of economic activities in the county?
- What is the distribution of jobs in the county?
- What are the areas with the greatest number of jobs?
- What are the activities which recorded a positive or negative evolution for a specified period?

2. Technologies

The main technologies used is data mining and business intelligence tools, the analysis of structured data in n-dimensional cubes, OLAP type.

Besides these main technologies, we will also use data transfer technologies from MySQL databases into the n-dimensional data cube for the multi-criteria analysis of the historical data.

The success of the implementation of the model and of the development of the whole system consists in the correct identification of data analysis applications.

The building of the analysis models is based on data-mining processes. In general, data-mining refers to data analysis processes from different perspectives, resulting in a set of aggregate information useful in the information process, enabling the increase in revenues, lower costs, etc. Data mining processes are underpinned by data analysis software programs that allow users to analyse data from different perspectives, by using multiple sizes and angles of approach that can create relationships between data.
Data-mining enables organizations to find correlations between internal factors (costs, products, issues related to the personnel, ...) and external factors related to competition, the geographical distribution of customers, etc.

Data-mining creates aggregate reports on historical and transactional data.

The use of these tools is recommended for finding the answer to questions such as:

- What is the potential market?
- What is the market position relative to competitors?
- What are the most profitable products sold?
- What is the evolution of supply and demand?

By using a decision support system focused on the economic analysis of the local business environment, CCIBv will be able to offer superior consultancy, based on data from this application, by using historical data stored.

The application of modern technologies allows us to obtain more detailed reports, easy to understand, configurable and interactive, as compared to the existing system based on queries in MySQL database.

The novelty of the system is represented by the application of data mining and business intelligence technologies at the macroeconomic level, making analyses by sector, field of activity, or globally, by geographic areas.

3. The steps in implementing the system

The main activities to be undertaken chronologically in implementing the system are:

01. To analyse CCIBv services and identify those aspects that can be entirely covered by the developed decision support system;
02. To optimize information processes within CCIBv;
03. To identify patterns used in storing historical data in CCIBv in order to interface them with the new application;
04. To set n-dimensional data cube size based on which models of analysis will be applied;
05. To determine the degree of detail of the information in the final format of data aggregation in order to determine the size of the newly created database;
06. To create data transfer interface between the IT system used in the present CCIBv and the decision support system which will be developed;
07. The analysis and abstractization of the consultancy activity will enable the identification of the global requirements required by the decision support system. More specifically, emphasis is given to:

- the legislative framework under which processes work;
- the analysis of operations and rules that describe the manner of performing the operations;
- the identification and analysis of input and output data and of the structure that will be used by the decision support system;
- the identification of calculation algorithms and mathematical models, as well as of resolution methods;
- determining the necessary of hardware and software for the completion and operation of the decision support system;
- achieving predictions of information integration
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• the primary coverage of the entities, properties and relationships between activities using the computerized conceptual data model specific to the activity.

Figure 1. Performing consultancy using the proposed system

08. The design decision support system includes the following actions:
• defines the conceptual model of data processing for application by specifying the entities that are required and the relationships between them;
• establishes the architecture of the software;
• specifies the interfaces between software applications as well as those with the users;
• logical-level design of application components;
• establishes the general model of organization and operation of processing the application through reflection processes, operations, events and synchronizations required.

09. The detailed design of the decision support system involves the technical design by structuring its logical functional units and processors, simultaneously defining the elements that follow:
• defining the logical data model associated with the product in terms of relational concepts;
• define procedures, phases and automatic processing;
• specification of the static and dynamic relationships between programs.

10. The program design involves structuring the processing unit in multi-functional modules;
• description of the function of each module inputs, outputs and parameters;
• description of the interfaces between modules, specify conditions startup and termination chain execution and processing;
• encoding processing units and modules by translating algorithms in mathematical models;
• generate data to be tested, test execution and interpretation of results.
An analysis on creating a consultancy system for the chamber of commerce and industry

11. The integration of software and the testing work carried out comprises technical activities for carrying out the elements that provide interfaces between the procedures for implementation, on the one hand, and those of the users and the software package. The activities are carried out as follows:

- static and dynamic analysis of data integration and procedures;
- specification test procedures for acceptance CCIBv.

**Conclusion**

The use of the decision support system will determine, by the detailed analysis of the data, more value in providing better advice to operators.

Indirectly, by advising companies to access grants, larger refundable funds can be attracted in Brasov county.

Another advantage is represented by lowering the unemployment rate in Brasov County through a better targeting of economic activities due to the advice provided by CCIBv.

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Abstract. In the current economic context, the concern of every organization is to be permanently competitive, which represents its ability to maintain and gain new positions in the market in terms of competition. The purpose of this paper is to analyse how the implementation of well-chosen and correctly applied strategies can improve the performance of a company. The company in question is well-known, with international activity, and the examined strategy concerns the certification, respectively the implementation of the HACCP system for food safety.

Keywords: food quality, safety, quality management, danger, critical control point.

QUALITY STRATEGIES IN THE FIELD OF FOOD & BEVERAGE CASE STUDY: HACCP IMPLEMENTATION AT MCDONALD’S COMPANY

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1. Introduction

An analysis of the global economic picture illustrates the undeniable traits: fast diversification and renewal of the supply of goods under the impact of the dynamic development of science and technology, the globalization of markets and customers and increasing requirements of society. Under these conditions, the quality and safety of products and services emerged as a determinant factor of competitiveness of enterprises. Like Eyck et al. (2006) say, “Food can make people sick, and it is thought that nearly 70% of all food borne pathogens are introduced through human intervention”.

To ensure the safety of food consumers all the participants to the food chain have the possibility to implement the HACCP system. This system is an international standard and it was adopted on a large scale because of its efficiency and flexibility. HACCP can be used to monitor control measures and identify critical points during production process. (Sharma et al., 2011) “HACCP is preventive and proactive rather than corrective and reactive, HACCP programs help to alleviate the hazardous conditions by identifying and correcting hazards during food production, before they lead to an outbreak.” (Sharma et al., 2011).

HACCP system was developed by NASA to provide safe food and beverages for astronauts. (Eyck et al., 2006)

Food supply must correspond to food safety management systems, including Good Manufacturing Practices (GMP), sanitation services, hazard analysis and critical control points (HACCP).

The functions and the main principles of the HACCP method are the following:
- Analysis of flow hazards and work processes;
- Identification of the critical control points by steps and procedures;
- Establishing the minimal limits that must be followed;
- The elaboration of preventive, monitoring and corrective actions;
- Establishing the procedures of control the functioning and evaluation of the effectiveness of the HACCP method;
- Documentation of actions according to the activities undertaken.

(Mul et al. 2009).

This paper aims to demonstrate the importance of adopting HACCP system in the McDonald’s company.

2. Quality system of services

Quality assessment, especially in services field, is determined by the result of the comparison between what the consumer is expecting and what he actually receives. If there is a discrepancy between the consumer expectations and management understanding of these expectations, the service quality will be inferior (Niţă, V., 2004).

Assessment of service quality is extremely difficult due to the following reasons (Niţă, V., 2004):
- Simultaneity in production and consumption of services;
- Consumer participation in the serving process;
- The relationship that is established between the staff of the company in the field of services and the customer;
- The connections made between the service consumers in general.
Scientific studies have shown that the organizations in the service field which obtain important performances in quality, supports their activity on the following elements (Albu, Antonoaie, 2010):

• Setting up extremely high performance standards regarding the own quality achievements;
• Overseeing the process of performance by studying regularly both the company’s own achievements, and its competitor’s achievements, through specific methods: the “mystery shopper” test, analysis of suggestions and complaints;
• Constant involvement of the management in the quality issue through monthly analysis considering not only the financial results, but also the quality level of the provided services;
• Implementing programs for correcting inadequate services in order to solve customer complaints.

Those organizations that aim to provide superior benefits in terms of quality are required to ensure and control multiple sides of the quality of service, including (Albu, Antonoaie, 2010):

• The quality of the result refers to the customization/standardization, as well as the compatibility with other services;
• The quality of the service providing process relates to facilitating the access at services (location, facilities of use), response time (promptitude), the degree of tangibility (equipment, comfort, cleanliness, technology);
• The quality of contact with the service provider refers to availability (communication, listening, problem solving), consideration (courtesy, respect, customer focus);
• The quality of compliance is related to accomplishing the promises made by the company through the communications of marketing, the degree of functionality of the service, the provision of accurate and clear information’s to the client;
• Affective quality refers to the positive experience received from the consumer after providing the service, reducing the risks, ensuring trust, special treatment for the client, guaranteeing results.

Keeping under control the quality means that it has to be provided a range of variation of its level compared with the one prescribed. It is compared, for this purpose, the defining value of the quality characteristics with standards. In this way, there are established the necessary corrective measures throughout the entire manufacturing flow (Olaru, 2007).

A quality management system can provide the structure for continuous improvement to increase customer satisfaction and other stakeholders (shareholders, suppliers, employees). This system gives confidence for the customers regarding the fact that the organization is able to offer products that satisfy continuously the requirements (Oprean, Kifor, 2002).

The quality management system has as main objectives establishing the set of requirements prescribed for products/services, measuring the performances according to the prescribed requirements and developing the quality improvement program (Pruteanu, Iordânescu, 1998).

The basic demanding on quality is the importance given to quality factor in the overall strategy of that enterprise, and the capacity and availability of employees to consider quality management as a process of continuous improvement (Băltescu, 2010).

Design and implementation of quality systems are influenced by the changing needs of the companies, their specific objectives, the products that are provided, the services provided, as well as the specific processes and procedures used (Filip, 2013).
3. McDonald’s presentation

The giant corporation McDonalds is the biggest fast food restaurant chain from the world, serving approximately 68 million customers per day from 119 countries. (http://www.historia.ro/exclusiv_web/general/articol/istoria-primului-restaurant-lantulmcdonalds;)

Nowadays, McDonald’s is:
- The most successful brand of all times – award received at Cannes, June 2011;
- The fourth biggest brand in the world, as value, according to Millward Brown, 2012;
- The best managed business in the world, according to the magazine Fortune, 2011.

The company is present in Romania since June 1995, when the first restaurant was opened at the ground floor of the Unirea Shopping Mall. In May 2009, the company was operating a network of 60 restaurants in 20 cities from the country and had more than 4000 employees, more than 40% working part-time. In the period of 15 years of presence in Romania the company has invested 300 million euro in the network development and had more than 500 million customers, an average of 140000 customers per day. (http://mcdonalds.ro/pages/lumea-mcdonalds/companie/istorie.)

The company’s main field of activity is “Food services-Restaurants” according to CAEN 5610 code.

McDonald’s Romania is collaborating with several suppliers for the development of Quality services and for maintaining the values which made them famous. That is why McDonald’s partners meet customer’s expectations with products and services of highest quality.

Among the most important suppliers can be mentioned:
1. The distribution centers HAVI Logistics have the most advanced operation and security systems for the guarantee of purchase, fulfilling high quality standards for food and non-food products. The logistic structure HAVI is developed to meet the temperature requirements: freezing, refrigeration and ambient temperature. The logistics for the restaurants McDonald’s in Romania is provided by the distribution centers from Bucharest and Deva.
2. The Coca-Cola company is the biggest soft drinks producer in the world, offering customers all over the world more than 500 brands of soft drinks.
3. Titan S.A. sole supplier for the McDonald’s rolls in Romania, meets customers requirements with products made according to the highest norms of hygiene and food security. The rolls are kept fresh, without adding conservatives, with the help of an advanced air filtration system which creates an aseptic environment for all the products.
4. ANGST - the brand was consolidated through its exceptional products, based on authentic recipes, using exclusively high quality meat, without food additives. The Angst ham type, of highest quality, is the main ingredient from a few products which can be found in any McDonald’s restaurant from Romania.
5. HOCHLAND, important supplier of cheese for McDonald’s Romania, meets all the security and food hygiene standards and meets the customer’s requirements with products of highest quality.
6. The company EISBERG is the main supplier of salad and vegetables for McDonald’s Romania.

The main customers of McDonald’s restaurants are children, young people and young families from the urban area. In order to attract children, McDonald’s has invented the menu „Happy Meal” with a variety of toys for capturing the interest of children. For this
Quality strategies in the field of food&beverage

For young people, the restaurants McDonalds offer reasonable prices for all pockets, but also offer alternative menus for all tastes having also vegetarian products, all served in an atmosphere where quality, cleanliness and relaxation reigns. (http://www.businessteacher.org.uk/free-business-essays/mcdonald.php)

**SWOT Analysis**

1. **Strengths**
   
   The strengths of McDonald’s restaurants are the fact that, in order to fulfill objectives regarding quality, food security, customer’s attraction, the company has a very big cash flow for investments, being the first in the fast food industry regarding the continuous innovation and the development of product range. Another strength is that the company has created a loyal flow of customers.

2. **Weaknesses**
   
   In the present days the focus is on a healthy lifestyle, the fast food products being criticized by doctors for the long term effects. The McDonald’s products are well known for the high level of calories, and the products with fewer calories are being ignored. McDonald’s has not aligned yet at the trend for offering organic products.

3. **Opportunities**
   
   McDonald’s company can adapt to the trend and offer healthier products as fruits, salads, fish, grill chicken, etc. In order to attract the customer segments oriented towards a healthier lifestyle, the restaurants have promoted the coffee 100% natural together with the relaxing atmosphere improved with wireless internet, the customers preoccupied by slimness being more attracted by these advantages.

   Another opportunity for McDonald’s restaurants is represented by the improvement of the children playgrounds and the promotion of programs for a healthier lifestyle. Also, the social responsibility is a success factor for any business nowadays, the company being appreciated for wanting to reduce the impact on the environment by using different recycling methods (Bratucu, Boscor, 2008).

4. **Threats**
   
   The biggest threats for McDonald’s restaurants are represented by the social changes as the campaigns for encouraging a healthier lifestyle, for consuming 5 fruits and vegetables per day. Big competitors have already came up on the market, using in their business organic and fresh products, as, for example, Subway.

4. **Implementation of HACCP system**

   Safety and welfare of the clients is the McDonald’s priority, and this is the reason why the company supports maintaining high quality standards, based on researches and evaluations.

   Food supply must correspond to food safety management systems, including Good Manufacturing Practices (GMP), sanitation services, hazard analysis and critical control points (HACCP).

   The functions and the main principles of the HACCP method are the following:

   - Analysis of flow hazards and work processes;
   - Identification of the critical control points by steps and procedures;
   - Establishing the minimal limits that must be followed;
   - The elaboration of preventive, monitoring and corrective actions;
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- Establishing the procedures of control the functioning and evaluation of the effectiveness of the HACCP method;
- Documentation of actions according to the activities undertaken.

By implementing the HACCP safety system, McDonald’s benefited from a number of advantages and benefits, among which may be mentioned:
1. Improved image of the company and increasing the credibility in international markets, as well as towards potential investors;
2. Creating a competitive advantage;
3. Provides a framework for control and intervention within the company leading to reduced consumption that generates loss;
4. It uses preventive measures and reduces the number of undue actions to correct the rejected products;
5. Preventing the transmission of possible diseases from animal to human;
6. Preventing outbreaks of food poisoning, affecting consumer’s health;
7. Restores confidence in security of food products by guaranteeing the hygienic quality of products;
8. Increases the employees’ trust in the company by improving the labor conditions;
9. Meets the current requirements of the market regarding the development of organic products;
10. Web discussion group;
11. Newsletter and update free of charge.

**HACCP system for the product „Pork sandwich and horseradish sauce”**

The product contains 1 slice of meat McRib, mustard sauce with horseradish, white onion chopped, sliced pickles, roll.

The nutritional value of the product are specified in table 1

<table>
<thead>
<tr>
<th>Energy</th>
<th>Proteins</th>
<th>Fats</th>
<th>Carbohydrates</th>
<th>Fibers</th>
<th>Salt</th>
<th>Saturated fats</th>
<th>Sugars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kcal/portion</td>
<td>g/portion</td>
<td>g/portion</td>
<td>g/portion</td>
<td>g/portion</td>
<td>g/portion</td>
<td>g/portion</td>
<td>g/portion</td>
</tr>
<tr>
<td>665</td>
<td>32</td>
<td>41</td>
<td>40</td>
<td>3</td>
<td>2.7</td>
<td>13</td>
<td>4</td>
</tr>
</tbody>
</table>

The diagram of the technological flow for this product comprise following operations:
- Preoperational hygiene;
- Quantitative and qualitative reception of the refrigerated and conserved pork meat and auxiliary material **PCC1**
- Meat storage and auxiliary materials storage **PCC2**
- Brant preparing
- Pork chest preparing
- Auxiliary materials preparing **PCC3**
- Meat settle
- Boning, cutting and notching
- Spices mincing and weighing
- Selection
Quality strategies in the field of food&beverage

- Mincing
- Salting mix
- Mixing with salt solution
- Maturation
- Cold water
- Cutting
- Filling in ham
- Lining form
- Labeling
- Delivery
- Thermic treatment at 82°C, 60 min./Kg
- Cooling at 2...5°C, 12h PCC4
- Fashioning and paper packaging
- Finished product storage PCC5

5. Discussions

The HACCP plan presented in table 2 details in each stage, dangers arising, control measures, people responsible with that activity, the method used and the monitoring frequency. It can be observed that the stages were the product can be damaged are reception, meat storage, auxiliary materials preparing, cooling and finished product storage.

*Table 2*

<table>
<thead>
<tr>
<th>Stage</th>
<th>Important danger</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reception</td>
<td>B – Pathogenic microorganisms C – Mycotoxine, antibiotics, hormones</td>
</tr>
<tr>
<td>2. Meat storage</td>
<td>B – Pathogenic microorganisms</td>
</tr>
<tr>
<td>3. Auxiliary materials preparing</td>
<td>B – Pathogenic microorganisms C – Auxiliary materials in excess</td>
</tr>
<tr>
<td>4. Cooling</td>
<td>B – Pathogenic microorganisms</td>
</tr>
<tr>
<td>5. Finished product storage</td>
<td>B – Pathogenic microorganisms</td>
</tr>
</tbody>
</table>

B – represents biologic danger  
C – represents chemical danger

PCC (The critical control point) represents a point which, under permanent supervision of prescriptions and specialized guidance, will lead to the elimination or risk reduction to an acceptable level.
Table 3

HACCP plan for the product „Pork sandwich and horseradish sauce”

<table>
<thead>
<tr>
<th>Stage</th>
<th>Danger</th>
<th>Control measures</th>
<th>Monitoring procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Caretaker Method Frequency</td>
<td></td>
</tr>
<tr>
<td>Reception</td>
<td>Mycotoxin, antibiotics, hormones</td>
<td>Health certificate Analysis bulletin</td>
<td>Reception committee chief Documents Control At each reception</td>
</tr>
<tr>
<td>Meat storage</td>
<td>Pathogenic microorganisms</td>
<td>Monitoring environment parameters</td>
<td>Administrator Computer records Continuous</td>
</tr>
<tr>
<td>Auxiliary materials</td>
<td>Auxiliary materials in excess</td>
<td>Correct weighing</td>
<td>Operator Quantitative Each batch</td>
</tr>
<tr>
<td>Preparing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling</td>
<td>Pathogenic microorganisms</td>
<td>Monitoring environment parameters</td>
<td>Operator Computer records Continuous</td>
</tr>
<tr>
<td>Storage finished</td>
<td>Pathogenic microorganisms</td>
<td>Monitoring environment parameters</td>
<td>Administrator Computer records Continuous</td>
</tr>
<tr>
<td>product</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

According to table 4 it can be noticed, for each stage, the corrective actions, the needed documents and also the people responsible with corrective actions.

Table 4

HACCP plan for the product „Pork sandwich and horseradish sauce”

<table>
<thead>
<tr>
<th>Stage</th>
<th>Corrective actions</th>
<th>Documents</th>
<th>Caretaker corrective actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reception</td>
<td>Batch rejection</td>
<td>Reception register</td>
<td>Production manager Procurement chief</td>
</tr>
<tr>
<td></td>
<td>Selection of suppliers</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Staff training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meat storage</td>
<td>Transfer in another location</td>
<td>Record storage</td>
<td>Production manager Mechanic Administrator</td>
</tr>
<tr>
<td></td>
<td>Maintenance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Staff training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auxiliary materials</td>
<td>Rejection of semi-finished products</td>
<td>Production report</td>
<td>Head of department</td>
</tr>
<tr>
<td>Preparing</td>
<td>Mix with another batch</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Metrological check</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Staff training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling</td>
<td>Transfer in another location</td>
<td>Cooling sheet</td>
<td>Mechanic Operator Production manager</td>
</tr>
<tr>
<td></td>
<td>Maintenance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Staff training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage finished</td>
<td>Transfer in another location</td>
<td>Storage sheet</td>
<td>Production manager Mechanic Administrator</td>
</tr>
<tr>
<td>product</td>
<td>Maintenance</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Staff training</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Immediate delivery</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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Monitoring represent a planned and documented sequence of measurements of significant parameters for preventing, eliminating or reducing at an acceptable level of a relevant risk.

The definition of a monitoring system requires documentation of issues which could answer the following questions: what?, how?, when? Who?

What? – Definition of critical parameters for each PCC which will be subject to monitoring;

How? – Definition of the method through which the critical parameters will be measured (example, visual control, sensorial assessment, measurement of physical features);

Where? – Definition of the document where results will be recorded;

When? – Definition of monitoring frequency, mentioning that ideal would be a continuous monitoring;

Who? – Definition of responsibility for monitoring and recording the results obtained.

In conclusion, the HACCP plan must contain all data regarding the dangers shown for each product/process, all information which lead to the identification of the monitoring system, of corrective actions and the related registration documents.

6. Future research and conclusions

McDonald’s is a company which takes into account and rigorously applies procedures linked to quality and control, and in order to remain a leader in the quality control it is proposed the compliance of the rules mentioned in the previous chapters for the food processing and storage involving the following:

6. Identifying the dangers and the assessment of their severity and risk;

7. Determining the control critical points necessary to identify the biological, physical, chemical risk;

8. Establishing indicators for following the control critical points;

9. The specification of the indicators critical limits;

10. Establishing and implementing the continues monitoring methodology, periodical or needed investigations, monitored;

11. The performance of corrective actions at the occurrence of critical limits;

12. The permanent check of the system’s functionality and the valorization of information.

The benefits obtained after applying and obeying the rules linked to quality and control are:

13. The increase of customers satisfaction and of the market share;

14. Improving the quality of products;

15. Increasing flexibility in using resources;

16. Decreasing the answer time for orders because of a more efficient and shorter development cycle;

17. The increase of employees’ satisfaction;

18. The increase of the number of loyal customers;

19. The reduction of scraps and customers’ complains;

20. Improving the image and the company’s credibility.

As a conclusion, with the successful expansion of McDonald's on several international markets, the company has become a symbol of globalization and spread of American lifestyle. The company was prominent in influencing the way of eating for different social classes and has created a public debate linked to obesity, corporate ethics and responsibility towards the consumer.
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Abstract. Travel planning and booking on the web has become one of the important issues of this activity. With the rise of the user-generated content the travelers’ experiences have had an increasingly significant role as source of information. This paper proposes a portal that could automatically analyses content from various tourism-related sources and presenting a score to the user. The first part of the paper makes an introduction in electronic tourism while the second part presents our proposal.

Keywords: tourism, natural language processing, ontologies, social networks, opinion mining.

A PROPOSAL FOR AN INTERACTIVE SYSTEM FOR ASSISTING TOURIST DECISION MAKING

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1. Introduction

Over the past years, as the Internet has developed explosively, the world tourism industry has faced a rapid change. Thus, the traditional vertical distribution chains made room for a new and more complex network of values, comprising a large variety of suppliers both inside and outside the tourism sector. Within this context, specialists have showed WTO, 2011 on several occasions that tourism related activities can no longer be based only on traditional elements such as infrastructure, airline tickets, accommodation, promoting materials in the tourism agencies. This happens due to the fact that tourism in general is based more and more on communication, so IT&C, culture and local society, education, workplace and fun become all parts of a quality tourism. Connecting different journeys, linking them to specific economic sectors and to society, leads to a significant level of integration, so we can now speak about a network of value in tourism and not about a value chain (Figure 1 – WTO, 2011).

Within the touristic network, value is created by linking the stakeholders inside and outside the tourism sector in different combinations in order to create and to use new opportunities. The informational support and decision assistance are also parts which could add value to the system.

![Figure 1. Value network for the tourist sector](image)

Travel planning and booking on the web has become one of the important issues of this activity. With the rise of the Web-2.0 user-generated reviews, (opinions, comments, the analyses on the travels made by travelers), the travelers' experiences have had an increasingly significant role as source of information. These are particularly relevant for hotel booking because such user reviews are more actual those that can be found in printed hotel guides, for instance; in addition, they are not biased by marketing considerations (hotel home pages or descriptions from catalogues) and they describe the guests' genuine experiences.
A proposal for an interactive system for assisting tourist decision making

Regular sites of tourist agencies enable users to view and search for destinations at the same time enabling users to book and/or to pay for vacation packages. At a higher level of sophistication we may find tourism portals that incorporate deals of many tourist agencies and enable searching from one point on the Web. When using this kind of systems the user spends a lot of time studying the Web content with destinations that equal users’ wishes.

Applying artificial intelligence (AI) techniques in E-Tourism could help resolve this problem by providing (Damljanovic, Devedžic, 2009a):

- data that are semantically enriched, structured and thus represented in a machine readable form;
- easy integration of tourist sources from different applications;
- personalization of sites: the content can be created according to the user profile;
- improved system interactivity.

2. Literature overview and portal proposal

The present paper proposes a portal that offers tourists complete information about destinations in the Brasov area. They can search for destinations by using several criteria (e.g. accommodation type, food service, budget, activities during the vacation, and user interests: sports, shopping, clubbing, art, museum, monuments, etc.). The users can also read about the weather forecast and events in the destination classified according to their preferences. The results will be classified according to the recommendations provided by other users, obtained from social network applications and analyzed by means of natural language processing techniques for collecting opinions. All this is going to be integrated in that users will be able to devise their "perfect holiday" through the dynamic packaging offered by the system, with a view to optimizing the function quality-opinions-cost-preferences at user level.

The basis of the portal could consist of ontologies that will be adapted and developed for the tourism sector in Romania. The adaptation will reside in the fact that not only tourism concepts will be considered, but also concepts describing tourists, their interests and activities. According to Damljanovic, Devedžic, 2009b, in order to develop a tourism portal capable of intelligent reasoning, it is necessary to:

- Build some initial knowledge in the system;
- Introduce user profiles;
- Maintain knowledge automatically during the user's interaction with the system.

Therefore the knowledge collected in a machine-readable form decreases the user's input and improves search. Moreover, the portal should be able to collect useful Web content and extract interesting information for the user. For developing knowledge in a machine-readable form, it is necessary to advance and use a set of ontologies to symbolize all important concepts and their relations. Ontologies also enable knowledge distribution and reuse between applications while developing intelligent Web services by using Semantic Web technologies and tools.

According to Aichholzer et al., 2003, E-Tourism comprises electronic services which include:

- Information Services (IS), e.g. destination, hotel information.
- Communication Services (CS), e.g. discussion forums.
- Transaction Services (TS), e.g. booking, payment.

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Among these three services, Information Services are the most present on the Web. Hotels usually have their Web sites with details about the type of accommodation, location, and contact information. Some of those Web sites even offer Transaction Services so that it is possible to look at the prices and availability of the accommodation for the requested period and perform booking and payment. Transaction Services are usually concentrated on sites of Web tourist agencies such as Expedia, Travelocity, Last minute, etc. These Websites sometimes include Communication Services where people who visited certain hotels give their opinion and reviews. CS are usually present in the form of forums, although some of the Web sites such as www.43places.com specialize particularly in this kind of service where visitors have the chance to post their opinion, experience or recommendation about different types of destinations. Some E-Tourism systems nowadays offer Information Services, but for comprehensive details about a certain destination (e.g. activities, climate, monuments, and events) the user often must search for other sources. Apparently, all of these services are distributed on different places on the web and there is an “information gap” between them. According to Taufatofua and Tokotaha, 2002, the best way to solve this problem would be to enable communication between different tourist applications. For Transaction Services, this is already partly achieved by using Web portals that serve as mediators between tourists and tourist agencies. These portals (e.g. Bookings.com) gather vacation packages from different vendors and use Web services to perform booking and sometimes payment. Communication Services are tightly coupled with Information Services, in a way that the integration of the first implies the integration of the latter. Damljanovic, Devedžic (2009b), discuss that one of the main reasons for the lack of interoperability in the area of tourism is the tourism product itself: immaterial, heterogeneous and non-persistent.

From our perspective, activating communication between all these applications entails considerable resources from the economic agents involved, given that they need to change their applications (IS, CS or TS) in order to activate the interoperability. The portal we propose strongly simplifies this approach due to the fact that we will extract data dynamically from the internet and we will aggregate them using Semantic Web technologies which can be used to enable communication between information services dispersed on the Web. Furthermore, the proposed portal combines at the same time data, obtained via communication services, based on the opinions from specialized sites this leading to better services in E-Tourism (Figure 2).

Hepp et al., 2006 claim that “Everything is there, but we only have insufficient methods of finding and processing what’s already on the Web” (p. 2). This statement reveals some of the reasons why Semantic Web is not frequently applied in real-time applications: Web today contains content understandable to humans hence only humans can analyze it. To retrieve information from applications using computer programs (e.g., intelligent agents) two conditions must be met: 1) data must be in a machine-readable form 2) applications must use technologies that provide information retrieval from this kind of data.

Many academic institutions are making efforts to find methods for computer processing of human language. Cunningham, 2002, presents GATE (General Architecture for Text Engineering) as an infrastructure for developing and deploying software components that process human language. It can annotate documents by recognizing concepts such as: locations, persons, organizations and dates. It can be extended to annotate some domain-related concepts, such as hotels, beaches, restaurant, points of interest.
A large number of ontologies for e-tourism have been developed to date. Hi-Touch, for example, is a tourism-related European project that makes use of the tourism ontology created by the Mondeca's working group Delahousse, 2003. In the context of this project, the ontology was improved by adding several concepts from the Thesaurus on Tourism and Leisure Activities developed by the WTO (World Tourism Organization) WTO (2001). The e-Tourism Working group at DERI (Digital Enterprise Research Institute), for its part, has created a tourism ontology named On Tour Prantner (2004). Also, under the scope of Harmonise, a further tourism-related European project, an ontology called IMHO (Inter-operable Minimum Harmonisation Ontology) Missikof et al., 2003 was developed. The SEED (Semantic E-tourism Dynamic packaging) research laboratory has developed the Ontology for Tourist Information Systems (OTIS) Cardoso, 2005. Other e-Tourism ontology is the Australian Sustainable Tourism Ontology (AuSTO) Jakkilinki et al., 2007. LA DMS is a comprehensive ontology for tourism destinations that was deployed in order for the Destination Management System (DMS) to become adaptive to user's needs related to touristic destinations information requests Kanellopoulos and Panagopoulos, 2008. Finally, in the SATINE project Flugge and Tourchantinova (2004), several ontologies have been created that can be used for service annotation in order to develop a semantic-based interoperability environment for integrating Web Services Platforms in the travel industry.

Given that most of the above mentioned ontologies are yet to be completed, and taking into account the shortcomings of developing a new ontology from scratch, it is possible to reuse one of the existing ontologies for e-tourism by adding new POI (Point Of Interest)-

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**Figure 2. General architecture for the proposed portal**

---
related classes and other combined properties. Also incorporating new specific classes into the ontology about the Romanian hotel industry that have been considered relevant after analyzing the available resources it is an important step. The resulting ontology will contain all the touristic information that the use case scenario requires.

For populating ontologies from text-based resources NLP techniques and ontological engineering could be used. Ontology Learning deals with the acquisition of new concepts and relations. As a result, the inner structure of the ontology is modified. Ontology Population has to do with the extraction and classification of instances of the concepts and relations that have been defined in the ontology. Instantiating ontologies with new knowledge is a relevant step towards the provision of valuable ontology-based knowledge services. In the last few years, a variety of approaches have been applied to Ontology Population from unstructured text Ruiz-Martinez, 2011. Many of them combine natural language processing techniques (such as linguistic pattern recognition and extraction, POS-tagger and syntactic analysis) with other machine learning techniques.

Concerning the initial requirements, namely resources or background knowledge, most of the approaches make use of Named Entity Recognition and Classification (NERC) modules. NERC is a subtask of information extraction that seeks to locate and classify the atomic elements within a text into predefined categories such as the names of persons, organizations, locations, expressions of times, quantities, monetary values, percentages Ruiz-Martinez, 2011.

Ontology population from text implies the existence of certain linguistic resources from which to obtain the instances, i.e., a corpus. A corpus is a collection of pieces of language that are selected and ordered according to explicit linguistic criteria, in order to be used as a representative language sample Sinclair (1996).

Reviews from popular sites like AmFostAcolo.ro or Booking.com (CS) will be analyzed using NLP techniques for obtaining grades regarding the opinions and sentiments for the proposed locations. Also, the proposed portal will take into account the reviews from social networking sites. The analysis systems will pre-analyze the language to filter out reviews in other languages than Romanian because, occasionally, the review sites contain reviews in other languages. The review texts will be segmented in segments (sentences). These segments are then subjected to further analysis by the statistical polarity classifier and linguistic information extraction components for finer grained analysis of the polarity and the topic of the review. The polarity values from the statistical and the linguistic classification are then combined into a joint global polarity value that is used for presenting the segments in the user interface.

The main task of the linguistic analysis components in the proposed system will be to identify the subject from a segmented text (what is talked about) and how these get rated within the segment. The core of that analysis is an information extraction (IE) component based on the SProUT platform (Shallow Processing with Unification and Typed Feature Structures Drozdzynski et al., 2004). SProUT is a rule based IE system combining finite state technology with unification on typed feature structures for imposing type constraints on possible feature values and propagating constraints by co references. The information extraction (IE) system will answer to the following questions:

- Topic of the review segment: what is evaluated?
- Dimension of the evaluation: what properties are evaluated
- Dimension value: what is the value on that dimension?
- Polarity of the evaluation: is it positive or negative or none at all (neutral)?
A proposal for an interactive system for assisting tourist decision making

For the IE component there could be developed a dictionary of domain-specific terms relevant for the hotel domain as well as a sentiment dictionary that associates basic polarity values with terms. Besides that, the dictionaries assign topic terms to a semantic category indicating what aspect of hotels this topic refers to, e.g. service. Also, the dimensions of evaluative terms are defined by the dictionary.

The goal of opinion mining can vary considerably. In many cases, one is only interested in a global overview: how many users/reviews rate a product positive or negative. For these, a global polarity classification is sufficient without having to go into details of a product. More fine-grained is an approach as that of Wilson et al. (2005) who present an opinion mining approach for news articles. They do not just global classification at document level but split up the review into phrases. Based on a predefined lexicon and contextual information they apply machine learning techniques for determining the polarity of the phrase. Unlike this method it is possible to identify specific features that are evaluated (e.g. “breakfast”, “service”, “clean”, “location” and “internet” are features the users can evaluate distinctly on Booking.com and Trip Advisor) automatically like in work of Popescu and Etzioni (2005) on mining opinions about products, but with application on the touristic sector. They describe an unsupervised information extraction system which determines the relevant features and the corresponding opinion. The method uses relaxation labeling Hummel and Zucker (1983) for finding the semantic orientation of words in the context of given product features and sentences.

Research in opinion mining often requires specific resources such as suitably classified corpora and sentiment dictionaries that associate terms with sentiments. For English, a large set of resources is publicly available for research. Therefore also most research is done on English data, such as (Popescu and Etzioni, 2005, Wilson et al., 2005, Aciar, S., 2009). For the Romanian language there are several studies but the only available tools are those presented in RomanianWordNet Tufis and Stefanescu (2012) and Bobicevet al. (2010). The proposed portal will combine these tools with corpora for the ontology classes previously created.

The tourism domain in not one of the mainstream domains for opinion mining research. Aciar (2009), uses a corpus of English reviews from tripadvisor.com in order to present a rule-based method for classifying opinions. Different from other approaches she takes also the context into account. This way she differentiates between the needs of a person on a business trip and the needs of the same person on a family trip. A larger English corpus also from tripadvisor.com is used in the study of Baccianella et al. (2009) that uses linguistic preprocessing with the SENTI Wordnet (Esuli and Sebastiani, 2006) but machine learning techniques for feature assignment.

The initial data regarding the costs will be estimated as following:
- Accommodation – data from Booking.com and Expedia.com;
- Fuel (car travelling) – estimation using Google Maps or free maps from Open Street Maps available via MapQuest. For travelling using other types of transportation (train, plane) data could be extracted from several sites using their APIs or using screen-scrapping.

Regarding the recommendation offered to the tourism users Schumacher and Rey, 2011 there could be accomplished a study regarding the types of recommendation for the packages that chooses or combines the following:
- Collaborative filtering;
- Defining some models based on association rules (service X fits best with service Y);
- Recommender system based on preferences, like “give me something that I liked before” and defined on the content-based recommender systems;
• Ontology-based, where the products from the catalogues and the user preferences are described using ontologies that our system already provides.

3. Conclusion

The model we propose is a theoretical one but it is based on existing works and applications. The most important and difficult part of the project would be to correctly define the ontology, its population with data from the internet and the opinion mining in Romanian language. Also, for the user interface, an important part would be to correctly apply the recommendations to the user.

References

A proposal for an interactive system for assisting tourist decision making


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Abstract. The understanding of tourist behaviour is vital for the marketing and management activities of a tourism organization. Consumer sovereignty has to be a rule for a company that wants to be profitable and better knowing the behaviour of the consumer represents one of the most important steps in achieving this goal. The aim of this article is to identify the main characteristics of the Romanian tourist behaviour in the 25-35 age category, an interesting category because of all the important events that are taking place in this frame time. The article is based on the findings of an exploratory survey-based research carried out in June 2013 on one hundred Romanian tourists that are in the 25-35 age category. The research is also a starting point for future research in the offline environment of this age category and also for a research of tourist typologies for other age categories.

Keywords: tourist; tourist behaviour; tourist motivation; tourist typologies; 25-35 age category.

ANALYSIS OF TOURIST BEHAVIOUR TYPOLOGIES. STUDY ON THE 25-35 AGE CATEGORY

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1. Introduction

Studying consumer behavior is a key element in developing any marketing activities aimed at developing, promoting and selling tourism products. (Horner and Swarbrooke, 2007). Catoiu and Teoșoescu (2004) define consumer behavior as representing all decision acts made on an individual or group level, directly related to obtaining and use of goods and services, in order to meet current and future needs, including decision-making processes that precede and determine these acts.

The tourist, the consumer of tourism products and services, is the key element for any tourism organization. His behaviour influences the revenues obtained by any business in the tourism industry. If the players from the tourism industry understand the behavior patterns of tourists, they will know where to intervene in the process to achieve the desired results. They will also know how to convince consumers to choose certain products which are made in a more effective way to meet their particular needs and desires.

Tourism is, by its nature, a service rather than a product, which may have significant effects on consumer behavior. It is complex, intangible and the tourist experience is strongly influenced by external factors. The tourist is buying an experience rather than a clearly defined product and he is part of the production process. There is also the fact that the tourist’s decision to buy a holiday has emotional value. This is explained through the fact that buying a holiday involves spending large sums of money and that a holiday represents probably one of the most important moments of the year for the tourist, a chance to get away from work and routine and revitalize the spirit.

In order to supply information for tourist behaviour, I developed a research of tourist behaviour and behaviour typologies for a particular age category.

2. Theoretical consideration on tourist behaviour

Over decades academics and marketing specialists thought to various ways to classify tourists based on certain common characteristics. Therefore, various tourists’ typologies and methods of segmentations appeared. Horner and Swarbrooke (2007, p. 81) consider these typologies to be important because they:

- Represent an attempt to increase the knowledge of consumer behavior in tourism.
- Can help marketers make important decisions on product development, pricing, promotional media and distribution channels.
- May form the basis of market segmentation techniques.
- Might help to predict future trends in tourist behavior.

According to European Travel Commission (2007), segmentation is important because people travel for different reasons. Each segment has its own needs, requirements and features. Pike (2008) add that the information is vital to promote tourism and to address target groups in the tourism market segmentation.

Catoiu and Teoșoescu (2004) mention the importance of patterns of consumer behaviour due to the complexity of understanding the consumer behavior in all its complexity. The models are designed to explain the mechanism of buying and consumption behavior and they can also help to forecast the consumer behavior.

Horner and Swarbrooke (2007, p.83) believe that one of the most important debate is about the extent to which people are tourists or travelers. The tourist is generally considered that who buy a package from a tour operator, while the traveler is the one who organizes the trip by himself. The idea of this classification is that the latter type is somehow superior or
Analysis of tourist behaviour typologies. Study on the 25-35 age category

better than the first. Therefore, many people who go on vacation with travel agencies want to be considered travel and not tourists.

Academics offer a wide range of tourists’ typologies and behavior typologies. Some of these typologies are the one proposed by Cohen, Westvlaams Ekonomisch Studiebureau and Smith.

Cohen (1979) divides tourists into five categories, based on the type of experience they are seeking:
- Recreational tourist – for whom the emphasis is on physical recreation.
- Diversionary tourist – seeks ways of forgetting their everyday life at home.
- Experiential tourist – looks for authentic experiences.
- Experimental tourist – the main desire is to be in contact with local people.
- Existential tourist – wants to become totally immerse in the culture and lifestyles of the vacation destination.

Westvlaams Ekonomisch Studiebureau (1986), after a study on 3000 Belgians, made a typology based on 7 types of tourists:
- Active sea lovers, who want to take a holiday by the sea, with a beach close by.
- Contact-minded holiday-makers, who value making new friends on holiday and being hospitably received by local people.
- Nature viewers, who want to be well received by the host population while enjoying very beautiful landscapes.
- Rest-seekers, who want a chance to relax and rest.
- Discoverers, who like cultural holidays and some adventure, but they also like to meet new people.
- Family-oriented sun and sea lovers.
- Traditionalists, who value safety and security and try to avoid surprises by sticking with familiar destinations and types of holidays.

Smith (1989) identified 7 types of tourists:
- Explorers (small group who travel almost as anthropologists).
- Elite tourists (experiences travellers who like expensive tailor-made tours).
- Off-beat tourists (aim to get away from other tourists).
- Unusual tourists (make side trips from organized tours to experience local culture).
- Incipient mass tourists (travel to established destinations where tourism is not yet totally dominant).
- Mass tourists (expect the same things they are used to at home).
- Charter tourists (have no interest in the destination itself).

In current literature there are available numerous classifications of motivational factors. Swarbrooke and Horner (2004) are proposing the following classification of the tourist motivations:
- psychological (relaxation, sun tan, exercise and health, sex).
- emotional (nostalgia, romance, adventure, escape, fantasy, spiritual needs).
- personal (visits to relatives and friends, new friends).
- personal development (raising the level of knowledge, learning a new skill).
- status (fashion, exclusivity, getting a good offer).
- culture (sightseeing, experience of other cultures).

Minciu (2004) speaks about the necessity of identifying tourist motivations from the perspective of the importance of consumer behavior and expenses made by tourists’ evaluation. She also supports the importance of classify motivation in:
leisure, recreation and holiday. 
visits to relatives and friends. 
business and professional reasons. 
medical treatment. 
religion / pilgrimage. 
other reasons.

3. Research methodology

The research objective was to identify the main characteristics of the Romanian tourist’s behavior in the 25-35 age category. This was accomplished through two tasks:

- Development of a questionnaire based on motivation typologies, established typologies of tourist behavior and geographic, socio-economic and demographic segmentation
- The tourist behavior research survey of people in the 25-35 age category

The gross sample value was computed based on the formula \[ n = \frac{Z^2 \cdot p \cdot (1-p)}{\Delta w^2} \], where 
\( n \) is the sample value, \( p \) is the ratio between the number of subjects possessing the studied characteristics and total population, \( t \) is the coefficient corresponding to the guaranteed confidence probability, and \( \Delta w \) is the maximum accepted error level. The value of “p” is determined based on statistical information published by National Institute of Statistics for year 2012. The number of subject possessing the studied characteristics was determined by determining the number of Romanian people engaging in tourism activities in 2012 and adjusting this value according to the percent of the studied population in the total population of Romania. In 2012, the arrivals of Romanian tourists in the the structure of tourism reception was 6,03 million people and the departures abroad of Romania visitors was 11149 people. The population of Romania in 2012 was 21,35 million people. This means that a percent of 28.29% of the Romanian population are engaging in tourism activities. Thus, we arrive at an adjusted value of 218 tourists. From the Statistical Yearbook of Population people in the age category 25-35 represent 16% of the total population of Romania. If we adjust the value of 218 tourists we obtain an adjusted value of 35 people.

The decision to analyze the behavior and motivations of tourists in the 25-35 age category is not arbitrary. The fertility rate for 25-29 years category is the highest, of 79.9 live births per 1,000 women in 2010. The average age of mother at birth is 26 years for the first birth and 27.6 years for all births. In terms of population by age groups, 25-29 and 30-34 age groups represent together 16% of the total population. The number of marriages for the analyzed age group accounts for 60% of all marriages. The average age of marriage is 30.9 years for the husband and 27.6 years for the wife. The 30-34 age category has the highest number of divorces, representing 21% of total divorces. The 25-30 and 30-34 age categories represent 27% of the total number of people who migrate internally. The “Immigrants by sex and age groups” indicator shows a total of 3955 immigrants per 26-40 age category of total emigrant of 7906, representing a share of 52 %. (Statistical Yearbook - Population, 2011).

Therefore, the 25-35 age group have certain characteristics:
- The age group with the highest fertility.
- The average age of mother at first birth (26 years) and average age of mothers for all births (27.6 years).
- Represents 16% of the total population of Romania.
- 60% of total marriages.
- The average age of marriage of husband and wife fall into the age range examined.
Analysis of tourist behaviour typologies. Study on the 25-35 age category

- 30-34 age category has the highest divorce rate.
- Internal Migration in the age category represents one third of all migrations and immigrations.

The survey was designed to deliver information on following issues: the importance of the holiday for tourists, the organization of the holidays, the people who is traveling with, the motivations for going on holiday, the holiday activities during the holidays, the average length of stay, the accommodation, comfort category, type of transport, the period of year preferred for holidays, favourite destinations and framing respondents into typologies proposed by academicians. The survey included also questions regarding the geographic, socio-economic and demographic segmentation.

In the Table 1 we can see the demographic profile of the respondents.

![Table 1](image)

**Demographic profile of the respondents**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>61</td>
</tr>
<tr>
<td>Male</td>
<td>39</td>
</tr>
<tr>
<td><strong>Matrimonial status</strong></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>25</td>
</tr>
<tr>
<td>Not-married</td>
<td>71</td>
</tr>
<tr>
<td>Divorced</td>
<td>4</td>
</tr>
<tr>
<td><strong>Education level</strong></td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>9</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>43</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>43</td>
</tr>
<tr>
<td>PhD degree</td>
<td>5</td>
</tr>
<tr>
<td><strong>Job</strong></td>
<td></td>
</tr>
<tr>
<td>Personnel with high education</td>
<td>48</td>
</tr>
<tr>
<td>Owner, freelancer</td>
<td>15</td>
</tr>
<tr>
<td>Manager, director</td>
<td>17</td>
</tr>
<tr>
<td>Trade worker</td>
<td>8</td>
</tr>
<tr>
<td>Student</td>
<td>4</td>
</tr>
<tr>
<td>Technician</td>
<td>4</td>
</tr>
<tr>
<td>Housewife</td>
<td>2</td>
</tr>
<tr>
<td>Unemployed</td>
<td>2</td>
</tr>
<tr>
<td><strong>Place of living</strong></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>98</td>
</tr>
<tr>
<td>Rural</td>
<td>2</td>
</tr>
<tr>
<td><strong>Monthly income</strong></td>
<td></td>
</tr>
<tr>
<td>0-1500 RON</td>
<td>14</td>
</tr>
<tr>
<td>1500-2500 RON</td>
<td>25</td>
</tr>
<tr>
<td>2500-3500 RON</td>
<td>24</td>
</tr>
<tr>
<td>3500-5000 RON</td>
<td>18</td>
</tr>
<tr>
<td>5000-10000 RON</td>
<td>17</td>
</tr>
<tr>
<td>Peste 10000 RON</td>
<td>2</td>
</tr>
</tbody>
</table>

In the presentation below I will refer mainly to the questions that were relevant for motivation analysis and for segmentation based on given typologies.
4. Summary of results

An impressive share of 56% of respondents said that usually they are organizing their own holiday, 21% said they use to buy a package from a travel agency, 23% assert that they use both methods. 87% of respondents consider the holiday of high or very high importance. 32% of respondents go on vacation in groups of more than 4 people, 28% of them travel only accompanied by spouse, 25% are traveling in a small group of less than 4 people. Only 3% are choosing to go on holiday alone. A relatively small percentage (12%) said they go on holiday with the spouse and children, which can be argued by the fact that the respondents still have no children or they are too small to travel with them.

56% of respondents tend to go on holiday for 2 or 3 times per year, with an average length of stay of 3-4 nights (52%) and 5-7 nights (38%). 44% of respondents are staying at hotel, 27% in guesthouse and 13% in camping. 50% choose a 3 star category, 23% choose unclassified units and 20% choose 4 star accommodation. 53% travel by car, 36% go on holiday by plane. 48% of respondents prefer seaside resorts, 26% choose predominantly urban area, 18% prefer mountain resorts. Pilgrimage destinations and resorts are the least rated categories. 51% choose destinations mainly in Romania and 49% prefer a different country to spend the holidays. Asked to name the main reason for going in holiday according to the classification of Minciu (2004), tourists chose: leisure and recreation (90%), visits to relatives and friends (4%), business and professional reasons (4%), religion/pilgrimage (2%).

Question 7 was aimed to determine the most frequent activities conducted by tourists during holiday. The responses were interpreted by using a semantic differential scale with 5 levels, where “1=never”, “5=always”. The respondents were given a list of 11 activities and 5 variants of answers: never, occasionally, relatively frequently, often and always. The following weighted average was computed for each of the 11 activities – going out in the evening in pubs, restaurants, clubs (3,76); going to beach or pool (3,53); spending time in nature (3,42); shopping (3,4); visits to places mentioned in tourist guides (3,33); visits to castles, historical sites and places of worships (3,3); visits to museums, galleries and exhibitions (3,2); sport activities, extreme sports (2,26); going to spa (1,86); cooking, painting, photography, traditional art classes (1,4); attending events like festivals (1,18).

Table 2

<table>
<thead>
<tr>
<th>Motivation categories</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological</td>
<td>31</td>
</tr>
<tr>
<td>Emotional</td>
<td>23</td>
</tr>
<tr>
<td>Personal</td>
<td>13</td>
</tr>
<tr>
<td>Personal development</td>
<td>12</td>
</tr>
<tr>
<td>Status</td>
<td>3</td>
</tr>
<tr>
<td>Culture</td>
<td>17</td>
</tr>
</tbody>
</table>

Asked to choose all the motivation categories for travelling that Swarbrooke and Horner proposed, the respondents answered according to Table 2.
Analysis of tourist behaviour typologies. Study on the 25-35 age category

Table 3

<table>
<thead>
<tr>
<th>Categories</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recreational tourist</td>
<td>44</td>
</tr>
<tr>
<td>Diversionary tourist</td>
<td>17</td>
</tr>
<tr>
<td>Experiential tourist</td>
<td>26</td>
</tr>
<tr>
<td>Experimental tourist</td>
<td>9</td>
</tr>
<tr>
<td>Existential tourist</td>
<td>4</td>
</tr>
</tbody>
</table>

Questions 19 to 23 provide different typologies offered by specialists and ask the respondents to choose the category they believe suits them best. In Shapley’s classification, 68% of respondents consider themselves travellers and 32% are tourists. 83% choose vacations that do not involve risks and 17% choose holiday with adventures. In Tables 3, 4 and 5 we can observe the categories of typologies respondents chose from the Cohen, Smith and Westvlaams Ekonomisch Studiebureau typologies.

Table 4

<table>
<thead>
<tr>
<th>Categories</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active sea lovers</td>
<td>29</td>
</tr>
<tr>
<td>Contact-minded holiday-makers</td>
<td>9</td>
</tr>
<tr>
<td>Nature viewers</td>
<td>16</td>
</tr>
<tr>
<td>Rest-seekers</td>
<td>15</td>
</tr>
<tr>
<td>Discoverers</td>
<td>24</td>
</tr>
<tr>
<td>Family-oriented sun and sea lovers</td>
<td>4</td>
</tr>
<tr>
<td>Traditionalists</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 5

<table>
<thead>
<tr>
<th>Categories</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explorers</td>
<td>8</td>
</tr>
<tr>
<td>Elite tourists</td>
<td>10</td>
</tr>
<tr>
<td>Off-beat tourists</td>
<td>22</td>
</tr>
<tr>
<td>Unusual tourists</td>
<td>26</td>
</tr>
<tr>
<td>Incipient mass tourists</td>
<td>5</td>
</tr>
<tr>
<td>Mass tourists</td>
<td>10</td>
</tr>
<tr>
<td>Charter tourists</td>
<td>20</td>
</tr>
</tbody>
</table>

5. Conclusions

The 25-35 age category has the particularity to be characterized by different stages of life such as: finishing studies and start working, transition from long holidays from school to short holidays from work, marriage and birth of the first child of newly formed family, families with small children, change of residence in another city or even another country.
The research is exploratory because it is only a starting point in the research of tourist segmentation. The limits are imposed by the relatively small sample - about 100 tourists - and the fact that the research is limited to tourists who fall in the 25–35 age category. We want to further research both in the offline environment and also in other age categories.

As we can see, the most tourists with age between 25 and 35 years are usually not married, with a good educational background (91% with bachelor studies), are usually working in companies but not yet on manager level and earning somewhere between 1500 and 3500 lei. They choose to organize their holiday by themselves, think the holiday is really important and usually travel in groups. The most important reason for travelling is by far for recreational reasons. The most frequent activities are going out in pubs, restaurant and clubs, going to beach or pool, spending time in nature, shopping and visiting places from tourist’s guides. They prefer seaside resorts. They usually take 2-3 holidays per year, choose 3 star hotels and travel by car.

The answers regarding tourist typologies showed that respondents think of themselves as travellers and not tourists and are recreational tourists according to Cohen typology, active sea lovers according to Wesvraams Ekonomisch Studiebureau typology and unusual tourists according to Smith typology.

As a conclusion, the approach of tourist behavior for the Romanian tourists in the 25-35 age category should be orientated toward very flexible tourist products, for groups of people, and based on recreational activities, seaside resorts and active night life.

References


About the author

Elena-Cristina MAHIKA graduated in 2008 from the Faculty of Commerce at the Bucharest University of Economic Studies. In 2010 the author finished a Master Program in Business Administration at the Bucharest University of Economic Studies, specialization: Tourism – Services. Currently the author is following a PhD Program in Business Administration in Tourism and Services, at the Bucharest University of Economic Studies. The PhD research is based on studying the behaviour of the cultural tourist.
Abstract. The statement that a man lives in a society makes sense only if the society is seen as a consequence of the manifestation of individuals’ needs to satisfy personal interests in the context of social cooperation. From this point of view, education is developed in society, being the result of interpersonal exchange relationships, but also a means to stimulate the social cooperation. However, justifying the existence of society’s interest in education, designed to separate the individual educational choice, is impossible. This paper is part of the major puzzles of the studies focused on economic growth, starting with the question: “Why the economic growth rate of a country and the level of GDP differ so much from one country to another?” The social capital is one of the forces that considerably influence the economic growth, and thus the well-being of a nation.

Keywords: social capital, human capital, physical capital, economic development.

THE ROLE OF SOCIAL CAPITAL IN THE ECONOMIC DEVELOPMENT

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1. Introduction

Talking about education and economic performance without making reference to human and social capital is like applauding with one hand.

Although education is not a panacea, it has multiple virtues and untapped resources for parents and educators, politicians, journalists, scientists and culture of human society. In this context, we say with conviction that it is the time for society to become educational, in a constructive, positive way. The economic development of a nation is closely related to available resources at any given time. Beyond the physical factors, those who are able to give the growth and development are the members of the implied nation. Work and its quality, the potential that each individual is willing to exploit in the economic activities, education and health level; all these characterize the human factor, generating capital.

Human and social capital - fundamental determinants of the economic progress- come from the need to approach the two concepts in the context of economic growth. There have been numerous studies that actually rank the human capital as an input in the production process and also as a factor of economic growth, but since the economy is not necessarily seen as a fusion between the human factor and the financial ones, being also affected by the nature and the quality of the interpersonal relationships, it is impetuously necessary to study the social capital in this matter.

In this paper, we have dedicated a special attention to the notion of social capital, as an educational determinant, and to the role that education and human capital have in the formation process. If the physical capital is formed by changes of material nature, aimed at getting the tools to facilitate production, similarly the human capital is created through transformation of individuals, which generates skills and capabilities that determine individuals to act in new ways. Thus, some form of human and capital resources are generated in order to create values in a variety of circumstances.

The ability to read, for example, is useful in any work relationship, but in-depth knowledge of nuclear structure is essential for a physician career, but useless for a football player. This distinction is almost as old as the concept of the human capital, but the question is how these two interact and their importance in employment. Thus, the labour market frequently explains education as a factor of economic growth.

Education is essential for any economy because it diversifies relations between man and society. The individual has the opportunity to contribute as a member of society to offset benefits from coexistence with the rest of individuals. From the moment it is born, the man is educated: in the family, given its cultural and religious affiliation, later in his relationships with the rest of the individuals in the society. Although education significantly contributes to the strengthening of links between people, it is more widely the result of cohabitation inside family and society.

2. Incursion in Social Capital

Currently, the biggest problem of human beings is the weakening of human bonds between members of society, this being the true source of social inefficiency. In the context where employees are in the position of the new society’s values, we have weaker family ties, weaker relationships with the others to whom we interact or inside informal groups where we formerly took part. From this reason, this research continues its thorough approach by addressing the concept of social capital and economic growth of a nation.
The role of social capital in the economic development

Those who have systematically studied the concept of social capital include: Pierre Bourdieu (Bourdieu, 1986) who predicts a possible determination between the features and capabilities of an individual and the environment in which they operate in. Later on, James Coleman (Coleman, 2000) examines the relationship between social and human capital in the United States.

In the perception of Portes (Portes, 2000), a source of capital is generated by the outer limits or constraints. According to Edward Glaeser (contemporary American economist, professor of Economics at Harvard), the social capital consists of “norms, networks and other relational forms of social connection” (Glaeser et. all, 2002).

In Glaeser's approach, we find the assumption that the decision to invest in social capital is taken by individuals and not by the society.

One modern definition of the social capital - “norms, networks and communication between people” - belongs to Robert Putman (Putnam, 1993). There is no absolute consensus on the exact definition, but we still can conclusively express matters contained in many existing definitions, characterizing capital as: health, relationships, attitudes and values that govern interactions among people and, at the same time, contribute to economic and social development.

In Putnam's view, there are two distinct types of social capital, which he called bonding social capital and bridging social capital. Bridging social capital is depicted being formed from different social groups, while the bonding capital is given by the links formed in the interior of a social group. Taking into account the effect on society, it is estimated that the first type of capital generates mostly positive effects, while the second induces adverse effects, manifested by loss of social flexibility and withdrawal within groups.

In stable societies, social capital can remain quite safe. One can interpret that the rules and networks are well established in a traditional society where fundamental changes do not generally occur. Since the environment fundamentally changes, it creates the need for flexibility and companies must be sufficiently open to change their own capital. There is a possibility that a strong social capital can support the change. However, nowadays this is quite relevant for many economies with current problems, as globalization continuously transforms the economic environment. The next figure is adapted from the model of Foundation for Economic Education and it shows the highlighting of the social capital.

![Figure 1. Highlighting Social Capital](image-url)
TRUST:
- Other individuals
- Institutions

COMMUNICATION

The benefits of the consumption:
- Direct utility provided by trust and communication

The benefits of production:
- Reduced transaction costs
- Better coordination
- Economic outsourcing

Figure 2. Sources and Social Capital Products

This figure adapted by Christiaan Grootaert and Thierry van Bastelaer (Grootaert and Van Bastelaer, 2001) tries to highlight what are the results of social capital, referring both on the productive results (e.g., reduction of transaction costs) and on the direct consumer benefits - is more pleasant to live with people you can trust, than with people whom you do not trust. Social capital, as we could clearly see, is produced by changes in individuals’ relationships, aspect that facilitates action. While physical capital is wholly tangible, being embedded in observable material form, human capital is less tangible, consisting of skills and knowledge of an individual.

3. Human Capital, Social Capital and Labour Market

When analysing social and human capital, the following question arises: how these two concepts interact and what is their importance in the employment process?

It is difficult to fully answer this question, but much of the specialized literature has been forced to make strong simplifications, often assuming that everything involving the concept of human capital is general. Regarding the influence of social capital on labour market, in general, it depends on the structure of social laws in a particular country and even its private sector. Social capital, regarded as norms or values that facilitate cooperation within a group or between them, facilitate lucrative actions when undertaken with harmony. But, at the same time, the individual’s participation in various social, educational, political or religious organizations, both inside and outside the workplace, may also contribute to the capital of the person and thus to develop new skills that can help acquire a job.

Figure 3 is adapted after K. Brook (Brook, 2005) and shows how social capital and skills of an individual can influence and help those who are unemployed or inactive in finding a job or, if he is employed, in changing the job he already has with a better one. When you are looking for a job, the social capital, together with the human one, can only be a positive aspect...
The role of social capital in the economic development

in terms of networks that provide knowledge and available opportunities. For the employer, where existing employees recommend friends or acquaintances, this can help build confidence in potential candidates. Also, in the situation in which one aims at a new job, there are a large number of applicants with the same powers and the same experience, recommendations may be solid shootout methods. However, this should not be taken into account, especially that no employee will recommend someone that would disadvantage its position within the organization.

Figure 3. The influence of social capital on labour market
In the following table (adapted from British Statistics Office Studies) we will try to illustrate some characteristics of those who have a strong social capital, in contrast with those who do not possess or have them in a rather small percentage.

**Table 1**

<table>
<thead>
<tr>
<th>Strong social capital</th>
<th>Low social capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>People aged over 30 years</td>
<td>Persons aged under 29 years</td>
</tr>
<tr>
<td>Women</td>
<td>Men</td>
</tr>
<tr>
<td>Married</td>
<td>Unmarried</td>
</tr>
<tr>
<td>Have a higher education</td>
<td>Secondary education or none</td>
</tr>
<tr>
<td>Acquire high income</td>
<td>Acquire low income or no income</td>
</tr>
<tr>
<td>Employees</td>
<td>Unemployed</td>
</tr>
<tr>
<td>Belonging to developed areas</td>
<td>Belonging to economically disadvantaged areas</td>
</tr>
<tr>
<td>Owner</td>
<td>Tenants</td>
</tr>
</tbody>
</table>

The comparison in the table above indicates that those in the workforce tend to have higher levels of human capital than those who are unemployed. However, this is a simplification of the reality, because the duration of unemployment or the socio-economic status of those who are inactive can have strong influences on the figured situation.

Also, the high levels of social capital are considered positive influences on health and education as well, which will in turn have a positive impact on labour market outcomes. For a seamless integration into the labour market, human and social capital should seamlessly combine. We insist, however, on the social one and its influence on employment, whereas looked totally different from the human one, as family relationships, friends and other social networks, it facilitates finding a job or switching to a better one.

In recent years, numerous studies refers to the level of employee satisfaction at work, to the management of relations between employees, the way an employee adjusts to the working environment or the administration by the employer of labour relations, which demonstrates the importance given to the subject. Great satisfaction at work was associated with higher wages and better health status of a program of full-time work, as a workplace dissatisfaction causes increased employee disinterest, lower wages and poor health.

Human capital, as tacit and explicit knowledge, will always be positively associated with the accumulation of experience in the labour market and the possibility of establishing a business and proper functioning in the private field. All these, combined with a strong social capital, bring along performance and positive results on the labour market.

4. Conclusions

In conclusion, this paper presents the importance of human and, especially, of social capital, our goal being to bring to your attention the fact that education is related to these terms in achieving economic performance and somehow depends on them in order to getting benefits.

Social capital is not palpable, as it exists in the relationships between people; however, with physical and human capital, it facilitates productive activities. For example, a group characterized by a high level of honesty and trust is able to accomplish much more for a
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production line, as compared with a group that does not have these features. In short, we conclude that social capital both from family and community, assist in the formation and promotion of human capital belonging to the developing and asserting generation.

We understand, therefore, that the concept of capital, to reveal it simply, refers to the stock of heterogeneous goods or to relationships associated with a flow of effort over the years, that are "productive potential" for personal, individual or social gain. All in all, we must conclude with the definition of sustainable development, given by the World Organization of the United Nations, which is seen as a process of development that meets the needs of the present, without compromising the ability of future generations to meet their own needs, definition considered encompassing when referring to human and social capital in the context of economic development.

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Abstract. The paper aims to investigate Romania’s export performance from a little tackled perspective in the literature, focusing on the dynamic of the performance of our external sales through data on our competitive position in foreign markets. We will outline the dynamics in key export products, strategic groups of export partners and main competitors in top destination markets in terms of market share and unit values within a period of ten years (2001, 2011). This investigation leads to identifying the size of Romania’s gaps in comparison with its competitors and the variety of competitive advantages in the reference group.

Keywords: export performance, unit values, strategic trade groups, market share, key products, Romania

THE DYNAMICS OF ROMANIA’S COMPETITIVE POSITION ON EXPORT MARKETS (2001-2011)

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1. Introduction

Countries trade performance tends to be a relevant indicator of economic performance since data have shown that well performing countries in trade terms tend to register higher growth rates of their GDP. Most trade policy studies conducted so far in Romania have focused on determining exports contribution to macroeconomic performance, captured by ex post indicators or models. Analyses have focused on the role that Romanian exports play in the macroeconomic environment (e.g. Ferragina et al., 2005, Pop-Silaghi 2009) as well as on their contribution to the real convergence process highlighting the challenges that Romanian firms must face in their attempt to cover a considerable gap of untapped potential (e.g. Albu, 2012)

Factors such as the type of products available, the level of market and economic diversification, the positioning on quality chains are also significant in explaining growth. In addition, it is important to determine the reasons for country differences in export growth and to determine the redistributive process of market shares among competitors (ITC’s Market Analysis and Research –TPI Technical Notes). At the same time, however, some answers are to be found by focusing on the dynamics of the performance of our external sales through data on our competitive position in foreign markets. This type of investigation is more than helpful in identifying the size of Romania’s gaps in comparison with its competitors, the variety of the competitive offer or the comparative dynamics in the reference group. Besides market share, understanding direct competitor groups shape and dynamics plays an equally important role for shedding light on a country’s export prospects. Studying a country’s export performance along with its prospects in capitalizing the competitive advantages it has is a multi-faceted topic that needs to be approached in depth and from different perspectives.

2. Methodology

Data on key export markets, export volume and value, market share and unit values of exported products will be processed using the resources provided by the International Trade Centre UNCTAD/ WTO (ITC) through the Trade Competitiveness Map, based on the world’s largest database of trade statistics, COMTRADE. The original data used in the calculation are at a 2 and 4 digit level nomenclature HS (1996 edition), and they include more than 5,000 products grouped in 99 categories and 21 export industries. Exports are given in terms FOB (Free On Board).

The analysis will emphasize the dynamic in hierarchy and performance of the top exported products based on 2001 and 2011 statistics (data availability restricts the analysis to 2011). In the preliminary phase, a 2 digit level analysis helps to pick out 5 top exported groups of products based on their exported value in total Romanian exports in 2001 and 2011. A closer look within each of these groups of products can show the key products Romania was actually exporting and for which it is worth investigating the trade performance in comparison with the main competing countries. In other words, at 4 digit level of classification, top products from each key category of products are chosen to investigate their main destination market judging by the share each country has in total exports. From the list of importing markets for a certain product, we will stick with that country that draws the highest share of our exports in that specific group of products. This will be the strategic destination market for which national trade performance will be evaluated in terms of market share and unit values.
The dynamics of Romania’s competitive position on export markets (2001-2011)

3. Main findings

In order to evaluate the dynamic of Romania’s trade performance, three main aspects should be taken into consideration: the change in hierarchy of the exported products in 2001 and 2011, the evolution of the performance of key products in 2001 and the position of key exported products in 2011 and 2001.

First, as shown in the table below, the hierarchy of the top 5 exported products has changed from 2001 to 2011 along with the shares of each class in total exports. In 2011, two of the main five top exports groups have changed compared to 2001: Vehicles other than railway, tramway and Machinery, nuclear reactors, boilers, etc; have replaced Articles of apparel, accessories, not knit or crochet and Footwear, gaiters and the like, parts thereof. The top 5 exports groups represent in both cases almost 50% of the total export value, which proves the strategic role they had in terms of Romanian external sales.

<table>
<thead>
<tr>
<th>Code</th>
<th>Product label</th>
<th>Share in value in total exports</th>
<th>Code</th>
<th>Product label</th>
<th>Share in value in total exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>62</td>
<td>Articles of apparel, accessories, not knit or crochet</td>
<td>18.15%</td>
<td>85</td>
<td>Electrical, electronic equipment</td>
<td>17.99%</td>
</tr>
<tr>
<td>85</td>
<td>Electrical, electronic equipment</td>
<td>8.74%</td>
<td>87</td>
<td>Vehicles other than railway, tramway</td>
<td>11.97%</td>
</tr>
<tr>
<td>64</td>
<td>Footwear, gaiters and the like, parts thereof</td>
<td>8.57%</td>
<td>84</td>
<td>Machinery, nuclear reactors, boilers, etc</td>
<td>8.71%</td>
</tr>
<tr>
<td>72</td>
<td>Iron and steel</td>
<td>6.4%</td>
<td>72</td>
<td>Iron and steel</td>
<td>5.60%</td>
</tr>
<tr>
<td>27</td>
<td>Mineral fuels, oils, distillation products</td>
<td>6.21%</td>
<td>27</td>
<td>Mineral fuels, oils, distillation products</td>
<td>5.50%</td>
</tr>
<tr>
<td>Total</td>
<td>48.07%</td>
<td>Total</td>
<td>49.87%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: ITC calculations based on UN COMTRADE statistics.

Secondly, if we look at what happened with the top products Romania had in 2001, the first major change is seen in the evolution of the apparel products. It is well known the boom that the Romanian apparel industry has had after the 1990s mainly due to a massive expansion of lohn contracts attracted by the relatively low labor costs prevailing in Romania (Borras & Tsaagdis, 2008). The export performance of the Romanian clothing industry registered a decline during the last 12 years, leaving a significant commercial and productive potential unexploited. Another decline was registered by the footwear industry, from 8.57% in 2001 to 2.9% of the total Romanian exports in 2011. There was one class of products that has managed to notably improve its share in total exports, the Electrical and electronic equipment industry, which has doubled its exports volume. The other two classes (27 and 72), although have had ups and downs, have been a constant in the hierarchy of the top exported products during the analyzed period.
The third aspect that is worth being analyzed is the place that the current top industries have had back in 2001. Surprising or not, the 3 main exported products in 2011 had little significance ten years ago. The Electrical and electronic equipment producers have doubled their exports volume, becoming the top exporters within 10 years. The automotive industry has had the most spectacular evolution, going from 2.16% of the total exports to almost 12%, mainly due to the foreign investments in the field.

A closer look at each of these groups of products can reveal the key products that Romania was actually exporting and for which is worth investigating trade performance. The hierarchy for both years in terms of share in total trade at a four-digit level is presented in the table below:
The dynamics of Romania’s competitive position on export markets (2001-2011)

Table 4
List of top 5 products exported by Romania, four-digit level

<table>
<thead>
<tr>
<th>Code</th>
<th>Product label</th>
<th>Share in value in total exports</th>
<th>Code</th>
<th>Product label</th>
<th>Share in value in total exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>6204</td>
<td>Women’s suits, jackets, dresses skirts</td>
<td>6.5%</td>
<td>8708</td>
<td>Parts &amp; accessories of motor vehicles</td>
<td>5.52%</td>
</tr>
<tr>
<td>2710</td>
<td>Petroleum oils, not crude</td>
<td>5.34%</td>
<td>8544</td>
<td>Insulated wire/cable</td>
<td>5.36%</td>
</tr>
<tr>
<td>6203</td>
<td>Men’s suits, jackets, trousers etc &amp; shorts</td>
<td>4.67%</td>
<td>8703</td>
<td>Cars (incl. station wagon)</td>
<td>5.24%</td>
</tr>
<tr>
<td>6403</td>
<td>Footwear, upper of leather</td>
<td>4.19%</td>
<td>8517</td>
<td>Electric app for line telephony</td>
<td>4.8%</td>
</tr>
<tr>
<td>6406</td>
<td>Part of footwear; removable insoles etc</td>
<td>2.92%</td>
<td>2710</td>
<td>Petroleum oils, not crude</td>
<td>4.54%</td>
</tr>
<tr>
<td>7208</td>
<td>Flat-rolls products of iron</td>
<td>2.65%</td>
<td>7204</td>
<td>Ferrous waste and scrap</td>
<td>1.7%</td>
</tr>
<tr>
<td>8544</td>
<td>Insulated wire/cable</td>
<td>2.435</td>
<td>8414</td>
<td>Air, vacuum pumps</td>
<td>1.55%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>28.7%</td>
<td></td>
<td>Total</td>
<td>28.71%</td>
</tr>
</tbody>
</table>

Source: ITC calculations based on UN COMTRADE statistics.

As shown in table above, in 2001 subgroups 6204 and 6203 belonging to the apparel industry have had similar shares and were responsible for more than 11% of the total exports. The footwear industry had also two leading subgroups (6403 and 6406) with a share of 7.11% of exports. A constant in the list of top export products for both years are the products in the Petroleum oils, not crude class, those belonging to group 72 (7208 in 2001 and 7204 in 2011) and group 8544 – Insulated wire/cable. The most significant change is the emergence of the products belonging to the automotive industry in top three, replacing the apparel industry.

In the case of 6204 - “Women’s suits, jackets, dresses skirts etc & shorts”, in 2001 the greatest volume of products have reached the German market (37.3%). Since Germany is the key purchaser of products from this category, this will be the strategic destination market for which the national trade performance will be evaluated. Fortunately, in 2001 on the German market Romania ranked 2nd in terms of market share, holding 9.2% of Germanys imports of this product, after Turkey with 13% of this market. We were on similar position in terms of market share and unit values with China and Poland. Ten years after, the competitive position on the German market for this product is no longer that satisfactory, our exports having only

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1 On the list of top exported products, there are two which belong to classes that, according to the preliminary classification, are not in top five and therefore will not be included in the analysis. They represent 6.41% of the total exported value in 2001.

2 On the list of top exported products, there are four which belong to classes that, according to the preliminary classification, are not in top five and therefore will not be included in the analysis. They represent 9.16% of the total exported value in 2011.
3.9% of the total German imports for this product, ranking sixth after countries like China, Turkey and Bangladesh. There was a change also in the main destination market of the product: in 2011 we were exporting mostly to the United Kingdom (29.2%), followed by Germany (25.6%).

As for 6203 – Men’s suits, jackets, trousers etc & shorts, the strategic market in 2001 was Italy where Romania had the top position in terms of market share (21.6%). Ten years later, Italy remains the main purchaser for this product, just that we are no longer the top exporter. China has managed since 2007 to win the biggest market share (18.6% in 2011), followed by Tunisia (14.4%) and Romania (12.1%).

In the case of 2710 – Petroleum oils, not crude, most of it used to go to the Turkish market (9.3%). In terms of market share, Romania was on the 4th position with 8.6% of the total imports Turkey had for this product, on a similar position with Italy. In 2011, on this market we had a share of only 1.1%. In 2011, the strategic market for this product has changed. Although in 2001, Ukraine bought only 0.1% of our exports of petroleum oils, in 2011 Ukraine (16%) was the main destination market, followed by Bulgaria (10.9%) and Turkey (10.4%). On the Ukrainian market we face predictable competitors: Belarus – 41% market share, Russian Federation -27.8% and Lithuania – 9.2%. Romania ranks 4th in terms of market share, with a 7% market share. Although unit values are very similar, from the whole list of key competitors, Lithuania can be emphasized as the main opponent, disputing similar unit values and market shares.

Another key exporter in 2001, the footwear industry sent most of its products to Italy (>75%). The Footwear, upper of leather products managed to obtain 33.1% of the Italian market, way above Tunisia (6.8%) and Vietnam (6.5%). Nowadays, Italy remains the main purchaser for this product and even though the market share Romania has is not that large anymore, it is still first with 14.7% of the imports Italy has for this group of products. What it is different though is the group of countries we are competing with: China (10.1%), Belgium (8.6%) and Netherlands (8.3%). In 2001, group 6406 used to have a market share of 37.5%, competing with Tunisia (9.4%) and India (9.4%) and in 2011 it had a market share of 27.7%, ranking first before Tunisia (12.3%) and Albania (11.3%).

In the class of Iron and steel, for group 7208 we had Turkey as the most important importing market, receiving 18.3% from the total exports of this product. The market was dominated by Ukraine (31.4%) and by the Russian Federation (28.6%). Romania ranks 3rd (15.9%) and it maintains its position during the 10 years with a market share of 16% in 2011. The place of the subgroup in terms of share of the total exports was taken by 7204 – Ferrous waste and scrap, with Turkey as a clear dominant importing market (84.8% from the total exports of this product). In this case, Turkish companies prefer American products, 10.8% go for the Russian ones and 9.9% consider the Romanian offer as the best one. Although prices revolve around 320-340 euro/ton, correlating unit values and market share reveals our resemblance to the United Kingdom and the Russian Federation.

In the case of the last analyzed group, insulated wire/cable, the destination market is Germany for both years, with a 4.5% market share in 2001 and 14.5% in 2011, ranking first in terms of market share and managing to distinguish itself from the rest of the established country groups. We are competing with other Central-Eastern European countries, our biggest competitor being Poland with a market share of 10.8%.
The dynamics in the hierarchy of the top export products in 2001 and 2011 revealed several aspects: in both years the first 5 groups at a 2-digit level analysis contributed with almost half to our total exports, which emphasises our vulnerability and dependence on the evolution of production, price and demand for these products.

In diversity terms, things have not changed very much since we still have 2 main industries as main contributors to the exports volume and 2 groups that have remained the same during the period. The major change consists in the evolution of the apparel and the footwear industries, from leaders to bottom places. This has given room for the automobile industry to become the main contributors to total exports. Though our biggest contributor in terms of external sales, the car industry ranks last when it comes to the market share, with only 2.9% in France.

When we look at the destination markets for our key products, in 2001 they were Germany, Turkey and Italy. In 2011, three of the seven key products reached the German market, the rest of them went to Turkey, Hungary, Ukraine and France.

Correlating unit values and market shares, in 2001 Romania gets included in strategic groups of competitors next to labour abundant countries like China, Tunisia, Vietnam, Albania, Ukraine and Poland and in 2011 next to Poland, Slovenia and Japan when it comes to the car and motor vehicles industry, on a similar position with Lithuania and Poland in matters of petroleum oils, competing with the UK, Russia, the Republic of Korea, the Netherlands and Germany for all the other key products.

Romania should diversify the range of its export products and focus more on high-tech products, trying to rely on the value added brought by innovation and R&D activities. Exploring new potential destination markets for Romanian companies outside Europe or EU is mandatory under the actual economic context. The export performance we have managed to achieve so far is auspicious, but there is definitely room for improvements.

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Abstract. Economic competitiveness and growth are dependent nowadays on the environmental issues and business excellence involves taking full responsibility for a sustainable future. Probably one of the most disputed topics in today's economic, political or scientific preoccupation is the relation between growth of the economy and its energy intensity. Still there is no agreed model for this relation and more intricately, in developing or developed countries, economic and energy efficiency principles and motives are usually perceived as conflicting. Since the last decades of the 20 century, both the developed and developing world are moving towards knowledge-based economies. This study aims to analyse the correlations between the size of the economy (calculated by the gross domestic product, GDP), the overall level of development of the country towards the Knowledge Economy (as calculated by the World Bank with its Knowledge Economy index KEI) and some main economic indicators concerning the energy sector. Using correlation analysis, this study determines the correlations between the GDP, the KEI, the share of energy from renewable sources in the countries’ energy mix as well as the energy intensity and the CO2 emissions/GDP point of 28 EU-countries using the latest available data. The relevance for doing such an study is founded on the evidence that the contemporary business education relies on an extensive knowledge of the business environment.

Keywords: correlation, energy intensity, energy and carbon intensity, renewable energy

CORRELATIONS AMONG THE DEVELOPMENT OF EU ECONOMIES, ENERGY INTENSITY AND RENEWABLE ENERGY INDICATORS

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1. Introduction

The relevance for tackling the relation between growth and energy is undoubtedly related to the major challenges that human society encounter in the present days in using economic resources for sustainable societal benefits. Generally speaking, people's life conditions, economic competitiveness and the overall functioning of society are dependent on the energy resources in their various forms and productivity.

The European Union is mostly concerned about meeting the 20-20-20 objective by 2020, meaning the energy targets described by the following:

- at least 20% of EU gross final energy consumption to come from renewable energy sources;
- at least 10% of transport final energy consumption to come from renewable energy sources;
- a 20% reduction in primary energy use compared with projected levels, to be achieved by improving energy efficiency.

The EU is making good progress towards delivering on these commitments. Starting from the discussion of registering national progress towards the headline targets of the Europe 2020 strategy for smart, sustainable and inclusive growth, in the followings, the paper explores the current place of Romanian economy as compared to the average EU28 figures on several energy indicators. There was no significant connection found between the level of greenhouse gas emissions (GE) and the GDP of the country, between the renewable energy (RWE) and energy intensity (EI) and also between the share of renewable energy in the gross energy consumption (RWE) and the GDP of the country.

The relations among economic wealth fare and energy indicators such as energy intensity and renewable energy are a highly disputed topic in today's economic, political or scientific circles. Hereby economic and energy principles and motives are often perceived as conflicting.

This study represents an attempt to identify correlations between the size of economies (calculated by the gross domestic product, GDP) and the overall level of development of the countries towards the Knowledge Economy (as calculated by the World Bank with its Knowledge Economy index, KEI) and the share of energy from renewable sources in the countries' energy mix as well as the energy intensity and the CO2 emissions of the 28 EU-countries using the latest available data as well as to analyse these correlations.

2. Literature review

Until today numerous studies have dealt with the relationship of economic growth with energy and carbon intensity of economies like Lise and Montfort (2007), Bartleet and Gounder (2010), Costantini and Martini (2010) or Menegaki (2011, 2013) in different countries and with different modelling methods. However, only Menyah and Wolde-Rufael, (2010) and Menegaki (2011, 2013) have studied the relationship between growth and renewable energy.

Menegaki (2013) observes that countries with remarkable renewable energy performance have medium to low efficiency, while renewable energy laggards count among the most technically energy efficient countries in Europe. Burcea, Ungureanu and Băldan (2012) analyse the relation between the energy intensity of European economies and whether there is a decoupling between energy consumption and economic growth. Peters (2011)
Correlations among the development of EU economies

Attempts to building a case for understanding the concept of environment as a suitable perspective in order to trace the complex ecologies comprising knowledge societies and economies. The argument is made that the most sustainable and productive interface in advanced post-industrial societies in the twenty-first century will be that between the knowledge and the ‘green economy’ - what he refers to as the ‘greening of the knowledge economy’.

Stehr (2001) was one of the few to explore the contested interrelations between the pursuit of economic and ecological objectives using the issue of climate change as an illustrative example. He believes the knowledge economy societies to be of an unplanned, uncoordinated and competitive capitalist nature. According to him environmental policies would help to sustain and accelerate the radical transformation of the economy towards a knowledge-based economy. The issue of correlating two national indicators has been explored throughout the history, such as the case of Okun’s law (Lee and Warner, 2007) or the correlation between GDP and CO2 emissions in 2007.

The energy indicators

In the paper the concern is directed toward two indicators namely renewable energy intensity and the greenhouse gas emissions that are used as headline indicators of the Europe 2020 strategy.

For the first aspect of the Europe 2020 strategy, the key element in energy policy and a very frequent indicators is the share of renewable in gross final energy consumption calculated on the basis of data covered by Regulation (EC) No 1099/2008 on energy statistics; the renewable energy sources (RES) include solar thermal and photovoltaic energy, hydro (including tide, wave and ocean energy), wind, geothermal energy and biomass (including biological waste and liquid biofuels). The renewable energy sources are meant to reduce the dependence on fuel imported from non-EU countries, to decreasing emissions from fossil fuel sources, and decoupling energy costs from oil prices. The target for the EU27 to be reached by 2020 is a share of 20% renewable energy use in gross final energy consumption. The national targets take into account the Member States’ different starting points, renewable energy potential and economic performance. For the member states of the EU, the Directive 2009/28/EC on promotion of the use of energy from renewable energy sources has established the 2020 targets on the use of renewable energy sources and the way to monitor the progress towards the 2020 targets is measured against the indicative trajectory defined.

For the second aspect, the energy intensity is also a key indicator for measuring progress under the Europe 2020 strategy for smart, sustainable and inclusive growth. It is used to indicate the effectiveness with which energy is being used to produce added value. It is defined as the ratio of gross inland consumption of energy to GDP (gross domestic product). The ratio is expressed in kilograms of oil equivalent (kgoe) or Toe (meaning tons of oil equivalent) per EUR 1000; to allow analysis over time, the calculations are based on GDP at constant prices (currently chain-linked 2000 prices). As a general rule, if an economy becomes more efficient in its use of energy and its GDP remains constant, then the ratio for this indicator should fall. The economic structure of an economy plays an important role in determining energy intensity, as post-industrial economies with large service sectors will, a priori, display relatively low energy intensity rates, while developing economies may have a considerable proportion of their economic activity within industrial sectors, thus leading to higher energy intensity.

Regarding the anticipated 20% increase by 2020 in energy efficiency, Member States are committed to achieve the 20% European energy efficiency target (established in 2007 by
the European Council) legally defined in the Energy Efficiency Directive (EED) as the "Union's 2020 energy consumption of no more than 1474 Mtoe primary energy or no more than 1078 Mtoe of final energy". The **greenhouse gas emissions indicator** (expressed in CO₂ equivalents) shows the greenhouse gas emissions of key source categories: energy industries, manufacturing industries and construction, transport, industrial processes, agriculture and waste.

**Current context of Romanian economy versus EU**

Romania faces several major medium-term challenges in the bid to secure smart, sustainable and inclusive growth. Reaching barely only 46% of the EU average of GDP per capita, Romania is confronted with a significant developmental gap and a low degree of competitiveness or even energy efficiency. In the following section we are interested in the actual performance Romania displays in term of energy indicators.

The following figure highlights the development of renewable energy sources in energy consumption in the EU27 and in Romania. As seen in figure 1, since 2004, the share of renewable energy in final energy consumption continuously grew in the EU27 (as an entity) and in Romania, as well. In 2011, the energy from renewable sources contributed 13.0% of gross final energy consumption in the EU27, compared with 7.9% in 2004 (with a growth rate of 543%). In Romania, the renewable sources accounted for 21.4% of total energy consumption, with the share increasing during 2004-2011 from 17.0% to 21.4%, with approximately 37.6%.

![Share of renewable energy in gross final energy consumption](source)

**Source:** Eurostat, Code: t2020_31.

*Figure 1. The evolution for share of renewable energy in gross final energy consumption in EU27 and Romania*

The figures in the Figure 2 show the gaps that Member States still have to fill towards achieving their 2020 targets for renewable energy sources. The highest shares of renewable energy in total consumption in 2011 were found in Sweden (46.8% of renewable energy sources in final energy consumption), Latvia, Finland and Austria, and the lowest in Malta (0.4%), Luxembourg (2.9%), the United Kingdom, Belgium and the Netherlands.

In 2011, Romania reported a figure of 21.4% (lower than in 2010) but still close its Europe 2020 target.
Correlations among the development of EU economies

In the Figure 3, there is given the evolution for the energy intensity in EU27 and Romania, it is seen that energy efficiency rose between 2000 and 2010 for both entities. Although Romania reported intense rhythms, it remained one of the most energy-intensive economies, along with Bulgaria and Estonia. The energy intensity of the Romanian economy declined at an annually rate of 3.93% between 2000 and 2011, consistent with the EU average of 1.52%.

Source: Eurostat, code: tsdec360.

The lowest levels of energy intensity – a measure of an economy’s energy efficiency – were recorded for Denmark and Ireland in 2011, while the most energy-intensive Member States were Bulgaria, Estonia and Romania.
In 2011, combined greenhouse gas emissions from all 27 Member States were 18.37% below the 1990 level, whereas in Romania the level declines with 49.53. In terms of individual patterns, the total emissions of greenhouse gas decreased by around 10.19% between 2000 and 2011 in EU28 and with approximately 7.62% in Romania. Between 2003 and 2020 there was a tendency to reduce the greenhouse gas total emissions in EU28. At EU28 level is registered a relative higher value for emissions in 2010 (4705200 in 1000 tonnes of CO2 equivalent) while in Romania the relative higher value is registered one year later, in 2011 (116621 in 1000 tonnes of CO2 equivalent). The trend to reduce the greenhouse gas emissions has to continue up to 2020.

The wealth and knowledge economy indicators

As a proxy indicator for the wealth of a national economy the GDP per capita is used as expressed in percentage share in the average of EU28 equaling 100% – Figure 5 as it is seen Romania stands poorly with only 49% of the European average.

Source: Eurostat, code: tec00114.

Figure 5. The GDP per capita by country in 2012
The World Bank’s Knowledge Assessment Methodology is an online interactive tool that produces the Knowledge Economy Index (KEI) – an aggregate index representing a country’s overall preparedness to compete in the knowledge economy. According to the World Bank, the KEI is based on a simple average of four sub indexes, which represent the four pillars of the knowledge economy: Economic Incentive and Institutional Regime, Innovation and Technological Adoption, Education and Training, Information and Communications Technologies (ICT) Infrastructure.

3. Methodology for the empirical analysis

The objective of the current article was to determine what types of connections existed between five of the most important indicators in the case of 28 European countries in 2011 and if they reflect the current trend of the energy development towards a sustainable future. The five analyzed indicators were: the knowledge-economy index of a country, the GDP, the level of greenhouse gas emissions, the percentage of renewable energy consumption of the total energy consumption and the energy intensity.

The research included the analysis of 28 European countries, namely: Belgium, Bulgaria, the Czech Republic, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxemburg, Hungary, Malta, Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden and the United Kingdom. For each of these countries, information regarding the five indicators for the years in the most recent year was from selected from the Eurostat and the KAM World Bank databases.

We used the Pearson coefficient to determine what type of correlations existed between the above mentioned indicators based on the covariance calculation formula for two variables:

$$E[(X-E(X))(Y-E(Y))]$$

where $E(X)$ and $E(Y)$ are the averages of the X, Y variables, while $\sigma_X$, $\sigma_Y$ are the standard deviations of the X, Y variables.

4. Findings and analysis

The scope of our article is to offer a more integrated view of the interdependence of the following economy indicators and their influence on a country’s development based on the latest data available.

The table refers to the correlation between the following national indicators of the researched countries: the GDP represents the gross domestic product of a country (expressed in index where EU28=100), RWE is the share of renewable energy in gross final energy consumption, the EI refers to the energy intensity of a country or the gross inland consumption of energy divided by GDP (kg of oil equivalent per 1000 EUR), the GE is the amount of greenhouse gas emissions (CO2 equivalent) in thousands of tones, while (all indicators being reported Eurostat and World Bank).
Table 1

<table>
<thead>
<tr>
<th></th>
<th>GDP per capita in PPS Index (EU28 = 100)</th>
<th>RWE or Share of renewable energy in gross final energy consumption (%) in 2011</th>
<th>EI or Energy intensity of the economy Gross inland consumption of energy divided by GDP (kg of oil equivalent per 1 000 EUR) 2011</th>
<th>GE or Greenhouse gas emissions - total emissions - 1000 tonnes of CO2 equivalent</th>
<th>KEI or Knowledge Economy Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RWE</td>
<td>-0.15195</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EI</td>
<td>-0.5533</td>
<td>0.105464</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GE</td>
<td>0.074496</td>
<td>-0.23522</td>
<td>-0.28689</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>KEI</td>
<td>0.595015</td>
<td>0.166902</td>
<td>-0.57911</td>
<td>0.197468</td>
<td>1</td>
</tr>
</tbody>
</table>

The most significant correlation was found between the gross domestic product and the knowledge-economy index with a positive Pearson coefficient of 0.595, indicating that the countries with an increased KEI have a higher GDP than the other countries with a lower KEI.

For example, Sweden has the highest KEI of the 28 analyzed countries and also one of the highest levels of GDP. Denmark, Belgium and Finland are other examples of countries with both high KEI and GDP indicators as opposed to the situation of Bulgaria and Romania, that have the lowest levels of KEI (6.8) and also the lowest GDPs comparing to the other countries in EU.
Correlations among the development of EU economies

The second correlation with a relatively high score (-0.553) was revealed by the interdependence of the GDP and the energy intensity indicator (EI), that showed the major consequences of the inefficient energy consumption on the GDP of a country and simultaneously indicating an important source of a potential GDP growth, as seen in figure 7. Thus, a country must act upon the cut of the inefficient energy consumption. Estonia, Romania, Bulgaria are examples of countries facing difficulties with the increased energy intensity and at the same time with a low GDP.

Another important part of the research was represented by the covariance of the KEI and energy intensity indicators (-0.579), meaning that the countries with a high level of knowledge-economy index seem to have a low level of energy intensity and therefore use their energy more efficiently, as seen in Figure 8.

![Figure 7. The radar chart of the GDP and EI 2012 (in normalized values)](image)

The countries with the lowest indexes for knowledge-economy, respectively Bulgaria, Romania, Latvia and Poland consumed large amounts of energy in 2011 compared to other nations such as, Denmark, the Netherlands or Germany.
The study also indicated a slight negative correlation (-0.235) between the share of renewable energy in gross final energy consumption (RWE) and the level of greenhouse gas emissions (GE).

The low level of this correlation can be explained through the existence of other factors (such as the political factors), that influence the decision of using renewable energy at a large scale, which were not taken into consideration in this study.

There was no significant connection found between the level of greenhouse gas emissions (GE) and the GDP of the country, between the renewable energy (RWE) and energy intensity (EI) and also between the share of renewable energy in the gross energy consumption (RWE) and the GDP of the country. Furthermore, this share of renewable energy (RWE) was only slightly interconnected to the energy intensity of a country, which leaves space for further scientific research of these variables and their dependence on other indicators.

5. Conclusions (and future research agenda)

As a conclusion, one could observe that the KEI of a country and its development status and sources tend to be in a positive correlation, which points out the importance to strive for the development of education, technologies, innovation and sustainability for a country’s prosperity and evolution. The present paper is an overview of the energy-related economic situation of the 28 European countries in 2011. The energy field is currently expanding its possibilities through the increased renewable energy technologies, legislation and implementation, thus representing the fundamental element for the sustainable future of the Earth. As a future research agenda, our scope is to research the data of these countries’ dynamics over the last decade in order to estimate indicators correlations and future scenarios in the economic and renewable energy fields. Another objective would be to study further the observed poor correlations of indicators, in order to determine what other factors from the environment would be of significant influence for their evolution.
Correlations among the development of EU economies

The results of the comparative analysis may indicate good examples in founding the policy measures to meet the 2020 targets and to direct the efforts towards the successful projects in development and sustainable economic growth. The use of renewable energy sources is likely to result in job creation in environmental and renewable energy sectors. As an example, the implementation of individual energy efficiency measures could lead to 2 million jobs being created or retained by 2020 and the potential from renewable energy sector development is estimated at 3 million jobs by 2020, as well.

Studies such as this paper can be used by the European Commission for policy drafting purposes as well as for countries' monitoring and auditing purposes with respect to the 20/20/20 goals. The scale of the challenge in energy efficiency requires that the policy effort is intensified in all Member States, particularly in Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Romania, which remain the most energy intensive countries in the EU.

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Abstract. In Europe of the last decades, considerable efforts have been made to ensure access to high quality care, coping with challenges rarely encountered in other parts of the world such as the aging of population, research for finding and use of more effective drugs and some more advanced technology. In order to position Romania in the European context, we perform a comparative analysis, appealing to the indicators, such as years of healthy life, distribution of medical staff on various areas, the number of deaths focusing on emerging areas and cause of death. During the crisis Europe has drastically reduced health costs, both in public and in private sectors, but the most affected were emerging areas where: salaries were cut low, they stopped hiring, medical staff migrated in search of higher incomes and better working conditions. Successful experience of some EU countries have shown that some types of social policy and investment strategy in education in general and in education for prevention, in particular, lead to long-term positive impact on health.

Keywords: health management, healthy living, medical staff, number of deaths, causes of death.

HEALTH MANAGEMENT.
ROMANIA IN EUROPEAN CONTEXT

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Challenges for the Knowledge Society (2013) Vol. 8, Special Issue, pp. 267-274
1. Introduction

At the individual level, a good health is an important component of human capital, allowing people to carry out activities to fulfill their goals, to have a full life and be active members of society (Mărginean and others, 2006). At the societal level, high health status is a key element of human capital of each country, contributing to its competitiveness compared to other countries (Alber and Kohler, 2004). However, health is to a small extent like other forms of human capital such as education, professional knowledge or sports performance. It also differs from those in certain essential points, namely: it is often subject to significant and unpredictable risks, it can not acquire knowledge and skills.

Taking into account that people's health is a national priority, contributing to sustainable human development, health system performance responsibility of a country is given to the government, as the general manager. Hospital is not only medical institution but also a business organization, sometimes very large, and it should therefore be led by administrators who are trained to integrate and understand the economic, social and professional organization involved in its development.

Demand and supply of health care depend much on living standards and the level of education that determines lifestyle adopted by individuals. For over half a century, the demand for health care tends to increase proportionately with income per capita (EU Commission, 2010). EU countries have registered progress in terms of population health, but now face new major problems arising from the economic crisis and the changes in living and working environment, changes in consumer behavior etc. Romania is facing at present major problems due to the seriously underfunded health system but equally to corruption and wasting public money.

In order to have an overview of these cases we use several indicators, on which many European countries base their specific health policies and try to outline the position of Romania in the EU. These are: healthy life expectancy, the number of deaths per 100,000 inhabitants, the distribution of causes of death and the distribution of medical staff on various areas. The selection took into account the continuation of earlier studies emphasizing public spending and corruption in health, and the purpose of the present article was to find out the consequences of squandering public money on quality of life.

2. Research Methodology

This paper combines qualitative and quantitative research, using specific methods, document analysis and content analysis. To achieve the objectives we used a series of bibliographical works consisting of specialized accounting regulations, taxation and legal studies and articles published by various national and international bodies in the field. To this end, we collected data from the World Bank - Doing Business, Euro stat and the National Statistical Institute in order to achieve a comparative analysis of focus group type regarding healthcare, Romania and the EU, in 2010. Variables were used on the dynamics of the health system, such as healthy life expectancy, causes of death, the number of deaths per 100,000 residents, medical staff distribution in various areas.
3. Results of analysis

In Romania in 2011, it continued health care reform which produced changes in health system infrastructure and personnel structure involved in providing health services in both the public and private sectors. Dissolution, merger or transformation of public health units caused many changes in the public health network and led to changes in the number and professional structure of the medical staff.

The size of resources allocated to health and efficiency with which they are spent determine the health status of the population. Thus, by 2009, health expenditure in GDP in European countries grew at a faster pace than the growth rate of economic growth. Some of the most important factors behind this increase were an aging population, the number of people receiving care and the discovery of more effective drugs and advanced technologies.

Starting from these considerations we extended previous research, taking into account other variables of the system, and in this respect we have compiled a table of indicators of health system we deem relevant, with the data in 2011.

Table 1

Annual health system indicators:

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of death per 100,000 residents</th>
<th>Healthy life expectancy (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women</td>
<td>Men</td>
</tr>
<tr>
<td>UE-27</td>
<td>456.6</td>
<td>748</td>
</tr>
<tr>
<td>Romania</td>
<td>725</td>
<td>1223.4</td>
</tr>
</tbody>
</table>

Source: Author’s own contribution based on Eurostat, World Bank, National Institute of Statistics.

3.1. Number of deaths per 100,000 residents

In 2010, there were large variations in age standardized mortality rates for all causes of death in European countries. As can be seen in Table 1, there is a significant gap in terms of mortality rates between women and men. In all EU Member States, the mortality rate for males was on average 70% higher than for women. Lowest death rates were recorded in Spain, France and Italy with more than 500 deaths per 100,000 inhabitants. Lower mortality rates translate into higher life expectancy and increasing healthy life years. In contrast, most cases are found in Latvia, Romania and Bulgaria with over 900 deaths per 100,000 inhabitants.

We can not ignore the fact that the economic development and the Mediterranean lifestyle, exceptionally healthy, have a strong influence on mortality rates. Deaths in some EU countries decreased due to effective measures taken in the public health system including increased quality of services, public information, prevention and other measures.

3.2. Causes of death per 100,000 inhabitants

Complementary to the previous indicator is the one aimed at the causes of death. It reflects the population death rate adapted to a standard distribution, by age, by associating each death with a main cause. This way there can be assessed risks caused by a number of specific
diseases and other causes (Figure 1), then the figures could be broken down by age, sex, nationality and region.

![Causes of death per 100,000 inhabitants in 2010](image)

Source: Author’s own contribution based on Eurostat, World Bank, National Institute of Statistics

Figure 1. Causes of death per 100,000 inhabitants in 2010

As anyone can see, cancer was the major cause of death in each of the EU Member States: on average 166.9 deaths per 100 000 inhabitants in the EU-27 in 2010, followed by circulatory disease. Lithuania is the country with the highest rate of death due to circulatory disease in the EU, at a rate of 300 deaths per 100 000 inhabitants, while France, Portugal, Luxembourg and Spain have the lowest rates, below 50. Romania ranks 22 in mortality due to heart causes with a rate of 187.3 deaths. The explanation of these values is evident, firstly, in eating, but equally in the geography, culture and not least in the level of development of the country.

External causes of death include suicides and accidents especially on road transport, but they are not a major cause of death. Depression, aggression and addiction driven primarily by the global economic situation are just a few factors that influence the phenomena of suicide. Although transport accidents occur daily, deaths number is lower than that due to other causes. In 2010, in Romania, there has been recorded the highest mortality rate of accidents in the transport sector (over 12 deaths per 100 000 inhabitants), instead Netherlands, Malta and Sweden reported the lowest rates (below 4). According to a study by the insurance company Erie Insurance for 2010-2011 it has emerged that 62% of fatal accidents were caused by distracted drivers, 12% used mobile phone, 7% directing attention to an outside event.

Drug addiction and alcohol abuse are other causes of death where death rates in men were 4-5 times higher than those among women. According to a study conducted by the OECD in 2012, Romania is among the biggest consumers of alcohol in Europe, ranking 3rd with 12.7 liters per capita adult a year after Luxembourg 15.3 and Latvia 13.2. However, the number of deaths due to alcohol abuse Romania is 0.3 lower than the EU average. In many European countries, alcohol consumption decreased in recent years due to advertising, sales restrictions and taxation.

However, another part of the population remains enslaved to social and psychological factors that determine consumption, such as the need for help, anxiety, relationship conflicts,
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depression, low self esteem, ease of obtaining alcohol, social acceptance of consumption alcohol, stressful lifestyle. It is also noted the unwanted widespread "performance" of Romania for specific infectious diseases of poverty, such as tuberculosis (first place in EU) hepatitis B (position 3) and HIV/AIDS.

The conclusion that imposes itself is that the stress imposed by the impoverishment caused by the crisis, poor allocation of public funds and corruption have had an impact on the health of the population, allowing the development of specific diseases of poverty.

3.3. Healthy life expectancy

Indicator of healthy life years introduced the concept of "quality of life", focusing on those years that can be enjoyed by people without suffering from any disease or disability. Healthy life expectancy is calculated separately for men and women for two age groups: healthy life years at age 65 and older and healthy life years at birth.

- **Healthy life expectancy at 65 years and over**
  Eurostat indicators show a decline in healthy life expectancy in Romania, in the period 2008-2011, by 3.2 years. The financial crisis has affected labor shortages, wage levels, healthy eating and not least caused erosion of health and decrease of healthy life expectancy. In 2011, although life expectancy for men was less than women, healthy life expectancy for men was higher than women. In the EU-27, the indicator was 8.6 years in a very good state of health, without any limitation of activity (European countries values ranging from 4.7 years Romania and 15.9 years in Norway).

  However, compared with men, women live in a poor health with serious problems. Women are more attentive to symptoms and often go to the doctor, more on prevention and are less involved in highly dangerous work. Although men have a lower life expectancy than women with up to 8 years, they still have a healthier life.

- **Healthy life expectancy at birth**
  Along with giving up milk and switching to solid foods begin to form the first diet habits, which are prerequisites for a healthy life. In 2011, the number of healthy life years at birth in the EU-27 reached 61.8 years for men and 62.2 years for women, representing 79.9% and 75.3% of total years of life. The largest number of healthy life years is enjoyed by citizens in Sweden (70.2 years for women and 71.1 for men), followed by Malta, Luxembourg, Greece and Ireland. In contrast, it is Slovakia and Slovenia which can expect to enjoy a healthy life until the age of 53 years for women and 52 men. Romania recorded the following scores: 57.1 years for women and 57.5 years for men by 4.3 years less than the EU average, and less than 5.1 for women.

3.4. Distribution of physicians in areas in Roman

According to the statistical data for 2011 (Figure 2) given by INS, it shows the occurrence of severe regional imbalances, which cause polarization of doctors in urban areas 89% compared to 11% in rural areas. About 100 villages in the country have no doctor available. The explanation is that urban areas, particularly universities, absorb doctors from surrounding or rural areas, making them become even more disadvantaged.
Shortage of qualified personnel, particularly in certain specialties, exerts negative influences on meeting the demand for medical services in certain regions. For example, in the South and Southeast, where there are major universities, the rate is of 773, or 655 inhabitants per physician, while in the northeast region it is recorded a doctor to 2,778 people. It is thus a major shortage of health workers in many counties such as Alba, Maramures, Vaslui, Suceava, Arad and Constanta. Both the health care reform and the migration of Romanian doctors in recent years have increased the total deficit of doctors by region and in some specializations.

4. Conclusions

Health is a priceless "good" to be protected and a key area of sustainable development. (EC, 2005). Low living standards of the population and low resources of the health system are the first causes of poor health of the population of Romania. Income is an important factor in determining the health status, so the more income is available to a person, or to a country, are higher, the health evaluation is more positive. Also, the economy of a country profoundly influences the health of people. Among the most important factors that led to the growth of good health care we can include increase of average life expectancy, healthy life expectancy increase and demographic processes, such as, for example, the aging process.

After the economic crisis that hit Romania, health expenditure was reduced by drastic measures such as reducing wage stopping employment in the public sector, unemployment, reduced investment in the system, reducing purchases of equipment etc. This has influenced the quality of population life, the health staff and quality of service, be it public health system, or especially private. Due to the poverty which it is facing now, Romania ranks last in the EU in terms of total health expenditure per person. Low level of education in the medical field (no prevention) and poor economic status of the population, explain why Romania has the highest rate of hospitalization in the EU, 215.13 admissions per 100,000 inhabitants, and one of the highest rates of mortality EU 974 death per 100,000 inhabitants.

In Romania inequalities are kept high between mortality rates by gender, residence, regions, counties and age groups. Inequality between men and women is generally retained,
also in healthy life expectancy, but the differences are not as great as in life expectancy in some countries being either non-existent or under reduction. While for men, the number of healthy life years increased, on average, in all countries, however, for women there were very small changes or they have not improved in the past decade. Thus, even if women live longer, they spend a greater part of life with a disability.

The general conclusion is that the money invested in health should be considered a "long term investment" and not just expenditure. It should also be established greater transparency regarding on spending money on health and on stopping waste. Maximum priority would be a need to find urgent solutions to increase the level of public health funding because the reduced public resources allocated to health directly affects the quality of medical care and is an important motivator of medical migration.

Also, the stress imposed by the impoverishment caused by the crisis, by poor allocation of public funds and corruption have had an impact on the health of the population, allowing the development of specific diseases of poverty.

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Abstract. In organizations, the people are the key resource, the vital energy of today and tomorrow, ensuring the survival, development and competitive success. All the organizations and the links established between them are forming the modern society we currently live in. The Public Administration in Romania is currently passing a transformation period and in order to increase the satisfaction and correctly supply the needs of the taxpayers, the Human Resource Management needs to improve fast. In order to research the Human Resource Management of the Romanian Public Administration, there were issued questionnaires to 41 cities and communes from the Ilfov County. On one hand they contained questions that helped to better sketch a picture of the current standing, but also generate hints for future development and improvement techniques. In addition there were 4 interviews with 3 mayors and the President of the Ilfov County Council. The results were quite surprising and in the context of Romania being already a member of the European Union, there is still a long way to go for the improvement but also for reaching some basic European standards. Romania is still a country where the political aspect predominates in the field of the Public Administration and the professional background of a person is not fully promoted. It would be interesting to conduct a follow up survey after 4 years and after comparing the results, to analyse the evolution of the improving of the Human Resource Management in the Public Sector.

Keywords: public administration, Human Resources Management, public servant, public policy, public strategy.

KEY ELEMENTS FOR THE IMPROVING OF HUMAN RESOURCE MANAGEMENT IN THE ROMANIAN PUBLIC ADMINISTRATION

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1. Introduction

In organizations, the people are the key resource, the vital energy of today and tomorrow, ensuring the survival, development and competitive success. All the organizations and the links established between them are forming the modern society we currently live in.

The Human Resources are considered the first strategic resources in the organization, are unique in terms of their potential for growth and development and their ability to know their own limits and overcome them, in order to face the new challenges and demands of the present and future.

Due to their particularities, the Human Resources are the only inexhaustible source of creativity, of brilliant solutions and new ideas, both original and valuable, which can lead to the development of the organizations and society as a whole, but can just as well destroy or cause huge disasters. Therefore it is understandable the concern of the organizations for the formation of high quality Human Resources, considering that people are the most valuable asset they possess.

The Human Resources are one of the most important investments of an organization. It is proven that investing in people is the surest way to ensure the survival of an organization or to ensure the development, competitiveness and future expansion.

2. What is Human Resource Management

Human Resource Management decisions are among the most difficult, as they interconnect individual, organizational and situational factors which influence and are found in those decisions. These decisions always need to be taken according to the person referred to and its personality.

Personal decisions vary from one organization to another, from a subdivision to another, from one country to another, because decisions must comply with their needs and their importance is not the same in all cases. Personal decisions must assess situation with dual, moral or ethical and legal aspect, and are extremely complex. They must be very responsible in terms of social responsibility and examined in terms of social impact.

Man by nature, its mentality and culture constitute a biological entity that, even in the context of genetic revolution, remains a great unknown. Human potential and how its way of manifesting differs from one individual to another, being genetically, biologically, socially, culturally, educationally influenced and also by other factors specific to each individual, each activity or each organization.

Hence, Human Resources represent a special human potential, which needs to be understood, motivated and trained in order for the employees to engage as fully as possible to achieve the organizational goals.

2.1. Main activities of the Human Resource Management

Most experts believe that Human Resource Management, like any other scientific field, is the result of specialized research and enrols on the trajectory of rapid development and diversification, process that is also encountered in other areas of activity. Depending on the purpose, the undertaken research and the addressed issues, the general management is divided into a variety of specialized areas, among which is included the Human Resource management, one field that over time experienced significant changes. "Human
Key elements for the improving of Human Resource Management

Resources Management" is a relatively recent, more modern term of what was traditionally called "personnel administration", "industrial relations", "personal leadership activities", "employee development", "personnel management" etc.

In the '80 and '90, in American universities appears the concept of Human Resource Management and the professionals guide their concerns to determine the human dimension of organizational change, in order to increase the attention to employee involvement and the relational system, as well as the integration of human resource strategies in the overall strategy of the organization.

According to the literature, "Human Resource Management" requires a holistic, interdisciplinary and professional approach of the personnel issues inside an organization. Human Resource Management involves continuous improvement of employee activity in order to achieve specific tasks and organizational goals. Successful implementation of Human Resource Management involves a system of performance evaluation and a system of employee incentive and rewarding good results.

Human resource management is of particular importance as it provides the function of personal achievement within the organization function, which serves a dual purpose: provides integration of the interests of each employee inside the general interests of the organization and ensures coordination of various aspects of proper staff management.

2.2. The public servant

The mutual and sustainable relationship between state and society, whatever its variations, was the foundation on which modern states have developed. Active actor, perhaps the most active, of state-building, the administration shared the same faith with the state, so that the state reform and political and philosophical debates that it accompanies, starts exactly by redefining the role of the administration.

The recurring theme in Western Europe, where the process of European unification aims at adapting and reforming the administrative structures to new economic, social and political realities, modernization of the civil function is also one of the key themes of Administration Reform in Central and Eastern Europe, being one of the foundations for strengthening of the transition and reform.

The most common approach to the relationship between state and administration is represented by the model focused on the market, according to which the public sector have to perform the same tasks in the management and supply of services just as private sector organizations, the used techniques are the same and once hierarchical structure removed, the talent and administrative skills of the civil servants will also increase public sector efficiency.

Regarding the issue of public office and status of those who exercise it, it is good to know that the first statute of the civil servants was made by Emperor Hadrian. Ancient Rome was concerned with the proper administration of the state and in Byzantium, the public services, as they were later called in theoretical texts, were organized into ten branches, with many ministries.

3. Research Methodology

The investigation of the impact this doctoral research had on the target group was performed by the indirect method, based on a questionnaire with questions of opinion.
As for the type of sampling, there was chosen the simple random sampling, which did not involve any preliminary operation for grouping the respondents: the individuals that make up the sample were chosen uniformly and with virtually identical probability for each. There were nearly 500 respondents (civil servants, senior civil servants, Public Managers and contracted staff) of public institutions and local government authorities in the Ilfov County urban area - eight cities and in rural area - 42 communes, women and men, occupants of command and execution positions.

The accuracy of the research depends heavily on the size of the sample - the results are more accurate, as the research sample is bigger (the law of large numbers). The statistical test, a survey of a number of 300-350 is shown as a rule, on striking representation, that will provide the same number of significant information as a sample of 10 or 100 times higher.

In general, a threshold probability of 95% is considered acceptable for good accuracy research. To be sure of reaching the number of respondents, we distributed a questionnaire to 250 individuals printed on DIN A4 paper and with the help of Google Forms we distributed the questionnaire by using Internet and Intranet in the institutions in electronic form to be completed by the employees of different municipalities and public institutions Ilfov County. The survey is representative for the target group and area of deployment Ilfov County, with a margin of error of ± 3.1% for a confidence interval of 95%.

The questionnaire was designed to investigate the local human resource management issues and policy and includes 50 questions of different types: closed, open, bifurcated and some even contain one short explanation on how to complete.

The questionnaire consists of several parts and is anonymous in nature to encourage subjects to give fair and impartial answers. The first part consists of descriptors and includes, in addition to characterize the sample questions (age, sex, education, type of city), questions about the position occupied by the respondent of the acting institution, and characterization of the type of public institution. The second part contains questions about the management of human resources within the organization, divided into several sections, such as: details about career development, the existence of a mentor or how to assess employee performance. The third part includes questions aimed in particular at aspects of development and implementation of public policies in public institutions of Ilfov County. The last part included aspects related to internal audit and risk management. With the help of the proposed questions, I wanted to capture the attitude towards the value of internal audit in the public institutions in the sample, because I think it plays a very important role to continuously improve the performance of human resource management within the local government.

Complementary to the research in this area, which is primarily based on quantitative data, this doctoral study uses a range of qualitative data in order to achieve deeper insights into the dynamics of the relationship between Human Resource Management in the Public Administration and internal audit correlated with improved performance in the medium and long term.
4. Findings and future research agenda

The undertaken study has identified in the public entities of the Ilfov County at least two profiles of employees: on the one hand there is the capital dedicated to career and devoted to the profession and on the other hand passive human resource. If the former are keen to promote, are concerned about performance, are ambitious and with spirit of initiative, not allowing to be diverted from their professional road, the latter are concerned with rather achieving tasks in a less competitive frame without too high aspirations but put emphasis on job security to secure a notably quiet family life.

Related to those concerned with their career, the motivations that urge them to persevere are related to: job security, material and financial wellbeing, performance driven work environment, the feeling of self-fulfilment, belonging to a group of professionals, social status, sincerity and safety at work. This category is concerned with the need for personal self-improvement and continuous improvement by participation in internships and intra- and inter-institutional exchanges in the country and abroad, sharing professional experience acquired by members of the public entities with their younger colleagues who are in their early career phase. They are concerned with their development, promotion and mobility.

In order for the results obtained from the local administration to grow, for the local government to have the utmost part of capable and competitive human resources to effectively contribute to solving local communities, there is a need of innovative local government policies and strategies that need to be implemented in the most efficient way.

Investigations showed that the majority of government employees said the incidence of achieving performance appraisal is done at least once a year. Half of the respondents said it is necessary to make changes to the methodology for the assessment of employees in the administration and among the suggestions offered, I have synthesized:

- Eliminate the appearance of formality.
- Provide objective and impartial evaluation. For this you need to define measurable criteria, relevant efficiency indicators to eliminate the possibility of subjective judgment or discretion.
- Employees marks must be consistent with the overall performance of the institution, the audit reports and the conclusions of the control the entity.
- Working scoring method based on characteristics of the activity.
- Assessment should be carried out by those working directly with staff without being influenced by the organization's leaders.
- More demanding tasks in the verification of service.

As the correlation with monetary stimulation mechanisms in the transition from the previous system to the new salary took into account that no person may not register a monthly salary decrease or employment benefits enjoyed by crude.

From a financial perspective, phased implementation of the new legislative framework involved framing the amounts allocated to the annual consolidated budget laws. Also, wage increase in the system requires their application to the financial resources, no automatic application ranking coefficients.

How the annual amounts allocated by the laws of the consolidated budget to be distributed on budget staff and wage levels are determined by the laws of special annual law enforcement framework.
They effectively determine the reform in which I stopped, including correlation with structural changes of government: reducing the number of positions in the public sector, the gradual transition to nominal wages, improved hierarchies within budget and system domains, degrees, gradations and salary increments.

Greatest satisfaction would be if, by following contents present approach, decision makers could achieve a step towards improving human resource management performance of the target system so that the citizen can be informed and in a reasonable time. It would be also nice if a follow up study will be conducted in 2-3 years, with the same questions, in order to analyze the differences.

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About the author

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Abstract. The health and the economic situation of a population are closely linked. The causality of their relation has been focus of various papers along the years. Consequently, the aim of the current paper is to underpin the most important factors that could improve the health of Romanian people. By using appropriate proxies for all the relevant constructs a series of models are constructed. Their main purpose is to better inform policy making in order to achieve a better health status of the population, hence a better economic situation of the country. The article considers innovating ways to measure health (new cases of illnesses reported by family doctors) and pays a special attention to mental health. The results point out a preventive approach to health care in Romania. Its implementation would bring about a wide range of benefits from both an economic and a social perspective.

Keywords: health indicators, dynamics of socio-economic factors, multidimensional analysis, social policy, EU convergence.
1. Introduction

During the last six years Romania has been struggling to adopt all the common European legislation and policies. Among the most important is the one regarding health and the healthcare system. In spite of all the efforts made our country still dedicates only 3.6%\(^1\) to health. This represents a major concern for both policy making and the population.

In the current economic situation health could prove to be an even more powerful determinant of economic growth. Moreover the relation between the two is, in most cases, a bidirectional one. Therefore, despite the fact that the subject has received a lot of attention in the literature, it is really challenging to discover the underlying associations for Romania, in the current economic situation.

2. Theoretical background

A large number of studies have focused their attention on modeling the action of social or economic determinants of health. Several initiatives were undertaken at both micro and macro level. The current study aims to discover the influence of economic and social factors on health, at the national level, and vice versa. For that purpose an extensive research of the existing literature was carried out.

There are two major sets of factors that are influencing health at a macro level: economic factors and social determinants. For example, one can consider the categories mentioned by one of the latest WHO report: the social gradient, stress, early life, social exclusion, unemployment, social support, addiction, food and transport (Marmot, 2003). Unfortunately, it proves quite difficult to find appropriate proxies for many of these factors at a national level. Moreover, some of them are highly influenced by income: social exclusion, social gradient etc. This is why we have considered the direct influence that this powerful predictor (income) has on health.

The causal and bidirectional relation between income and health has been the subject of several studies (Marmot, 2003). In fact, there are previous papers concerning the association between the two for Romania. Nevertheless, the proxies that they are using are different and less accurate ones (Jaba et al., 2011). As a study by the World National Bank shows a better suited measure for health could be the new cases of illness reported (World Bank Report, 1993).

Another factor that can be treated both as a dependent and as an independent construct, in relation with health, is unemployment. As various studies have shown (Suhrcke, 2005, p 49) the unemployment status has a negative effect on the health status of a person. On the other hand a poor health of the population could affect the percentage of people that are able to get a job. Hence, one finds a new vicious cycle between the two concepts. In order to break the cycle it is of utmost important to measure the exact strength of the relation for our country.

Education is vital for an economy. It also has a considerable impact on the health of a population, as previous studies have shown (Marmot, 2002, p 39). In fact, a study has also found the level of education to have a significant effect on the health of Romanian people too (Jaba et al., 2011).

As mentioned previously, the WHO report counts addiction amongst the relevant variables that can determine the health status of individuals. This relation also stands at the

\(^1\) http://www.ziare.com/articole/romania+cheltuieli+sanatate+pib
national level. One of the most frequent addiction problems in Romania relates to alcohol consumption. Fortunately, drug prevalence is still at significant lower levels compared to other European Union countries (Pralea and Enache, 2010).

Lastly, one of the variables taken into consideration by the current study is a rather controversial one. The social spending could have both a positive and a negative impact on health. Considering the literature the conclusion would be that the relation between social spending and health is largely dependent on the country profile. Consequently, the welfare system is to be considered when interpreting the results.

After the literature review a series of factors were selected in order to determine their influence on health, in Romania. Their operationalization and the methods used in order to gauge their impact are presented as it follows.

3. Research method

The analysis undertaken in the current paper is macroeconomic one. Hence the data was taken from sources as: INSSE, WHO and Eurostat. The data covers a period of ten years: from 2002 to 2010.

For each determinant of health, identified in the literature review, a series of variables was considered. The operalisation of the constructs is presented in the following table.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>New cases of illness, by disease classes, declared by family physicians</td>
</tr>
<tr>
<td>Mental health</td>
<td>New cases of illness, Mental disorders (thou)</td>
</tr>
<tr>
<td>Earnings</td>
<td>Gross Domestic Product in PPP</td>
</tr>
<tr>
<td>Economic distress</td>
<td>Unemployment rate</td>
</tr>
<tr>
<td>Health care system</td>
<td>Nursing staff</td>
</tr>
<tr>
<td></td>
<td>Sanitary units and beds in sanitary units</td>
</tr>
<tr>
<td></td>
<td>Total expenditure on health as part of the GDP</td>
</tr>
<tr>
<td></td>
<td>Social spending</td>
</tr>
<tr>
<td></td>
<td>Physicians Psychiatrists</td>
</tr>
<tr>
<td>Addiction</td>
<td>% Pure alcohol consumption, litres per capita, age 15+</td>
</tr>
<tr>
<td>Education</td>
<td>Literacy rate (%) in population aged 15+</td>
</tr>
</tbody>
</table>

In order to determine the impact that each of the constructs has on the dependent variable a conceptual model was constructed first. It includes all the relevant variables from the literature review, for which robust information were found.

In order to model this relationship linear regression was used. Before using this technique the main assumption of the regression were tested for the model. After that some descriptive information was considered for each of the variables in the model. They proved to be useful in understanding the results of the regression models that were run afterwards.
4. Results

The dependent variable had an interesting evolution on the period under analysis. From 2002 to 2010 there was a general increase of the number of new cases of illness, by disease classes, declared by family physicians, our main dependent variable. On the average the numbers of people that were declared sick increased with 51,625 per year. The highest increase was observed in patients that suffered from diseases of the nervous system and of sense organs: 40,250 new cases in average in the period 2002-2010. A relevant decrease was observed for diseases of the respiratory system: they decreased with an average of 89,375 per year.

A similar analysis was also carried out for the independent variables that characterised the health care system. From 2002 to 2010 the number of sanitary units increased with 5.58% which means in absolute value an increase with 2235 units per year. This evolution was mainly due to the increase of the number of health specialised offices (987 new units/year) and dentist offices (564 new units per year).

On the other hand the number of beds in hospital has decreased on average with 2465 beds/year.

Medical-sanitary staff - The number of physicians, dentists and ancillary medical staff also includes the corresponding staff from other ministries and institutions with own network. The number of ancillary medical staff includes: medical assistants; medical nurses; sanitary technicians; midwives; laboratory assistants and other categories of medical staff with equivalent secondary school degrees.

Considering the definition above the data shows that the number of medical-sanitary staff has increased on average with 684 persons per year. It is interesting to mention that when one looks into further detail another situation is presented. For instance the number of medium sanitary staff (mainly nurses) has increased in the period 2002-2007 with 2503 persons/year on average. Nevertheless, in 2007 the situation changed and the number dropped with 3232 persons/year.
Determinants of health and their implication on social policy in Romania

Figure 2. New cases of illness, by disease classes, declared by family physicians

An overview of the evolution of the relevant factors influencing health is presented in the graphic below.

Figure 3. Factors influencing health (Source of Data – www.insse.ro)

The alcohol consumption, measure in litres per capita for persons over 15 years has increased over the analysed period from 59% in 2002 to 93% in 2010. On the other hand the literacy rate has decreased from 85% in 2002 to only 54% in 2010. The only variable that has remained almost constant was the total expenditure on health as part of the GDP. Its value remained close to 5.6% over the years.

After performing a primary and preliminary analysis on the data several regression models were constructed, starting from the conceptual model presented before. The results are presented in the table below.
First of all we considered a series of unifactorial regression models in order to gauge the influence of each factor on the dependent variable. Taking into consideration the relations underlined by the conceptual model the dependent variables were: New cases of illness, declared by family physicians, Total expenditure on health (THE) as % of GDP, Nursing staff (persons), New cases of illness, Mental disorders (thou) and Physicians Psychiatrists (persons). The results were as it follows:

- **GDP (PPS per inhabitant)** is a significant factor that accounts for 52.4% of the variation in new cases of illness, the main dependent variable. The results are similar with the literature as an increase of one unit in the GDP (PPS per inhabitant) will determine an average decrease of 194 persons in the number of new cases of illness.
- **Unemployment rate, annual average** is also a significant factor that accounts 75% of the variation in the new cases of illnesses. An increase of 1% in the independent variable determines an average increase of 789 584 in the dependent variable.
On the other hand the variable „New cases of illness, declared by family physicians” has in its turn an important influence over the number of nursing staff. In fact the change in the number of illnesses accounts 54.5% of the variation of the staff. Surprisingly the relation is not a direct one. As the number of illnesses decreases by one the personnel decreases, on average, by 6.5 persons. This strange relation could be partly explained by the fact that a large number of qualified medical staff is currently leaving the country in search of better salaries. Nevertheless, the finding is puzzling and should be looked at more carefully.

The percentage of people that consumed alcohol influences 62.6% of the variation in new cases of mental disorders. At an increase of one percent in the population over 15 years old that consumes alcohol we would have approximately 2 new cases of mental illness.

As expected there is a direct relation between the number of psychiatrists and the new cases of mental illnesses. In fact at an increase by 1000 in the number of new cases of mental illness the number of psychiatrists increases by almost 7 (6.8 persons).

The last factor considered was the social protection expenditure. Its evolution accounts for 57.5% of the variation in new cases of illness. It is interesting to mention that the relation is a negative one. As the social protection expenditure increases with 100 euros/inhabitant the number of new cases also decreases with 5966.

Considering the results above a multifactor regression model was considered. The model is presented below and it encompasses the influence of most of the factors considered until this moment. $y = a_0 + a_1x_1 + a_2x_2 + a_3x_3 + a_4x_4 + a_5x_5 + \varepsilon$

Where:

- Depended variable ($y$) - New cases of illness, declared by family physicians
- Independent variables:
  - X1 – Unemployment rate, annual average (%)
  - X2 – GDP Purchasing Power Standard per inhabitant
  - X3 – % Pure alcohol consumption, litres per capita, age 15+
  - X4 – Literacy rate (%) in population aged 15+
  - X5 – Total expenditure on health / capita at Purchasing Power Parity (NCU per US$)

From the original model two variables were dropped out due to the lack of significance. Therefore the final regression model only takes into account the influence of the unemployment rate, pure alcohol consumption rate and total expenditure on health.

$y = 9668.574 + 896.1 \cdot x_1 - 24.340 \cdot x_3 + 2.442 \cdot x_5$

(0.000) (0.001) (0.037) (0.032)

The R value ($R = 0.955$) is indicative of a strong connection among the dependent variable and the influencing factors. Moreover the change in the independent variables accounts for 91.3% of the variation in the number if new cases of illnesses.

An increase of 1% in the unemployment rate will generate a number of 896100 of new cases of illnesses. While this relation is in line with the literature and the findings so far, the influence of the other two factors is rather unusual. For instance an increase in the expenditure on health care will generate an increase in the number of new illnesses and not a decrease. This could be partly due to the fact that usually this increase means investing in curative care and not preventive care. A possible solution would be redirecting the investment in preventive medicine.

Another peculiar result shows that an increase in the percentage of people that consume alcohol will generate a significant and rather large decrease of the number of new cases of illnesses. Most likely this is a spurious correlation and should be investigated in depth.
After the analysis of the factors that influence the new cases of illness, the same variable was considered as an independent variable. This is to account for the bidirectional relation between new cases of illness and the total expenditure on health.

Moreover, the model was completed by adding the variables: beds in hospital and number of physicians. Both of them tend to influence and to be influenced by the total amount that a state decides to invest in public health.

Dependent variable (y) - Total expenditure on health (THE) as % of GDP

Independent variables:
- X1 – New cases of illness, declared by family physicians (thou)
- X2 – Beds in hospitals - total
- X3 – Physicians (persons)

The final model is presented below:

\[
\hat{y} = -5.998 + 0.000141 \cdot x_1 + 0.000027 \cdot x_2 + 0.000111 \cdot x_3
\]

The correlation between the dependent and independent variables is a strong one (R = 0.948). Consequently, 89.9% of the variation in the percentage of health expenditure from the GDP is determined by the three factors.

According to the regression coefficients if the number of new cases of illness would increase with 1000 there would be an increase of 0.000141% in the expenditure allocated from the GDP to health. In the same time number of beds should increase with 100 000 in order to determine an increase of 2.7% in the same share of the GDP for health. On the other hand the

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Constant)</td>
<td>9668.574</td>
<td>1201.725</td>
<td>8.046</td>
</tr>
<tr>
<td>Unemployment rate, annual average (%)</td>
<td>896.100</td>
<td>142.481</td>
<td>.983</td>
<td>6.289</td>
</tr>
<tr>
<td>Total expenditure on health / capita at Purchasing Power Parity (NCU per US$)</td>
<td>2.442</td>
<td>.862</td>
<td>.724</td>
<td>2.833</td>
</tr>
<tr>
<td>% Pure alcohol consumption, litres per capita, age 15+</td>
<td>-24.340</td>
<td>8.276</td>
<td>-.691</td>
<td>-2.94</td>
</tr>
</tbody>
</table>

The correlation between the dependent and independent variables is a strong one (R = 0.948). Consequently, 89.9% of the variation in the percentage of health expenditure from the GDP is determined by the three factors.

According to the regression coefficients if the number of new cases of illness would increase with 1000 there would be an increase of 0.000141% in the expenditure allocated from the GDP to health. In the same time number of beds should increase with 100 000 in order to determine an increase of 2.7% in the same share of the GDP for health. On the other hand the
number of physicians should increase with 10 000 in order to determine an increase of 1,11% in the same share of the GDP for health.

All in all the relations affecting the health care system in Romania are rather fragile. They are largely influenced by the present socio-economic and political situation and tend to be bidirectional ones. This last aspect makes it harder to determine a clear casual relation and its direction. Nevertheless, the findings of this paper could help improve the decision making process when it comes to health.

5. Policy recommendation and conclusions

In the light of the recent findings it is clear that some policy changes are required. First of all, the percentage of the GDP dedicated to health should definitely be increased. However, the focus for this additional spending should not be curative medicine but rather preventive medicine. This way the direction of the relation between percentages of GDP spent on health and new cases of illnesses will change. This type of policy has proven to be highly successful in the Northern countries of the European Union. Such is the case for Denmark, Sweden and Norway.

An increase in the spending on preventive health measures could also contribute to a decrease in alcohol consumption and an increase in health literacy. While the first factor proved to have a rather unexpected effect on the new cases of illness the second is closely related to literacy but has a rather distinct sphere of influence. Therefore the health literacy of a population has a strong effect on its health status. Consequently, a larger budget for preventive medicine, as part of the GDP, could mean extra knowledge concerning health and preserving health for the population. This will reflect eventually in a lower number of new cases of illnesses.

Since the GDP per inhabitant is difficult to increase and moreover it is dependent on a complex set of factors one should focus its attention on things that can be changed. One of those could take the shape of a special policy meant to retain the health professional in the country. Over the last six years over 14 000 doctors have left the country in the pursuit of better payment. This could be considered as a double lost since the state has invested large sums of money in their preparation and now the population is suffering from an acute lack of nursery staff. This could be a possible explanation for the strange relation discovered by this paper. A possible remedy for this could mean a policy aimed at offering better perspective for the young doctors. This could be translated in a higher salary for doctors at the start of their careers combined with other additional benefits as: reduced housing taxes etc. This could be translated in a higher salary for doctors at the start of their careers combined with other additional benefits as: reduced housing taxes etc.

In conclusion, the health status of the population is affected by various factors and the relation is not a unidirectional one, nor a causal one in most of the cases. Regression modelling proves to be an effective way to measure both the intensity and direction of these relations. In spite of that further research is needed in most of the cases in order to unveil the hidden factors mediating the visible relation.

Health, measured as new cases of illnesses declared by family doctors, is influenced by economic factors such as: GDP per capita (PPP), unemployment rate, % of GDP invested in health, social spending; health care system factors: number of physicians, number of psychiatrists, sanitary units and beds from sanitary units etc. Moreover there is a series of social determinants that have a significant impact on the health of the population: literacy and alcohol consumption. This underlying relation could be changed for the better with an increase in the percentage of the GDP invested in preventive health.
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http://www.ms.ro/upload/Raport

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Abstract. Finding new solutions that point out existing human potential in SMEs is an important element in reviving the national economy. Featured by diminished personnel, high flexibility and the possibility of a fast answer to external factors development, SMEs are based on human agent and on informal relations between organization’s members. Organizational Citizenship Behavior (OCB) being an important competitive advantage. Our study is a compared analysis of the Organizational Citizenship Behavior (OCB) at Romanian SMEs level, analysis achieved at the Romanian Development Regions level between December 2012 – August 2013 on a 560 representative sample of SMEs. Data obtained by our socio-economical investigation based on a questionnaire, were processed with Microsoft Excel Software. The results highlighted approach differences at managerial level concerning informal relations in organizations, these being one of the causes of performance differences between SMEs performances at Romanian Development Regions level. Measuring Organizational Citizenship Behavior level and discussing the causes that influence it, highlight that performances are not exclusively based on investments but also on another approach of the connections Manager-employees

Keywords: organizational citizenship behavior, SMEs, development regions, Romania, employee, compared analysis.

ORGANIZATIONAL CITIZENSHIP BEHAVIOR COMPARED ANALYSIS AT ROMANIAN SMEs LEVEL

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1. Introduction

The interest for creating and developing small and medium-sized enterprises (SMEs), had been justified amplified, in the context of recent years global crisis. A well-known and influent expert in management theory and practice, wrote about SMEs that small business are "the main catalyst of economic growth", being at the same time "the motricity forces" of social and economic progress in each country. (Drucker, 1999)

In an economic globalization Epoch, when big transnational corporations dominate world economy, seems hard to believe that small businesses (SMEs), may bring an important contribution to the development of social-economical field. But, numbers are probative. Despite nowadays economical-financial crisis, SMEs field continued to be the backbone and the engine of the European Union economy, “with some 20.7 million firms accounting for more than 98 % of all enterprises, of which the lion’s share,92.2 %, are micro enterprises, firms with fewer than ten employees. For 2012, with more than 87 million person employed, it is estimated that SMEs accounted for 67% of total employment and 58% of gross value added (GVA).” (Annual Report, 2012)

In European economy, SMEs are a major source of antrepreneurial abilities education and value, being an engine of innovation for all economic fields.

Between 2005-2012, the main SMEs indicators at European Union level, were situated on a growing trend, except 2009, year marked by a significant decrease. During the analysed period, SMEs number grown by 6%, increased with 3% and the added value increased by 17%. (Eurostat, 2011)

In the past 10 years, in Romania, SMEs evolution followed national economy trend. If, between 2003-2008 their number grew continuously, when the first signs of the economical-financial crisis arrowed in 2009, it began a decline period and SMEs number decreased continuously over the next three years.

A factor that fully contributed to this phenomenon stressing was the flat-rate tax introduction in 2009 for SMEs. However, their share in total turnover, 60.5% in 2010, as well as their contribution to gross added value, almost 54% in 2009 (Pâslaru and Modreanu, 2012), showed SMEs potential.

Concerning the desire to bring in management interest area new directions, in which it can action in order to grow business competitiveness, we made a research about Organizational Civic Behavior in Romanian SMEs, approaching a less-known and less-explored subject from literature in this field.

2. Literature review

Organization members behavior constitute from the beginning of the 20th Century an important field of study. A number of ideas and items of study which can be found in Barnard (1938) manuscripts – *willingness to cooperate* and Katz and Kahn (1966) studies – *patterns of individual behavior*, constitute also nowadays important study directions in organizational behavior field and implicitly, of the Organizational Citizenship Behavior.

Organ (1988), considered to be the founder of this concept, defines Organizational Citizenship Behavior (OCB) as being “individual behavior that is discretionary, not directly recognized by the formal reward system and that in the aggregate promotes the effective functioning of the organization. By discretionary, we mean that the behavior is not an enforceable requirement of the role or the job description, that is, the clearly specifiable terms of the person’s employment construct with the organization; the behavior is rather a matter of personal choice, such that, its omission is not generally understood as punishable.” Organizational Citizenship
Organizational citizenship behavior compared analysis at Romanian SMEs level

Behavior (OCB) as it is defined by Organ (1988) is based on three main elements – is a voluntary behavior, a personal choice, not being requested directly or explicitly in a formal way by Organization management, situated outside the requirements of the job and having a positive impact over organization’s performances. Some years later Organ (1997) redefine Organizational Citizenship Behavior (OCB) “…as contributions to the maintenance and enhancement of the social and psychological context that supports task performance”, continuing his idea he says that OCB also “…performance that supports the social and psychological environment in which task performance takes place” (Organ 1997). Recently Organ, Podsakoff and MacKenzie (2006) reiterates the idea that “citizenship behaviors are those behaviors that often go beyond an employee’s job description and include acts like helping others, taking on additional responsibilities, putting in extra hours, defending the organization, and speaking out about important organizational issues”.

According to literature, Organizational Citizenship Behavior (OCB) has the following components:

a) **Helping Behavior known as Altruism**: is considered, by the majority of the researchers from this field, an important OCB component that includes all types of helping behaviors manifested voluntarily, between coworkers. The main purpose of this behavior is to avoid situations that may cause problems concerning the work done at individual level and at the level of the Organization. The Helping Behavior exhibited by the members of the Organization within it may significantly improve individual performances and the workplace environment and implicitly, may help to increase the performance of the Organization as a whole.

b) **Sportsmanship** is defined by Organ (1990) as “a willingness to tolerate the inevitable inconveniences and impositions of work without complaining”. This definition was completed by Podsakoff et all (2000), in the sense that “… but also maintain a positive attitude even when things do not go their way, are not offended when others do not follow their suggestions, are willing to sacrifice their personal interest for the good of the work group, and do not take the rejection of their ideas personally”. A high level of this behavior induces a pleasant and relaxing atmosphere into the Organization, what obviously will determine a significant stress reduction, at individual and collective level and so will be created the premises for a casual work atmosphere and great results.

c) **Organizational compliance.** In Organizational Citizenship Behavior (OCB) literature, to this type of behavior has been attached many titles – organizational Compliance or Conscientiousness or Generalized Compliance or organizational obedience, stirring up over time an impressive number of controversies, both about its content and its term. "Organizational conscientiousness", was considered “a part of impersonal forms of conscience that doesn’t give immediate help to a person, but which rather helps indirectly other people from the system (Organization)” (Smith, Organ and Near, 1983). Later, Organ (1997), redefines this type of behavior conscientiousness claiming that “…which offers no immediate aid to any person, but demonstrates and sustains high standards for attendance, punctuality, conservational of organizational resources, and use of time while at work”.

d) **Civic Virtue** is a term taken from Politics and Philosophy to Management, representing at Organization level, for its members, what civic virtue represents for a citizen in relation with his homeland, what means that an employee that proves Civic Virtue embraces the responsibilities induced by the quality of “citizen” of the Organization. Organ (1990) defines Civic Virtue as being a behavior “…responsible, constructive, involvement in the political process of the organization...” or in other words, is the behavior in which members engage by constructive opinions, attending meetings, discussions with work colleagues and so on, in smooth running of the activity of the Organization.
e) Organ (1990) defines *Courtesy* as being “the behavior by which we avoid the situations in which our actions may have undesirable repercussions over work colleagues activities. Konovsky and Organ de (1996) considers the following types of behaviour, *Courtesy* – trying to avoid creating problems to work colleagues, having constantly in mind the effects that can affect their own actions on colleagues, consulting with colleagues about the effects that may affect them because of our own actions and, implicitly, consulting your colleagues before taking any major decision. Even if this component, "*Courtesy*", was included in a relatively recent study in "Helping behavior" (Organ, Podsakoff and MacKenzie, 2006), we consider useful to keep it as a distinct entity within OCB because, reported at personality factors it appear as having specific traits, different from "Helping behavior".

Organizational Citizenship Behavior (OCB), unitary as a whole, has obviously particularities in SMEs, mainly resulted, from the control of quasi-general activities by a sole person, a businessman, and by a relatively small number of staff from this kind of Organization. Under these conditions, the role of interpersonal relations becomes extremely powerful, fast and direct communication between members of the Organization creating the premises of an OCB with strong positive accents. Organizational structure is extremely simple, the entrepreneur acting on his own, concerning Organization’s strategy. Entrepreneur’s personality, his faiths, his education and personal experience will strongly influence Organizational Behavior in general and Organizational Citizenship Behavior in particular. But, the main majority of entrepreneurs don’t have clear knowledge about management, don’t have a managerial education. Under these conditions is extremely difficult for them to advantage, by the advantages that OCB may induce at Organization’s level.

Many studies carried out at the level of SMEs (Way, 2002; Drummond, 2007; Appelbaum, 2000; Bacon, 2005; Barnard, 2000) revealed the importance of showing up the human resource value that, because of psychological and behavioral particularities of employees, may constitute by their singularity a fundamental element to achieve competitive advantage. This is the purpose we considered useful an Organizational Citizenship Behavior (OCB) research at SMEs level.

### 3. Method of data collection and analysis

#### 3.1. Method of data collection

This study analyzes employees Organizational Citizenship Behavior (OCB) in Romanian SMEs and it was and has been conducted between December 2012 and August 2013, at the level of the 8\(^{th}\) areas of economic and social development. The research method that we used was the socio-economic survey based on questionnaire. From a total of 10.000 questionnaires that we sent, we received 560 answers. Data obtained were processed by Microsoft Excel software.

The questionnaire is composed of a number of 72 statements, distributed as follows: 24 statements concerning own Organizational Citizenship Behavior (OCB), 24 statements concerning work colleagues OCB and 24 concerning Managers OCB. Each set made of 24 statements evaluates OCB components levels: *Altruism, Conscientiousness, Sportsmanship,Courtesy, Civic Virtue*.

The OCB questionnaire was processed and adapted after Podsakoff (1990) and translated together with a licensed translator. We used Likert Scale in 5 steps, having the following answer possibilities: 1-Never, 2-Once or twice, 3-Once or twice a month, 4-Once or twice a week, 5-Every day. OCB level was calculated by arithmetic mean of the scores recorded, and took values in the range (1;5).
Organizational citizenship behavior compared analysis at Romanian SMEs level

Data obtained were collected with Google Drive online software that allowed us to import data into Microsoft Excel, to make calculations and functions and which offered us automatically graphs and diagrams while questionnaires were filled in by the participants. Data were processed by Microsoft Excel software, a tool that has a high degree of fidelity. (Mărginean, 2000).

To better know the chosen segment, in the table below we preset data concerning SMEs distribution by development regions, the minimum number of representativeness of SMEs and the number of people questioned.

<table>
<thead>
<tr>
<th>Development region</th>
<th>SMEs number</th>
<th>The minimum representative sample from total SMEs</th>
<th>The number of SMEs that filled in the questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Region – NE</td>
<td>55,305</td>
<td>40</td>
<td>42</td>
</tr>
<tr>
<td>2nd Region – SE</td>
<td>66,872</td>
<td>45</td>
<td>48</td>
</tr>
<tr>
<td>3rd Region – S</td>
<td>114,000</td>
<td>83</td>
<td>84</td>
</tr>
<tr>
<td>4th Region – SV</td>
<td>25,451</td>
<td>19</td>
<td>26</td>
</tr>
<tr>
<td>5th Region – V</td>
<td>35,208</td>
<td>26</td>
<td>32</td>
</tr>
<tr>
<td>6th Region – NV</td>
<td>71,370</td>
<td>52</td>
<td>57</td>
</tr>
<tr>
<td>7th Region – Centru</td>
<td>85,320</td>
<td>55</td>
<td>77</td>
</tr>
<tr>
<td>8th Region – Bucharest–Ilfov</td>
<td>96,452</td>
<td>70</td>
<td>194</td>
</tr>
<tr>
<td>TOTAL</td>
<td>500,000</td>
<td>384 (maximum 1800)</td>
<td>560</td>
</tr>
</tbody>
</table>

Source: Authors contribution, on SMEs White Carta basis, 2012.

Our research aimed to test the following two hypotheses:

H1: Romanian SMEs Employees have a strong Organizational Citizenship Behavior (OCB).
H2: As rated by work colleagues, OCB components level differ depending on the development region in which SMEs are.

3.2. Analysis

Regarding the information obtained by The level of Organizational Citizenship Behavior (OCB) recorded at the level of Romania’s SMEs, according to the information obtained on the basis of the survey and analyses carried out, has a medium value of 3.3089, what allows us to validate the 1st hypothesis H1: Romanian SMEs Employees have a strong Organizational Citizenship Behavior (OCB).

Next, we will carry out an analysis of the levels of the five Organizational Citizenship Behavior components (Altruism Conscientiousness, Sportsmanship, Courtesy, Civic Virtue), recorded at the level of Romania’s SMEs, rated at the level of people who responded the questionnaire.

Figure 1, shows the level of work colleagues Altruism, recorded at the level of Romania’s SMEs. Here we can see an obvious difference between the value registered in the North-East development Region that has the highest score (that exceeds the threshold of 4 and tend to the maximum value 5) and the values recorded in the other regions (values that oscillate in the range 2.5-3.8).

There is a glaring discrepancy between Altruism value recorded in the South region (2.6) and the one registered in North-East (4.2).
We can note that, in the regions where *Altruism* level has the highest values (North-East, West, North-West), the cultural level of the families from where the Organization’s members come from, is high-positive. At the opposite pole, family culture of the individuals that live and work in the South Region of Romania is scarce.

\[\text{Figure 1. Work colleagues Altruism, in Romana’s small and medium enterprises (SMEs), by development regions}\]

SMEs that activate in the Nort-East development Region, have the highest level of Conscientiousness (4.4), as it was resulted from a review made by the respondents concerning their work colleagues, while the lowest values (but over 3), were recorded in the South and Center Regions (Figure 2). So, we note that, Organization’s members that meet the best the informal rules of the Organizations they belong, are those from the North-East Region. On the other side, at the opposite pole are managers and employees from the development Regions, Center and South.

\[\text{Figure 2. Work colleagues Consciou}\text{sness, in Romania’s small and medium enterprises (SMEs), by development regions}\]

As for work colleagues *Sportsmanship*, we observe that SMEs employees from the South Region are those who, in particular, don’t avoid conflicts, the value registered for
Organizational citizenship behavior compared analysis at Romanian SMEs level

Sportsmanship being 2, under the medium level of 2.5 (figure 3). We believe that the most employee that avoid conflicts are in North-East, South-West, North-West, West, Center and Bucharest - Ilfov Regions.

Concerning work colleagues Courtesy (Figure 4), SMEs members that give the greatest importance to this kind of behavior are those from North-East and South-West Regions, at the opposite pole being the South development Region. From here, one can detach the idea that SMEs employees from the South Region act without taking into account the effect that their actions create over their work colleagues and even over the SMEs Management.

Concerning the four OCB components analyzed so far, North-East Region has the first place regarding Altruism and Consciousness, the South Region has the first place regarding

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Sportsmanship and the South-West Region has the first place concerning Courtesy. As for work colleagues Civic Virtue, the top place is taken by Bucharest - Ilfov Region (3.52), followed closely by the regions South-East (3.5) and West (3.5). In this situation, the South Region has the last place with a score of 2.8 (Figure 5).

Figure 5. Work colleagues Civic Virtue level, in Romania’s small and medium enterprises (SMEs), by development regions

Overall, analyses show that work colleagues Civic Virtue (3.21) and Sportsmanship (3.15) have the lowest levels from all OCB components, measured at Romania’s SMEs level.

Analyses that we conducted show that the 2nd hypothesis \(H2\): As rated by work colleagues, OCB components level differ depending on the development region in which SMEs are.) is validated; between Organizational Citizenship Behavior (OCB) components are significant differences.

4. Findings and future research agenda.

Concerning the 8th Romania’s development Regions, as educational, cultural, family connection, habits, traditions, historical or economic development differences appear, also appear both Civism and Sportsmanship.

The present research aimed to investigate the Development Regions and we retained some useful information: the South Region has the lowest scores concerning all OCB components levels measured at Romania’s SMEs level, while, the highest scores are in North-East for Altruism and Consciousness; Civic Virtue has the first place in Bucharest-Ilfov Region, Sportsmanship in North-East, South-West, North-West, West, Center and Bucharest-Ilfov Regions and Courtesy in South-West. We can notice that on one side SMEs members from the North-East development Region have a strong helping behavior, those from the North-East, South-West, North-West, West, Center and Bucharest-Ilfov Regions avoid conflicts as much as possible, are punctual and they use the working time integral, employees from the South West region avoid carrying out actions that affects negatively their work colleagues, but they don’t involve in the Organization’s (they belong) well function, avoiding to provide constructive
opinions about the smooth running of the Organization’s activities, avoiding to participate to meetings and discussions with colleagues that can bring benefits to SMEs. Concerning OCB components and all 8th development Regions of Romania’s SMEs, they have oscillatory scores.

These findings are going to be corroborate with data from the other 48 statements from the questionnaire administered and we’re willing them to be the basis of some recommendations that might help SMEs Managers to position their Organization better in the competitive business area.

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Abstract. This article aims to present creativity as a link between marketing and accounting and the way in which creativity is used in order to appeal to the users of accounting and financial information. By emphasizing the main factors of the occurrence of creativity in accounting, we analyze the way in which by using certain special techniques and principles the accounting information may be presented in a more attractive manner so as to “sell” it to those interested. We also analyze the similarities and differences between the two disciplines as seen from the perspective of creativity as well as the positive and negative aspects which characterize its actions in each case. Thus, we emphasize that, apart from the presence of some weaknesses in the accounting regulations in force, the main factor of creative accounting is the attitude of accounting information users. By observing their attitude we can discover the management’s vulnerabilities and way of action in order to satisfy the information needs to which various categories of users offer special attention.

Keywords: creative accounting, marketing, financial statements, users, loyal image.

CREATIVE ACCOUNTING AS A FORM OF MARKETING

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1. Introduction

“Accounting is one of the most ingenious creations of the human mind.” (Goethe)

Globalization has always been synonymous to the occurrence of new challenges for accountants faced with new forms of manifestation of the identity of companies in permanent competition on an enhanced market where the need for information is diversified and quick, sometimes becoming even a marketing and advertising tool. In this context the accountant must find quick solutions for adapting to the new information requirements, thus focusing on the idea of creativity in order to find solutions and treatments able to boost the image of companies in a competitive environment and to obtain advantages without breaking the law.

Also, the economic, legal and social developments, but also the pressure of information users has rendered accounting innovation necessary and based on it the development of creative accounting. Throughout the time, accounting has also been treated as a sort of art: “the art of forging or falsifying a balance sheet”, “the art of calculating benefits”, “the art of presenting a balance sheet”, “the art of creating provisions”. With these definitions in mind, the idea of creativity in accounting may be seen as a means of promoting the company in the ranks of the users of information presented in financial statements and in this way it may be compared to real marketing strategy.

This article aims to set out the factors which influence a company to use creativity techniques in accounting, to emphasize the aspects related to marketing in the undertaken actions and to present the causes which persuade the company’s managers to use these means of presenting the financial information.

Methodology of research

The research procedure hereof consists of analyzing the common aspects between accounting and marketing from the perspective of creativity.

The research method used is based on data available in the secondary sources, documentation respectively. I have chosen this method as it has certain advantages in the development of the research: it allows for efficiency in obtaining information, it offers the possibility of comparing the information provided, thus increasing the degree of trust, it entails a smaller effort of collecting data, the information obtained is more objective and in certain cases unique, offering information which otherwise would be unavailable. The main secondary sources used were external sources such as official documents, specialized magazines and publications, statistic census, media, Internet, the documents belonging to various analyzed companies and specialized literature.

The research tool used in the survey was the identification and analysis of the data obtained during documentation and its classification depending on the importance and relevance for the article theme.

Throughout the years numberless surveys and research have been conducted in order to become familiar with this phenomenon and researchers have tried to shape definitions able to characterize these practices.

Used for the first time by J. Argenti in 1973 the idea of creativity in accounting was construed as a prediction of the crisis. Argenti blamed everything on the incompetence of managers which brought about a decline in the society’s activity. Subsequently in 2000, Salustro and Leburn argued that “periods of crisis are tests for undertakings affect their cash flow and generate risks, for which reason accounting cannot be done in an impeccable manner. That is why, managers are tempted to resort to ingenious procedures, questionable most of the times, for refining presentation accounts."
Contrary to this affirmation, businessmen believe that the use of manipulation practices at a certain point may save the company which faces a financial bottleneck, arguing that the controlled and moderate use of creative accounting may have positive influences such as obtaining funds during crisis in order to support the company’s activity. For some authors creative accounting is "a set of procedures aimed at changing the result level, in order to enhance or decrease or presenting financial statements, without these objectives being mutually excluded" (Stolowy, 2000) while for others it is "the totality of accounting techniques and operations which, without leaving behind the accounting norm, allow the managers of an undertaking to modify the result value or to change the aspect of accounting documents, Annales Universitatis Apulensis Series Oeconomica (2009).

As a matter of fact, creative accounting is a form of research, of analyzing factors and expressing an opinion with respect to a given phenomenon as long as the undertaking’s benefit is targeted and not one’s personal benefit, as well as the continuation of activity and its development. As Naserhimself (K. Naser, Creative financial accounting: its nature and use, Prentice Hall, 1993) specified, this form of accounting appeared as a result of the permissive nature of accounting norms through the existence of weaknesses which offer the flexibility of being able to choose certain accounting practices which present the company’s activity in a favourable light. In other words it allows the user to look at the accounting process in the light of shaping the wished or forecast result.

Dilip (2006) argues that the actual incentive of creative accounting is represented by the conflicts of interests between various groups for instance investors and shareholders who wish to obtain more profit from share capital and dividends while employees intend to get bigger salaries and high profit share or the group which consists of shareholders whose interest is to pay reduced amounts for the dividend tax while tax authorities would like to collect more taxes etc.

Starting from this cause, the notion of creative accounting was isolated from other practices. An important difference is made by Jones (2011) who considers that flexibility may coexist with accounting which at the same time can offer a clear and loyal image of accounts, so that they can serve the users’ interests, but it may also take the shape of fraudulent financial reporting when the use is made for the purpose of managing, measuring and presenting accounts in such a way so as to serve the interests of financial statements and fraud in order to offer a false image of the accounts.

The results of this research show that certain elements of creative accounting practices are the same.

2. Analysis and results of the research

Creative accounting developed mainly in Anglo-Saxon economies due to the liberties of the accounting profession and it placed itself at the border between the legal form and the economic substance of transactions and events. From the perspective of accounting practitioners, the occurrence of creative accounting is based on the main and alternative treatments used for solving the same problem since in many situations an accounting problem has at least two solutions with different effects on the undertaking’s financial position and performance. Also, creative accounting was influenced by the flexibility of international accounting norms.

In most of the cases, creative accounting is treated in a negative manner which has the tendency of facilitating the drafting of financial statements able to cater for the needs of the management with respect to the undertaking’s financial position and performance, transforming them from what they must be to what it is wished to be. The simultaneous treatment of creative accounting as a tool for achieving accounting interests but also as an accounting scheme relies on
the accounting policies adopted by an undertaking in order to produce and communicate information.

Nowadays people’s need to be informed and implicitly the economic operators’ need to be informed undergo a constant change. These categories also include the users of financial statements which aim to make use of the existing information seen as an unlimited resource without which the society cannot advance. In this case, the quantification of events is mainly incumbent upon accounting as management science.

Starting from the affirmations of Luca Paciolo in whose opinion the object of accounting consists of “recording the entire trader’s large and small transactions, in the order in which they took place”, an idea is shaped according to which by means of the information presented in accounting the entrepreneur is provided with the basis of carrying out his activity in order to obtain the best profit and to observe the law.

2.1. Similarities and differences between creative accounting and marketing

Accounting and marketing are part of the same family of economic disciplines. In marketing, the rule is to deceive, to sell by means of the created image, to exaggerate the qualities of a product or to create the image of a product. Those who are attracted by the ideal presented by marketing are participants on a market, the same as those who are attracted by the shares presented in creative accounting; the difference between them is that the former buy products while the latter buy shares. While in Marketing creativity is most welcomed, being considered a main characteristic of the discipline, in accounting it has negative connotations most of the time. At the same time, loss risks occurred as a result of excessive creativity is much higher in accounting and affect a larger number of people. As to the moments when creativity is used, in marketing this occurs when a new product is launched or re-launched while in accounting there is a series of specific cases:

- The use of creative accounting in order to promote the company’s image when the company is in a difficult situation or wishes to trigger a reorganization procedure;
- The use of creative accounting in order to make the company look attractive or stable, in order to attract investors or funds from various sources;
- The use of creative accounting in critical periods when significant oscillations are recorded at the level of turnover and profit.

<table>
<thead>
<tr>
<th>Table 1</th>
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<table>
<thead>
<tr>
<th>The characterization of creativity from the perspective of marketing and accounting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Creativity in Accounting</strong></td>
</tr>
<tr>
<td>- creative accounting does not entail a breach in the legal provisions;</td>
</tr>
<tr>
<td>- creative accounting entails the exercise of creativity on the part of accountants, of translating legal, economic and financial innovations, in order to offer solutions to stakeholders, making use of legal and professional weaknesses and gaps;</td>
</tr>
<tr>
<td>- the techniques and practices offered by creative accounting result in embellishing reality up to the point where it is credible for the purpose of serving certain interests.</td>
</tr>
</tbody>
</table>

**Source:** created by the author.
Although creativity in accounting is connected to objectivity in the professional reasoning of the one who produces the accounting information, which is obtained by applying the best accounting policies and options, creative accounting is treated most of the times in a negative way, as a negative creation, aimed to lead to drafting financial statements able to answer to the managers’ wishes regarding the undertaking’s financial position and performance. In this way, financial statements are not what they are supposed to be under the norms, but what the management wishes them to be.

2.2. Creativity as a link between Marketing and Accounting

Apparently the two distinct disciplines as type of approach, marketing and accounting, beyond their belonging to the economic field and their interdependence within a company, also have common elements at concept level. Since creativity is synonymous with marketing, the evolution of the business environment and its globalization allowed the penetration of creativity in accounting, which is one of the most regulated and rigorous areas of the economic field.

Creative accounting also appeared as a result of the pressure exercised by the users of accounting information and of the will to justify and ground the activity and results of the company in a way which most appealed to them. Considering that they represent the main source of interest for the company, since to a large extent the development of the activity depends on them, the need appeared to impress and attract them with the created image. Here the marketing side steps in and emphasizes their common ground namely creativity. Within its limits creativity is a positive aspect, certainly more in the marketing field than in the accounting field, but brought to the extremes, it tends to create a false image to the user, making the product, in our case financial statements, present an image which is parallel to reality. One of the main factors of creative accounting is the attitude of the users of financial accounting statements. In order to emphasize how the creative mechanism determined by their excessive interests works in connection to certain elements of the financial statements to the detriment of those which are really important and which can support an indicated stability we have created the following table:

<table>
<thead>
<tr>
<th>Financial statements users</th>
<th>Interests</th>
<th>Vulnerable points</th>
<th>Creative techniques</th>
</tr>
</thead>
</table>
| Investors                  | - they are preoccupied by the inherent risk of transactions and the profitability of their investments;  
                              | - they are interested in information in order to decide whether they should buy, keep or sell capital instruments;  
                              | - they are interested in information which allows them to evaluate the capacity of the entity to pay dividends. | - turnover evolution;  
                              |                                                                            | - profit and its allotment;  
                              |                                                                            | - lock-ups;  
                              |                                                                            | - client situation;  
                              |                                                                            | - registering sales before delivery;  
                              |                                                                            | - over-assessment of mutual service rendering;  
                              |                                                                            | - the complete and immediate registration of products corresponding to several periods;  
<pre><code>                          |                                                                            | - assuming the turnover of its customers. |
</code></pre>
<table>
<thead>
<tr>
<th>Financial statements users</th>
<th>Interests</th>
<th>Vulnerable points</th>
<th>Creative techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees</td>
<td>- they are interested in information regarding the stability and profitability of their employers; - they are interested in information allowing them to evaluate the entity’s capacity to offer remunerations, pensions and other retirements benefits as well as professional opportunities.</td>
<td>- turnover evolution - allocation of resources</td>
<td>- income smoothing - the creation of provisions</td>
</tr>
<tr>
<td>Creditors</td>
<td>- they are interested in information allowing them to establish whether the granted loans and related interests will be reimbursed upon due date.</td>
<td>- payment capacity - rollover - turnover - lock-ups</td>
<td>- accounting accruals are not to be registered; - exclusion from the scope of consolidation of subsidiaries excessively indebted; - consolidation of subsidiaries by the equity; - expenditures as investments; - economic cancelling of a debt; - extending the term of payment; - changing depreciation policy.</td>
</tr>
<tr>
<td>Suppliers and other creditors</td>
<td>- they are interested in information allowing them to establish whether the amounts owed to them will be paid on due date; - they are interested in the entity for a shorter period than creditors, except where they depend on the continuity of the entity’s activity, when this entity is a major client.</td>
<td>- liquidity - debt situation - chargeability - sales evolution - expenses evolution</td>
<td>- over-assessment of incomes; - under-assessment of costs and expenditures; - over-assessment of assets; - under-assessment of own capitals and debts;</td>
</tr>
<tr>
<td>Clients</td>
<td>- they are interested in information about the continuity of an entity’s activity, especially when they have a long term collaboration with the respective entity or they depend on it.</td>
<td>- the situation of stocks - the continuity of the activity</td>
<td>- fictitious transactions (no benefit); - over-valuing suited circulating assets;</td>
</tr>
<tr>
<td>State institutions and other authorities</td>
<td>- they are interested in the allotment of resources and implicitly in the entities’ activity. They require information in order to regulate the entities’ activity, to establish the tax policy and as basis for computing the national income and other similar statistic indicators.</td>
<td>- calculation and payment of taxes, contributions and taxes, compliance with legal regulations</td>
<td>- improper capitalization of debts; - advertising and publicity costs; - changing the depreciation policy; - fictitious transactions;</td>
</tr>
<tr>
<td>Public</td>
<td>- entities may affect the public in various ways, they may have a</td>
<td>- turnover evolution - evolution of accounts</td>
<td>- registering sales before delivery;</td>
</tr>
</tbody>
</table>
Creative accounting as a form of marketing

<table>
<thead>
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<th>Creative techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>substantial contribution to the local economy in various ways especially through the number of employees and the collaboration with local suppliers;</td>
<td>receivable</td>
<td>- over-assessment of mutual service rendering;</td>
</tr>
<tr>
<td></td>
<td>- the financial statements may help the public by supplying information regarding the recent developments and the tendencies related to the prosperity of the entity and of its field of activity.</td>
<td></td>
<td>- the complete and immediate registration of products corresponding to several periods;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- assuming the turnover of its customers.</td>
</tr>
</tbody>
</table>

Source: created by the author.

In this way the mechanism triggered by stakeholders through what they are excessively after discovers weak points and the management acts consequently in order to cover the users’ need for safety by granting special dimensions to certain balance sheets.

Conclusions

Through the actions undertaken whose role is to present a favourable image to the categories of users mentioned previously, apart from obtaining financing sources, the company aims to consolidate its position on the market and to promote an image which reflects safety in continuing the activity.

The development of creative accounting, especially of its perverse side favoured by the gaps of accounting norms, has direct repercussions in the loss of the credibility of the accounting information, especially on the part of investors and financers.

Thus, from mere art accounting has turned into the “art of calculating benefits”. Why benefits and not risks? Because through the presented information the company aims to attract sources and not to destabilize its activity. For this reason, the management tends to present the accounting information in a variant which is advantageous to the company, even if it distorts reality and the loyal image of transactions.

In this way, creative accounting is directly related to marketing, and just like in marketing promotion policies, strategies and techniques are used, in accounting we use the same instruments in order to attract financial statements users.

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Abstract. Globalization has had an effect on the business landscape where there are firms, sectors or regions placed into the business process. Important for a firm is to be included into any value chain and increase its share based on high skills. This will provide a greater GDPC and will increase the health of the economy. Businesses of nowadays created by people in a changing of identity process due to the movements on the contemporary world require an interdisciplinary approach. Organizations are the mirror of the mindset of the individuals involved and the business results are collective interactions. The culture catalyzes the knowledge and the technology in an economical world and is the core explanation for the manner in which institutions are organized. This paper presents the results of an empiric cross-cultural psychological and economic survey which was carried out following the methodology of Geert Hofstede calculating the indices of Hofstede’s cultural dimensions trying to find dependencies between these indices and the economic indicators, GDPC in particular and the value chain that are directly connected. The Hofstede model offers a very fine analysis over the capability of any culture and economic environment to integrate powerful value chains that will support the development of the economy. This model also offers a perspective of the way any country has to follow in order to integrate better into the global economic environment.

Keywords: value chain, culture, Hofstede model, business, relationship economy.

CROSS-CULTURAL HOFSTEDE MODEL INDICATORS CHARACTERIZING THE BUSINESS ENVIRONMENT

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1. Introduction

The entire specialized literature focuses on the analysis of the value chain from the economical point of view. In the last years a lot of interest was directed to the role of culture in business. Nowadays it seems more and more important since business interface with people who are often suppliers, employees, customers, stakeholders. Success in a global market means understanding the culture of the partners who are doing business. The interaction between the two will be reflected into the value they produce and the value chain they are integrated in. This paper presents the results of an empiric cross-cultural psychological and economic survey which was carried out following the methodology of Geert Hofstede (Hofstede et al., 2010). It studies the procedure of calculating the indices of Hofstede’s cultural dimensions trying to find dependencies between these indices and the economic indicators, GDPC (Gross Domestic Product per capita) in particular and the value chain that are directly connected.

The paper has three general parts: the first and the second parts present the value chain and culture concepts and the third one explains the connection between both of them and GDPC.

2. The impact of culture on economic wealth

2.1. The economic wealth and the value chain

The globalization process has had a great impact on the labor division and trade in tasks, conducting to efficient production process (Morris, 2002). In this way cooperation is important with all the relationships generated during it. On the other side globalization has had an effect on the business landscape (Kaplinsky et al., 2000:19) where there are firms, sectors or regions placed in a wrong position into the business process, providing for instance just cheap labor. Important for a firm is to be included into any value chain and increase its share based on high skills. This will provide a greater GDPC and will increase the health of the economy. For this reason a better understanding of the business networks is required focusing on the value chain analysis.

As Kaplinsky et al. (2000) said the specialized literature mentions some different concepts as “value chain”, “filiere”, “global commodity chain” but practically all have the same meaning as all activities regarding the product or service creation from their concept passing through production which supposes a physical transformation of inputs and finally distribution to the last consumer. Between all these concepts, there is one apart from the definition described above which is “commodity chain” belonging to Gereffi (Kaplinsky et al., 2000) and this centers the idea of the importance of the power into the value chain. Most of the chains are characterized by one or more dominant components which determine the feature of the entire chain and they may be responsible for some upgrading of activities. These components are called “governments” and they will place cheap labor at the lowest possible places.

As Morris (2002) says an analysis of the connections chain named value chain analysis is imposed to explain concretely the dispersion of the activities at a global level and revenues. By separating the activities in details it’s possible to follow the results for each component of the system. Even if some of the components will be better placed then others in
the value chain it is important to find a place and be present and active. In time every part will try to increase its performance and secure its place into the chain. The cultural dimension of any component plays an important role in the existence of the chain because it reflects its capacity of interaction with other components.

In an international context, the value chain analysis emphasizes the relationships between companies, countries and regions.

Almost the entire literature about the value chain analysis is done strictly from the economical point of view and as Kaplinsky et al. (2000, p. 43) say it is focused on its profitability. In fact this is the main result of the capital distribution, labor and resources holders each of this being a part into the chain.

There are industries that require permanently cheap labor and the identification of these places is imposed by business. The way of searching, interacting and dealing is directly linked to culture.

There are some studies (Chiarvesio et al., 2008) concentrated on the industrial district model in connection with the local culture that guided to the conclusion of its contribution to the industrial development and economic results. The main question is what kind of specialization can be done and how to produce in order to keep a place into the chain and even to be able to control the chain.

The methodology of analyzing the value chain imposes the introspection for entry barriers, competition, strategy, identifying the power of the value chain in term of responsibility and so on, without becoming aware of everything that means human interaction. The way in which people act determines the success that could come or go. Businesses of nowadays created by people in a changing of identity process due to the movements on the contemporary world require an interdisciplinary approach combining economy with sociology, organizational psychology, anthropology (Gavreliuc, 2011, p. 40).

2.2. The culture and the business

Business means people connection defined as relationship, people interaction or association. Relationship between business partners is created in a proper context. The nowadays economy is a result of networks created by relationships based on gains supplied by partners who are involved in the business. Relationships create networks and finally networks create markets. This is the way of doing business.

The main idea is that people from different cultures interact in an international business context. As an affirmation says: "you can’t understand the meaning of the legal contract without understanding the culture…” (Cassell et al., 2011)

Even if it is difficult to find the most complete definition of culture, we will combine some definitions. As some studies show (Allen et al., 2008) culture refers to behavior observed, implied, acquired, shared and adopted by others through social learning and exposed by symbols, religion, arts, science. On the other way, Hofstede says that culture is a learned behavior through a mental programming that is “partly unique and partly shared” (Fah., 2008). The shared “software of the mind” (McSweeney, 2002) is in fact the collective dispersion within people having access to the same learning process but not keeping the same genetic makeup (Fah, 2008).
A cross cultural analysis is required to help management practices and techniques (Jones, 2007). The studies show (Allen S., 2008:96) that “well connected people and well networked companies are more successful” and firms involved in networks work better than the others working on their own.

In this way the value chain which combines companies and cultures in an unique way, will be more economic successful then companies operating on their own.

Some authors (Bekaoui cited by Fah, 2008) believe that culture is the core explanation for the manner in which institutions are organized, the people’s behavior within these institutions and that everything is in connection with the individual way of thinking. In the same time culture is directly connected to the wealth of the economy and the GDPC (Hofstede, 2011).

Culture is starting from the birth and is an interaction between family, school, religion, friend, media, job, books read and many others. Generally people react according to their mental program and everything around them is a reflection of the way they think (Hofstede G., 2011). To associate this idea we can say that organizations are the mirror of the mindset of the individuals involved and the business results are collective interactions. The culture catalyzes the knowledge and the technology in an economical world by driving the inevitable transformations of these both. As Allen S. says (2008, p. 141) “the technology provides the means, relationships provide the value” which means that new technological discoveries enable access to new knowledge and allow new behavior.

2.3. Hofstede model and a country availability to be integrated into a value chain

The intercultural approach takes into account not only the reflection of the differences between cultures, but also the similarities between them. It allows identify the groups of countries that share common values and cultural affinity.

The Hofstede model distinguishes cultures according to four dimensions: Power Distance, Uncertainty Avoidance, Individualism, Masculinity. In 1991 a new dimension was added, “Long Term Orientation” (OTL) that describes the importance associated to the future, as opposed to past and present. In the 2010 edition of Cultures and organizations, a sixth dimension has been added, called Indulgence versus Restraint.

The model provides scales from 0 to 100 for 76 countries for each dimension, and each country has a position on each scale or index, relative to other countries (Hofstede et al., 2010; http://www.mindtools.com/pages/article/newLDR_66.htm).

In this paper we will analyze only the first four dimensions that have relevance for our project (http://www.geerthofstede.nl/research--vsm.aspx; Gavreliuc, 2011; Hideki, 2002)

*Power Distance Index* (PDI), which reflects the perception of social inequality, power and authority. The formula used to determine (PDI) is:

\[ PDI = 135 - a + b - 25c \]

Where:
- \( a \) is the percentage of those who prefer consultative leadership style;
- \( b \) is the percentage of those who consider leadership style autocratic type of authority plus the percentage who considered paternalistic leadership style type;
- \( c \) is the average score of the degree to which citizens are afraid to express disagreement with authority.
Cross-cultural Hofstede model indicators characterizing the business environment

A high value for PDI reflects the inequalities in terms of people's access to power and wealth.

These societies are oriented to the caste system, with reduced mobility and progression of citizens. These societies will integrate with difficulty in a value chain and the contribution to the wealth of the country will be at minimum. A low power of PDI shows that those societies offer a better status for their citizens to equal opportunities and the value chain will be integrated easily into the economic landscape.

*Individualism Index* (IDV) reflects how well people work in groups or in individual way; it is computed by formula:

\[
IDV = 76*\text{aiw} - 43*\text{ait} + 30*\text{adc} - 27*\text{aie} - 29
\]

Where:
- \(\text{aiw}\) is the average importance given working conditions;
- \(\text{ait}\) is the average importance of the free time for employees;
- \(\text{adc}\) is the average measure in which the degree of cooperation of the group, in which employees operates, is important for these employees;
- \(\text{aie}\) is the average importance given to employees who work in the area.

IDV symbolizes self-identity, the relationship between the individuals, organizations and society in general. A high value of this index shows an easy creation of a value chain.

*Masculinity Index* (MAS) shows the preference of parameters of business that are seen as masculine like success, authority and performance opposed to those seen as female characteristics like personal relationships, quality of life (Jones, 2007). The formula for determining the MAS is:

\[
MAS = 60*\text{adc} - 66*\text{ais} + 36*\text{aie} - 39*\text{aip} + 76
\]

Where:
- \(\text{adc}\) has the same meaning as in the individualism index;
- \(\text{ais}\) is the average importance given to employees to obtain a high salary;
- \(\text{aie}\) is the average importance given to the employees job security;
- \(\text{aip}\) is the average importance given to employees of promotion.

This shows personality differences highlighting the social and gender roles with an impact on the strategy of the company rather than business incorporation.

*Uncertainty Avoidance Index* (UAI) relates to how to deal with ambiguous situations. In order to calculate it, we must evaluate some questions about nervousness or retentions population, why, as expected, employees will remain in the organization, and the degree to which the rules can be broken. The general formula for the determination of (UAI) is:

\[
UAI = 300 - 40*\text{a} - \text{b} - 30*\text{c}
\]

Where:
- \(\text{a}\) is the average degree of nervousness and retention of personnel;
- \(\text{b}\) is the estimated percentage of those who will remain in the organization more than 2 years plus the percentage of those who believe that they will remain more than 5 years;
- \(\text{c}\) is the average score on the degree of violation of the rules.

The UAI value symbolizes anxiety, aggression or apathy and the fear of taking risks.

We represent by a graph the values for economic and Hofstede indicators to show the dependencies between them, if exist, as the trend of their evolution curve. The data represented in the graph is computed by our own processing and formulas from primary data.

Figure 1. Hofstede cultural dimensions related to economic dimensions

The hypothesis is that there is a significant negative relationship between power distance (PDI) and the GDPC weight of the countries. This is based on research that found a negative relationship between power distance and economic wealth (Cox, 2011).

From this research we can conclude that cultures that are more egalitarian are associated with greater economic wealth and easy penetration of a value chain. In high power distance cultures the accountability of the cultural environment may be ignored for the interests of the power holders and this will make difficult business relationship based on the value chain. The graph reveals this clearly.

There will be a significant positive relationship between individualism (IDV) and countries weighted GDPC.

Research supports a positive relationship between individualistic cultures and economic wealth. Highly individualistic cultures value individual initiative and freedom of expression and, thus, may be more conducive to integrate easily in a value chain (Cox, 2011).

IDV small - community mentality: as we find in Asia (Bangladesh, Korea, China, Indonesia, Singapore, Taiwan) and Latin America (Colombia, Guatemala, Trinidad, Venezuela). It was found that GDPC of all these countries follows faithfully the IDV trend.

IDV high - individualist mentality: all countries having high DGPC such as Australia, Canada, France, Germany, UK, and USA.

We did not find a significant relationship between MAS or UAI and GDPC.
Cross-cultural Hofstede model indicators characterizing the business environment

The Hofstede model offers a very fine analysis over the capability of any culture and economic environment to integrate powerful value chains that will support the development of the economy. This model also offers a perspective of the way any country has to follow in order to integrate better into the global economic environment.

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Abstract. The value of a project can have multiple significances and it can be assessed in a relation with the project stakeholders’ perceptions, assumptions and expectations. When considering a project, the company is usually interested in economic value. This value can be assessed isolated - the outcomes of the project as a black box or it can be assessed in a context - project as a strategic piece of a portfolio, aligned with the company mission. In the current study we used the conjoint analysis with a choice-based approach to assess the value of IT projects as it is perceived by the project team members - 'engine' stakeholders when dealing with projects. Also this paper illustrates how the choice experiments method can be used to assess the project value perceived by team members or other project stakeholders, as the project manager, senior management or product owner.

Keywords: Project, project management, project value, conjoint analysis.

PROJECT VALUES FROM TEAM MEMBERS’ POINT OF VIEW

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1. Introduction

To achieve their objectives companies can organize their resources and efforts based on two main broad approaches: projects and operations. Operations are repetitive processes and activities for undefined period of time. On the other hand, projects can be seen as tasks with special characteristics, according to the PMI approach: “A project is a temporary endeavor undertaken to create a unique product, service, or result” (PMI, 2008, pp. 5).

From another point of view projects can be seen as temporary organizations: A project is a temporary and transient organization surrounded by inherent uncertainty (Turner, Muller, 2003).

Considering the authority, responsibility, resources distribution and information flow, there can be identified three different types of organizations: functional organizations, matrix organization and project-based organization (Greene, Stellman, 2009).

While in functional organizations the departmental managers have all the responsibility and authority, in project organizations the authority is delegated to project managers by the sponsors of the project. In matrix organizations there is a share of authority and responsibility between functional managers and project managers. The purpose of the matrix organizations is to take advantages from both designs, functional and project-based. We focus in our research on matrix organizations, being the mostly used organizational designs in the IT industry.

Regarding the company’s aimed goals and values, we assist nowadays to a swift from a unitary focus on returns to shareholders, to a multi-dimensional focus on values for multiple organizational and project stakeholders. Within the organization, people are more and more considered an asset that needs to be developed, cultivated and coordinated, not just commanded and controlled (Malone, 2004, pp. 132).

The article focuses on the perceived values of project team members, as an important factor that can influence the success of the project and the organizational performance.

The central research question of this article is: “What are the main values of team members regarding projects?” In order to answer the research question, we discuss below the issue of values when dealing with projects and present the results of an empirical study focused on values of project team members that work in the IT field.

2. Values in project environments

Projects do not operate in vacuum; they are implemented in a certain socio-economic context. When implemented within matrix organizations projects are influenced by the organizational culture (Stare, 2012, pp. 1), management policies and procedures (Aubry et all, 2012). Project managers look over these influences and manage them for the benefit of the project and of the organization (Mulcahy, 2005, pp. 32). A special attention needs to be given to project’s stakeholders, as they can influence the way the project is implemented through their actions.

Values are motives or frame of reference, which are fairly stable and influence actions (Feather, 1999). When we to talk about values in project management, the first question that arises is: “Values to whom?” A well articulated answer should take into consideration the perspectives of the different types of project’s stakeholders.

When it comes to project management frameworks a stakeholder is anyone who is affected by the cost, time, or scope of the project (Greene, Stellman, 2009, pp. 37). A stakeholder may impact project positively or negatively. The main project stakeholders are:

- The project manager;
Project values from team members’ point of view

- Project team;
- The performing organization;
- The customer;
- The sponsor;
- The project management office (Mulcahy, 2005, pp. 25).

Mulcahy specified that in order to efficiently manage the stakeholders, the project manager has to:
- identify all the stockholders of the project;
- determine their requirements and expectations;
- communicate with stakeholders;
- manage their influence over the project (Mulcahy, 2005, pp. 26).

Ideally the definition of value is aligned with the strategic objectives of both the customer and the contractor (Kerzner, Saladis, Learning, 2009, pp. 37). But, this is not always the case. Considering points of view from different stakeholders of a project, values might be differently perceived when dealing with projects (Bourne, 2011, pp. 2). Different stakeholders with different perceptions of values can influence the project outcomes in particular and the company performance in general.

3. Research methodology

The empirical part of our research is based on the hypothesis that learning, innovation, benefits, engagement and project duration influence the team member preference for working in certain IT projects.

The research aims to analyze the influence of the IT project characteristics on team members’ preference regarding projects.

We used in our research a Choice-Based Conjoint (trade-off) analysis to measure potential team members preferences for projects characteristics. The analysis was used in order to understand how changes in project characteristics affect the project value as it is perceived by team members.

Instead of directly asking the respondents what represents the value for a project or what characteristics are most important in a project, conjoint employs a more realistic approach. In Choice-Based Conjoint (CBC) a controlled set of different projects profiles are presented in pairs to respondents. A project is defined as a particular selection of project characteristics levels. The respondent is expected to select the project for which she or he has the highest utility value. Further the characteristics of projects are assessed based on the respondents’ preferences between these projects profiles.

Conjoint analysis (CA) has simulation component that enables the researcher to explore alternative projects scenarios. Computer simulations can be run to identify the point at which the projects can be more appreciated by project stakeholders. For example, the goal of a project manager might be to find the team members that value most the challenging innovative technology that is used in the project. Using CA simulations it can be assess the fit of a team member with a project. For this research were considered five project characteristics each with two levels, as presented in Table 1.
Factors used for fractional factorial design

<table>
<thead>
<tr>
<th>Factors</th>
<th>Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>learning</td>
<td>- learn new things</td>
</tr>
<tr>
<td></td>
<td>+ develop experience</td>
</tr>
<tr>
<td>innovation</td>
<td>- use classic technologies</td>
</tr>
<tr>
<td></td>
<td>+ use innovative and niche tech.</td>
</tr>
<tr>
<td>benefits</td>
<td>- greater with 15 percentage</td>
</tr>
<tr>
<td></td>
<td>+ greater with 30 percentage</td>
</tr>
<tr>
<td>engagement</td>
<td>- project based</td>
</tr>
<tr>
<td></td>
<td>+ permanent employment</td>
</tr>
<tr>
<td>duration</td>
<td>- around 1 year</td>
</tr>
<tr>
<td></td>
<td>+ around 3 years</td>
</tr>
</tbody>
</table>

In order to create the experimental design sets was followed the method similar to the one used by Aizaky and Nishimura (Aizaki, Nishimura, 2008, pp. 87). From the five project characteristics presented above were constructed 32 different project profiles in a full factorial design. Out of this full design it was extracted a fractional factorial design (orthogonal array) containing eight project profiles presented in Table 2.

Profiles used in pairs to assess the respondent preference

<table>
<thead>
<tr>
<th>Profiles</th>
<th>learning</th>
<th>innovation</th>
<th>benefits</th>
<th>engagement</th>
<th>duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
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<tr>
<td>5</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Using these profiles, projects pairs were created and presented to respondents using a web based questionnaire. For each pair respondents were asked select the preferred project profile.

Valid data was analyzed using a logistic regression model (GLM1). For the analysis, the following were considered:

- Predictors (Independent variables - IV) are the categorical factors presented in Table 1. Moreover it was constructed a dummy variable called "position" which identifies the position
Project values from team members’ point of view

(left or right) of the project profile presented in each pair. This was constructed in order to assess if there the profile presentation has an influence on respondent project preference.

- Outcome (Dependent variable - DV) is the respondent preference for a project from the pair presented (RES), a binomial variable with levels 1 - "prefer" and 0 - "not prefer".

The questionnaire was constructed and applied using open source web based solution from Limesurvey.

The target population is team members of IT projects, working in Cluj-Napoca, Romania. Considering the sampling method, we used a non-probabilistic method which has the advantages of being less expensive and less time consuming. The questionnaire was distributed to a number of 150 persons and the response rate was 40%. Out of 60 received responses 43 are valid, respondents meeting the desired characteristics.

A percentage of 37% respondents are females and 63% are males. Each individual stated the preference for each of the eight project profiles presented in pair with another alternative of project profile selected random out of the seven profiles remained in the orthogonal array. Data set analyzed contained 688 records from the controlled experimental design. Data was analyzed by using R statistical software environment.

4. Data analysis and results interpretation

The logistic regression analysis shows the significant (p<0.05) influencers for preference of projects are: innovation (B=1.6, SE=0.17), benefits (B=0.91, SE=0.17), engagement (B=0.31, SE=0.17). Project duration and learning factors are not significantly relevant for preferences of respondents (Table 3).

| Coefficients | Estimate | Std. Error | z value | Pr(>|z|) | OR  |
|--------------|----------|------------|---------|----------|-----|
| (Intercept)  | -1.39    | 0.24       | -5.87   | 4.45e-09*** | 0.25 |
| learning     | -0.13    | 0.17       | -0.75   | 0.456    | 0.88 |
| innovation   | 1.60     | 0.17       | 9.37    | 2e-16*** | 4.94 |
| benefits     | 0.91     | 0.17       | 5.35    | 8.60e-08*** | 2.49 |
| engagement   | 0.31     | 0.17       | 1.82    | 0.0686   | 1.36 |
| duration     | -0.10    | 0.17       | -0.59   | 0.557    | 0.90 |
| position     | 0.08     | 0.17       | 0.50    | 0.6151   | 1.09 |

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1; AIC: 842.02; Pseudo R^2 for logistic regression: Hosmer and Lemeshow R^2=0.132; Cox and Snell R^2=0.167; Nagelkerke R^2=0.222

The position factor beta coefficient is not statistically significant, which means that the answer offered by respondent was not influenced by the position - left side or right side of the project profile in the pair presented on the screen during the questionnaire application.

Akaike’s information criterion (AIC) for full model is 842.02. A better logistic model was obtained further by stepwise backward elimination. The reduced model has a lower of 837.05 (Table 4). Innovation, benefits, and engagement remain in this order the main influencer for respondents’ project preferences.

321
### Table 4

Logistic regression results on reduced model

| Coefficients | Estimate | Std. Error | z value | Pr(>|z|) | OR  | 95% CI for Odds Ratio |
|--------------|----------|------------|---------|----------|-----|-----------------------|
| (Intercept)  | -1.46    | 0.18       | -8.09   | 5.98e-16*** | 0.23 | 0.16                   |
| innovation   | 1.59     | 0.17       | 9.37    | 2e-16***  | 4.92 | 3.54                   |
| benefits     | 0.91     | 0.17       | 5.34    | 9.12e-08*** | 2.48 | 1.78                   |
| engagement   | 0.31     | 0.17       | 1.84    | 0.0664    | 1.36 | 0.98                   |

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1; AIC: 837.05; Pseudo R^2 for logistic regression: Hosmer and Lemeshow R^2 =0.13; Cox and Snell R^2=0.165; Nagelkerke R^2=0.22

The odds ratio greater than 1 then it indicates that as the predictor increases, the odds of the project preference occurring increase. Odds ratios of the three significant factors are presented in Figure 1.

![Figure 1. Odds ratios from logistic regression](image)

The effects of the projects characteristics can be depicted graphically from Figures 2, 3 and 4. The most relevant effect is innovation; the second is benefits followed by engagement.
Project values from team members’ point of view

Figure 2. Innovation and engagement effects

To have the second position for factor 'benefits' might appear counter intuitive, but a closer look at the meaning of this factor may clarify the question marks. The factor “benefits” has the base level 0 - an increasing of financial benefits with 15 percentages than actual project. The upper level is 1 - increasing of financial benefits with 30 percentages than actual project. Actually benefits factor is defined by the difference from a project with 15 percentages benefits increasing to a 30 percentages benefits increasing.

Figure 3. Benefits and innovation effects
There were not identified any significant interaction effect between the factors: innovation, benefits, engagement.

Further we were interested to understand if males and females as potential project team members value differently the IT project characteristics (Table 5). We illustrated bellow the obtained results. These provide a glimpse into respondent preferences, but due to the sample size we have a low external validity; we can not infer these results to a greater population.

### Table 5

| Coefficients          | Estimate | Std. Error | z value | Pr(>|z|) | OR  | 95% CI for Odds Ratio |
|-----------------------|----------|------------|---------|----------|-----|-----------------------|
| (Intercept)           | -1.44    | 0.29       | -4.91   | 1.14e-06 ***| 0.24 | 0.13 0.41             |
| GenderMales           | -0.03    | 0.37       | -0.09   | 0.9259   | 0.97 | 0.47 2.03             |
| GenderFemales:innovation | 1.34  | 0.27       | 4.87    | 1.38e-06 ***| 3.81 | 2.24 6.59            |
| GenderMales:innovation | 1.75  | 0.22       | 8.00    | 5.37e-15 ***| 5.77 | 3.78 8.94            |
| GenderFemales:benefits | 0.89  | 0.27       | 3.25    | 0.0012 ** | 2.44 | 1.43 4.21            |
| GenderMales:benefits | 0.92    | 0.22       | 4.22    | 2.77e-05 ***| 2.52 | 1.65 3.89            |
| GenderFemales:engagement | 0.47   | 0.27       | 1.73    | 0.0838   | 1.60 | 0.94 2.74            |
| GenderMales:engagement | 0.21  | 0.22       | 0.96    | 0.3384   | 1.23 | 0.81 1.88            |

Males and females appreciate differently the innovation and engagement in regard with a project. The figure 5 with odds ratios shows that males are more sensitive than males to innovation aspects of the project (Males-innovation B=1.75, SE=0.22; engagement B=0.21, SE=0.22) while females are more interested than males in the type of engagement contract they sign (Females-innovation B=1.34, SE=0.27; engagement B=0.47, SE=0.27).
5. Conclusions

In future organizational designs, the value of the business will be generated not only on tactical-immediate financial figures but on the capability to attract, capture and value people from the organization, giving them the right incentives.

The quantitative analysis measures the perceived utility regarding projects. Moreover, there are identified the project factors which bring value to the team members depending on their preferences. If analyzed and understood, the project team members’ perception of value can be used by the project manager when applying motivational techniques.

From our empirical study, we can conclude that the project characteristics influence the team members’ preferences. In certain conditions financial benefits is not the main driver when preferring a certain IT project. The innovative nature of technologies used in project or the type of the contract signed, influence the value assigned by potential team members to a project. Even if IT industry is knowledge driven field, learning does not have a significant importance when preferring a project. Even if project based work is less secure and might increase uncertainty, the project duration was not significant for our sample decisions. Different groups (e.g. males and females in our case) may have different preferences in regard with project characteristics.

The research has certain limitations. Considering that the sample contains answers from 16 females and 27 males it arises a question regarding the sample size: Do we have enough respondents to draw conclusions? The answer is not straight forward. Theoretically a conjoint analysis can be estimated with one respondent if the respondent provided enough choice answers to task. Even though cannot be said that sample size is irrelevant (Hair, 2010, pp. 463). By further steps each gender group is estimated separately in a disaggregated approach, but we still consider the degree to which the groups are representative for of the population of interest.
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Abstract. The problem of improving the human capital evaluation theory via development the theoretical evaluation model of human capital rating was solved. The models, methods and algorithms of evaluation the questions quality, identifying the strategy of conducting the testing session, data analysis methods and algorithms, which have a purpose to increase the effectiveness of management of intellectual assets, was proposed. The valuation criteria system was established. On the bases of this system and description of levels of personal professional competence and abilities the example of possible introduction of the results of evaluation of human capital rating was presented.

Keywords: human capital, test, data analysis, evaluation criteria.

EVALUATION MODEL OF HUMAN CAPITAL RATING

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1. Introduction

In economics of the 21st century assets, based on knowledge, become the most important factor that defines the development of modern companies. Dynamic environment, effective channels of new technologies dissemination, growing differentiation of customers’ preferences stipulate the fact that nowadays successful companies are those, whose innovations are based on new technologies as well as on knowledge, experience and skills of their employees. The value of companies is more and more being generated by the assets, which have a non-material form (Edvinsson, Malone, 1997; Guthrie, 2001; Lev, Feng, 2001; Stewart, 1997; Sveiby, 1998). The brightest display of modern innovative economics is the transformation of knowledge into the intellectual capital.

One of the first researchers of intellectual capital T. Stewart (1997) defines it as “the sum of knowledge of all the employees of a company, which provides its competitiveness; as the intellectual material that includes knowledge, experience, information, intellectual property and that takes part in the process of values creation”. There is no unity in the definition of intellectual capital yet (both narrow and broad interpretations are used), but in understanding of the structure of intellectual capital (IC) all the researchers firmly single out three components: human capital (HC) – competencies (knowledge, practical skills) and abilities (creative and cognitive) of company’s staff; organization (structural) capital – process (procedures, work process, technical processes etc.) and innovative (patents, license agreements etc.); consumer (client) capital – capital, which is made of firm connections and relations with clients and consumers.

It should be noted that the HC in the structure of the company's IC is basic and determines the successful development of other components. However, assessment of significant professional characteristics of personnel is one of the most complex and urgent problem due to the specifics of this type of capital. The most significant specific features are the subjectivity and conditionality of:

– the evaluation criteria – due to the dependency of results of evaluation on the informational needs specified by stakeholders;
– the tasks quality – due to the dependency of this indicator on expert’s level of competence;
– the evaluation tools (models, algorithms, methodologies) – due to the necessity to evaluate both quantitative and qualitative (psychological, mental and physical etc.) characteristics of personnel;
– the evaluation results – due to the high degree of their dependence on time, place and conditions of evaluation;
– the evaluation mechanisms – due to the necessity of quantitative and verbal interpretation of the results.

In this context, the priority direction of increasing the effectiveness of intellectual assets management is the improving of HC evaluation theory. The authors solved this problem by implementing a systematic approach to the development of the theoretical evaluation model of human capital rating, which provides the obtainment and adequate interpretation of the set of quantitative and qualitative indicators of the professional staff with taking into account the specificity of their individual decision-making activity.
2. Evaluation Methodology System

It is well-known, that one of the innovative tools of organization of personnel rating evaluation is Computer-Based Testing System (CBTS), used as an approach for assigning the status of staff according to the individual level.

A systematic approach to the development of theoretical evaluation model of HC rating (Figure 1) presupposes the elaboration of a set of criteria, mechanisms and instruments of creating an integrated system of vocationally significant individual indicators of company staff's professional fitness, which includes: Evaluation Methodology System (EMS); Evaluation Criteria System (ECS).

The EMS, developed by the authors, is based on the results of previous research and involves the following steps:

Stage 1. Identifying the Stakeholders and Their Informational Needs.
At this stage the main purpose of evaluation, as well as the domain and levels of human resource roles from the stakeholder point of view, is specified.

Stage 2. Evaluation of the Questions Quality.
The necessity of development of this stage is associated with the information inaccuracies that cause the decrease in effectiveness of evaluation of individual characteristics of HC. In this context the following authors' original solutions are proposed:
- The methodology of reducing the inaccuracy of scaling of questions (test tasks), which contains the following concepts: it is experimentally proved that time from the introduction of test tasks (TT) on the display till the solution implementation is an objective
tool for formalization of complexity; as a reference time for DM the average time spent by a group of experts (stakeholders) is proposed.

1. The methodology of reducing the inaccuracy of TT quality, which contains the following elements:
   • an algorithm for express-analysis of the TT quality. It allows to solve the problems of complexity of completing the correlation matrix of test results by formalizing the methodology of its phased guarantee receipt using two-parent matrix (Rizun, 2012);
   • a heuristic algorithm for advanced analysis of the TT quality using the metric of actual pace of DM. The proposed algorithm can not only establish the low quality of TT, but also specify the hypothetical reasons and ways of their increasing (Rizun, 2010).

Stage 3. Identifying the Strategy of Conducting the Testing Session.

The necessity of development of this stage is determined by presence of inaccuracy, which is associated with the complexity of formalization of test session purpose, and the influence of the factor of tiredness of personnel on evaluation effectiveness. In this context, the following concept and algorithm were developed:

1. The concept of formalization of informational needs of stakeholders in the form of TT of different target levels (TL). The set of these levels can be formed from a list of cognitive competences ranked by the degree ascending: {Remember, Understand, Apply, Analyze, Evaluate, Create}. The TT of a higher TL includes a set of cognitive competences, checked using the lower TL.

2. The algorithm of sequential delivery of HC in order to reduce the TL of cognitive competences (Taranenko, Rizun, 2011), which consists of the following concepts: the successful solution of most part of TT on the highest TL can be interpreted as the achievement of the specified professional rating; in case of unsatisfactory results of test passing of the current TL individual can confirm his HC rating by passing the corresponding TT set of lower TL.

Stage 4. Data Analysis Methods and Algorithms.

As main measured and analyzed variables authors validated the following quantitative and qualitative staff indicators with taking into account specificity of their individual DM activity: Professional Confidence (PC); Decision Making Pace (DMP); Informativeness Level (IL); Cognitive Competences Level (CCL); Stability of Operations Activity (SOA); Resistance to Stress (RS); Phases of the Activity (PA); Intensity of Activity (IA).

3. Data Analysis Methods and Algorithms

3.1. Professional Confidence and Decision Making Pace

As a tool for identifying the personnel's specifications correlation coefficient $K(t^*, t^t)$ between the series of the reference $t^*$ and the actual $t^t$ time of DM are proposed (Kholod, Taranenko, Rizun, 2012).

The interpretation of normalized correlation coefficient ranges as levels of PC may be the following:

• individual, which is confident in his professional knowledge, makes decisions at steady pace ($K(t^*, t^t) \geq 0.5$). This fact does not prejudice the specific features of individuals with specific DMP – so called “individuals-slowpoke” (high level of DMP) or personnel with the "lightning response" (low level of DMP) – the high level of the PC ($B1$);
• in the behavior of individual having insufficient level of PC, will occur random "fluctuations" in time of DM ($0.3 \leq K(t^*, t^{*f}) < 0.5$) – the middle level of the PC (B2);

• the individual, whose professional knowledge level does not correspond to the needed level of professional qualification, may try to guess the correct decision ($K(t^*, t^{*f}) < 0.3$) – the low level of the PC (B3).

3.2. Informativeness Level and Cognitive Competences Level

The IL of problem-oriented knowledge systems of personnel is considered on the basis of the concept of actual number of scores according to the accepted method of TT scaling. An algorithm for adaptive identification of the IL on the basis of factual quantity of points (P) for correct solving of TT and reference and the actual time of DM of individual was developed. In accordance with this algorithm the formation of a IL is carried out taking into account minimization of the impact of guessing on the objectivity of evaluation (Table 1).

| Table 1
Algorithm for Adaptive Identification of the Informativeness Level of Individual |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of PC</strong></td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td><strong>B1</strong></td>
</tr>
<tr>
<td><strong>B2</strong></td>
</tr>
<tr>
<td><strong>B3</strong></td>
</tr>
</tbody>
</table>

As an indicator for determining the CCL the number of passed TL (according to the algorithm of sequential delivery of TT) is proposed.

3.3. Stability of Operations Activity and Resistance to Stress

The idea of SOA is a consequence of entering into consideration of the concept of interpretation of the CBTS and individuals as a dynamic system. In this regard, the interpretation of equilibrium (EM) and periodic (PM) modes of the SOA was specified:

- the EM with reference to the operations activity in the testing process corresponds to a sufficient level of professional stability, which is characterized by sustained response to any changes in the level of TT difficulty;

- the PM is characterized by unstable reaction of an individual to the changes in the level of TT complexity.
An algorithm of identifying modes of the SOA is based on the analysis of approximation of the dynamic characteristics results of using a statistical series of reference and actual time of DM. According to the results of experimental research timing property charts for groups of staff with a stable EM (A1 – the high level of the PC) and PM (A2 – the middle and low levels of the PC) of individual operations activity, were obtained (Figure 2).

Figure 2. Form of the transfer function for a group of individuals with:
(a) a stable EM of SOA; (b) a PM of SOA

As a method of specifying the RS during the test session using an algorithm of reduction of reference time on the DM was proposed. That allows realizing the simulation of real conditions of different stress levels in DM.

3.4. Phases of Activity and Intensity of Activity

The concept of the PA is defined as a set of functional phases of a DM activity during the working time (test session): the primary reaction (1) – short-term of reduction of the actual level of confidence and precision of DM activity; overcompensation (2) and compensation (3) – gradual improvement and stabilization of indicators of confidence and precision of DM activity to the real individual level; subcompensation (4) and decompensation (5) – reduction of actual level of confidence and accuracy of DM activity.

The algorithm of identifying FA is based on the statement of existence of the individual "pictures" (structure of time distribution during the test session) of phases of an individual (Table 2).

<table>
<thead>
<tr>
<th>Phase</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time (%)</td>
<td>5%</td>
<td>30%</td>
<td>57%</td>
<td>8%</td>
<td>20%</td>
<td>60%</td>
<td>20%</td>
<td>10%</td>
<td>70%</td>
<td>20%</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

The intensity of the personnel's activity of the (IA) in each of these phases is described by the ratios of correct decisions (RC) and standard deviation $\sigma$ (SD) between the reference and actual time of DM within each phase:

$$IA_j = RC_j \cdot \sigma_i$$  (1)
4. Evaluation Criteria System

The main purpose of development of ECS is the formation of complex indicators to measure the HC and of their interpretation with taking into account the specificity of individual DM activity.

Based on: the informational needs of stakeholders and levels of human resource roles; the vocationally significant characteristics of personnel and the data analysis methods and algorithms, the following ECS was developed (fig. 1): Competence (C); Professional Experience (PE); Operation Skills (OS); Abilities (Capabilities) (A).

Determination of the individual professional indicators of the ECS can be formalized with the help of the following formulas:

\[ C = \sum_{i=1}^{N} \chi^1 \cdot IL \cdot CCL , \] (2)

\[ PE = \sum_{i=1}^{N} \chi^2 \cdot MDP \cdot CPE , \] (3)

\[ OS = \sum_{i=1}^{N} \chi^2 \cdot SOA \cdot RS , \] (4)

\[ A = \sum_{i=1}^{N} \chi^3 \cdot PA \cdot PC , \] (5)

where \( \chi^j \) is the weight of each component of the complex indicators defined by experts-stakeholders.

Then comprehensive indicators of HC rating of each individual of staff are calculated:

\[ HRC = (\chi_c \times C + \chi_E \times PE) + (\chi_{OS} \times OS + \chi_A \times A) , \] (6)

With the purpose of interpretation of obtained indicators of the ECS the variant of compilation of the description of levels of personal professional competence and abilities is proposed (Table 3, 4):

**Description of Levels of Personal Professional Competence**

<table>
<thead>
<tr>
<th>Level 1. Performer ('what?')</th>
<th>Performance of simple actions or operations, following the instructions provided. Adapting to changes with the help of the person in charge of supervising activities.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 2. Site manager ('how?')</td>
<td>Performance of actions and operations in several fields of activities through the application of various solutions, means, and instruments. Autonomous solving of activity tasks and controlling activity performance quality. Autonomously adapting to the frequent change of context.</td>
</tr>
<tr>
<td>Level 3. Working-level manager ('why?')</td>
<td>Systematic application and management of complex methods and means, required for the performance of activities. Autonomous planning and supervising of own and lower qualification employees’ activities, taking into account unforeseeable environment changes.</td>
</tr>
<tr>
<td>Level 4. Strategy leader ('wherefore?')</td>
<td>Creation and evaluation of new complex ideas, methods, processes, and instruments in handling strategically-important development. Initiation and design of innovation creation means, instruments and processes.</td>
</tr>
</tbody>
</table>
Table 4

Description of Levels of Personal Abilities

<table>
<thead>
<tr>
<th>Level 1. Willingness to learn</th>
<th>The ability to deal with changes, to learn from the experience, to take calculated risks.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 2. Time-management</td>
<td>The ability to plan and exercise control over the amount of time spent on specific activities.</td>
</tr>
<tr>
<td>Level 3. Planning</td>
<td>The ability to organize resources, time, and events that will enable an employee to meet own goals.</td>
</tr>
<tr>
<td>Level 4. Leadership</td>
<td>Encouraging others to move towards a specific goal. The ability to inspire and motivate.</td>
</tr>
<tr>
<td>Level 5. Decision-making</td>
<td>The ability to consider all solutions to a potential problem, identifying the pros and cons of each, making a balanced judgment, and choosing the best option.</td>
</tr>
<tr>
<td>Level 6. Analytical Ability</td>
<td>The ability to assess a situation or issue and identify key elements that need to be addressed to move forward.</td>
</tr>
</tbody>
</table>

The example of possible superposition, dependences, form and context of presenting the results of evaluation of HC rating using the developed model and description is proposed in the Table 5.

Table 5

Example of Presenting the Results of Evaluation of Human Capital Rating

<table>
<thead>
<tr>
<th>Name</th>
<th>1. Individual Professional Strength and Challenges</th>
<th>2. Abilities (Capabilities)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Competence</td>
<td></td>
</tr>
<tr>
<td></td>
<td><img src="image.png" alt="Diagram" /></td>
<td></td>
</tr>
<tr>
<td>Level</td>
<td>B</td>
<td>Level</td>
</tr>
<tr>
<td>3. Professional Experience</td>
<td><img src="image.png" alt="Diagram" /></td>
<td>4. Operation Skills</td>
</tr>
</tbody>
</table>
5. Conclusions

The authors solved the problem of improving the HC evaluation theory via development of the theoretical evaluation model of HC rating. The models, methods and algorithms of evaluation of questions quality, identifying the strategy of conducting the testing session, data analysis methods and algorithms, which have a purpose to increase the effectiveness of management of intellectual assets, was proposed. The evaluation criteria system, which
contains the following elements – competence, professional experience, operation skills and abilities, was established. On the basis of this system and description of levels of personal professional competence and abilities the example of possible superposition, dependences, form and context of introduction the results of evaluation of HC rating was presented.

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**Maria RIZUN** is a postgraduate student of the Department of Applied Economics at the State Higher Educational Institution “National Mining University” (Dnipropetrovsk’sk) since 2013. In 2011 obtained Bachelor degree in International Management, in 2012 – Master’s degree in Innovation Management. Heads the organizing committee of the LEADER Project – the joint project of National Mining University and Richard Ivey Business School, Canada. Maria carries out research of intellectual capital and its influence on the means of production at Ukrainian mining enterprises.
Abstract. Experimental research done by behavioural economists points out human behavioural “heuristics and biases”, that often result in less than optimal individual economic decisions. These experiments cover a wide range of economic subjects, but one that we found most important to our society is the topic of savings with respect to the retirement behaviour. Evidence suggests that savings for retirement are sub-optima, and that, as a result, people experience a drop in their income upon retirement. This reality, when combined with the demographic crisis, creates opportunities for better policies that might influence saving behaviour in the direction predicted by neo-classical, which should be the optimal level at which consumption before and after retirement is smooth. The main objective of this paper is to briefly explain current theories of behavioural economists, theories that might better explain the saving reality. We consider also that by reviewing one of the economic models developed by behavioural economists we might better predict human saving behaviour.

Keywords: behavioural economics, saving behaviour, demographic crisis, savings predictive models.

AN INTRODUCTION TO BEHAVIOURAL ECONOMICS: UNDER SAVING FOR RETIREMENT AND NEW ECONOMIC MODELS FOR PREDICTING SAVINGS

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1. Introduction

Neoclassical economic theory assumes that people are rational individuals acting to maximize subjective total expected utility. While this assumption could be useful in predicting economic variables most of the times, it fails to explain the wide fluctuations of these variables (Akerlof G., Shiller R., 2009). Behavioural economists try to increase the predictive power of economic theory and, inspired mostly by psychologists and sociologists, make more realistic assumptions of the human behaviour postulating that individuals are not always rational actors. They are in fact forced to face scarce resources (including also the cognitive & intangible resources) and they are also subject to decision biases (Thaler, Sustein, 2008). Behavioural economists use cross-disciplinary research techniques based mostly on psychology & sociology perspective, and get inside topics that range from managerial decision making, to credit markets and financial crises.

One particular sub-topic under the larger behavioural economics umbrella is that of retirement savings. The mainstream /standard economic theory predicts that people optimally balance their savings and consumption, thus achieving an adequate retirement saving rate that evens out consumption at retirement. However, the reality shows that people under-save for retirement (EBRI, 2010, p. 7) and behavioural economists describe behavioural biases underlining retirement saving behaviour (Benartzi, Thaler, 2007). Behavioural economists (Shefrin, Thaler, 2004) propose an improvement to the mainstream/standard economic theory, by modifying the behavioural features of the individual rationality assumption. These behavioural features better describe actual individual saving and consumption patterns and increase the predictive power of the model, yielding predictions that are closer to the saving reality of our society.

2. Demographic crisis and retirement savings reality

We are currently facing a demographic crisis as the older population is increasing relatively to the working age groups and this trend is predicted to reach a peak around 2055 (UN, 2012). According to UN projections, in Romania the old age dependency rates will be around 50% as compared to a current level of around 20%, while EU projections of the same indicator show that old age dependency rates in Romania will be at over 100% in 2060 (EU, 2012). In the EU27 the old age dependency rates is projected to be at 70% as compared to the current level of around 30% (EU, 2012). The aging of the population creates a serious challenge for governments that will have to cope with old age pension payments.

The current Pay-As-You-Go pension system applied in most countries will no longer be fitted to cater to the needs of the pensioners without placing an exaggerated burden on the active population.

In response to the aging of the population challenge, in the last decade many governments in EU have taken steps to address the demographic crisis with reforms of their pension systems. Many governments raised or are planning to gradually increase the pension age, or have taken other parametric measures such as reducing early retirement opportunities, increasing required contribution periods, etc. On top of these parametric measures, many countries have recently expanded the role of existing private schemes or introduced new elements of pre-funded, privately managed pensions into their pension systems in order to diversify provision, boost choice, improve transparency and foster greater individual
An introduction to behavioural economics

responsibility (European Commission, 2010). The Romanian government in particular has recently reformed the public pension system by adding a mandatory private component to the traditionally public provision. The addition of the mandatory private scheme has placed more responsibility on individuals for their pensions, as they now have to choose from various investment funds and decide how to invest their money for a part of their pension contributions. In light of the recent financial crises, this shift has raised the individual uncertainty about retirement income and whether their future pension will be sufficient to provide a financially worry-free old age.

The reforms undertaken by countries within EU were necessary and well justified by the demographic crisis. However, it is not clear to what extent they will contribute to the future adequacy of pensions. Current projections by international organization show that, in spite of the reforms, the future pension incomes will not provide an adequate replacement income to pre-retirement revenues. Even current pension income in many countries is not sufficient for maintaining the same life-style after retirement. Current data show that the income replacement rate (ratio of average first pension to average salary before retirement) is around 42% in Romania and has an average value of 49% in EU27 (EU, 2012). A recent survey (AON Consulting) conducted across 10 leading European countries revealed a mismatch between expected income at retirement and expected consumption needs. The “average European” thinks that 74% of the current income would be sufficient to live comfortable, yet upon retirement they will have only 57% of the current income.

The projections for future income replacement rates show that the situation will be even more critical over the next 50 years. While there is some controversy among economists as to what extend the optimal level of this indicator should be, the consensus is that it should be at least 60%. The projections for the income replacement rates are a direct reflection of the demographic crisis problem.

It is estimated that in Romania in 2060, the income replacement rate is projected to reach 29% versus an average percentage of 39% for EU27 (EU, 2012) which stand below optimal levels, indicating that future public pensions will not be sufficient for future pensioners to maintain the same standard of life in their post-retirement years.

3. Neoclassical versus behavioural model for predicting saving behaviour

The neoclassical Life Cycle model, developed by Modigliani and Bumberg in the ’50s, is the mainstream economic thinking when it comes to saving and consumption. The model addresses individuals saving and consumption patterns, assuming that consumers maximize lifetime expected utility. The essence of Life Cycle hypothesis is the idea of consumption smoothing, meaning that individuals balance optimally their life-time consumption patterns, managing to even out their pre-retirement and post-retirement consumption. In other words, in every period, consumption should equal the annuity value of lifetime wealth. Individuals manage to achieve this by going through a period of wealth accumulating until retirement, and by de-cumulating their wealth after retirement.

The model has been tested with empirical data but with mixed results (Courant, Gramlich, Laitner 1986). Some evidence suggests that individuals do not smooth consumption at retirement, but in fact there is a drop in consumption at retirement especially for lower income groups, implying that they do not achieve the optimal saving rate. In addition, it was found that old people do not dissave as quickly as the model predicts mostly because: old
people are cautious about unpredictable expenses resulting in precautionary savings; old people leave bequests to their children.

While the neoclassical model might be a starting model for explaining individual consumption and saving behavior, there is room for improving its predictions by incorporating to its assumptions also some behavioral biases that newer experiments have highlighted and that could better explain the reality of retirement saving.

Economists H.M. Shefrin and R.H. Thaler (2004) had proposed an improved and modify approach to the neoclassical Life Cycle model by incorporating behavioral features, such as: self-control, mental accounting, and framing. The model proposed by Shefrin and Thaler is not a critique of the Life Cycle model, but rather an improvement by relaxing some of the assumptions to include behavioral features documented by some of the behavioral economists (Kahneman, Tversky 1984).

Self control is an element that is not included in standard economic theory. It is described by Shefrin and Thaler as “a trade-off between immediate gratification and long run benefits”. There is an individual cost associated with self-control and this type of internal conflict is not present in the choice people use to involve when they decide between a white shirt and a black shirt, therefore the neoclassical assumptions would need to be modified to take into account this behavioural feature.

Mental accounting is the idea that households do not treat wealth as fungible as standard theory assumes, but they rather act as if they used a system of mental accounts. For instance, they divide wealth into spendable income account, current assets account (savings, housing, etc), and future income account. According to the behavioural Life Cycle model, the marginal propensity to consume is assumed to be account specific. In the Life Cycle model, labelling of wealth is irrelevant because wealth is regarded as fully fungible in a perfect capital market.

Framing, or the way in which wealth is presented to individuals, influences the way people use to spent income. In order to illustrate this concept, we mention a survey conducted by the 2 authors (Shefrin, Thaler 2004) that revealed the fact that people would consume different amounts out of a sum of money (windfall), depending on which way it is framed to them: as a bonus received monthly for one year, as a lump sum bonus received today, or as a bequest received in 5 years. In all three scenarios the expected value of the windfall is the same. However the survey revealed that individuals had different consumption preferences directly related to the framing of the question.

The main additions or improvement of the behavioral modified model to the neoclassical Life Cycle model hypothesis are the following: self control is an effort versus individuals can choose without effort between consumption today and consumption at a later period; individuals place wealth into mental accounts and have a different marginal propensity to consume out of each mental accounts versus individual treat wealth as fungible and have a constant marginal propensity to consume; individuals are subject to framing versus individuals are indifferent to the way wealth is presented to them and can make perfect expected value calculations.

4. Behavioural modified model for predicting savings

Shefrin and Thaler had proceeded to model the behavioural features highlighted above. When modeling choice under self-control, temptation is to be considered.
An introduction to behavioural economics

The authors postulate that temptation can be overcome by will-power, which is the personal cost when individuals exercise self-control. They also explain that people have a “dual preference structure, they are assumed to behave as if they have two sets of mutually inconsistent preferences: one concerned with the long-run and the other with the short-run”. The authors call the former set of preferences “the planner”, and later set of preferences “the doer”. “The doer” is concerned with the present and maximizes current period consumption while “the planner” behaves more like the neo-classics assume and maximizes a function of lifetime doer utilities. Therefore, the utility function of “the planner” is a neoclassical one \( V \), with arguments being the sub-utility levels \( Z \).

In other words, “the planner” is the rational part of individuals, while “the doer” is the irrational part of individuals. “The planner” will try to impose constraints on “the doer”, but she/he will have to exercise will-power, which is a cost that should be incorporated in her/his choice.

\[
\text{“The doer” utility } Z_t = U_t + W_t \\
U_t(c_t) = \text{ subutility function} \\
W_t = \text{ willpower effort} \\
\text{If free to chose from an opportunity set } X_t: \\
\bullet \text{ “the doer” would select the maximum value of } c_t \text{ (maximizing } U_t). \\
\bullet \text{ “the planner” would prefer a smaller } c_t \text{ but she/he needs to exert some willpower that has the cost of } W_t.
\]

The authors described the model based on the following statements:

- an increase in willpower effort is necessary to reduce consumption;
- increased willpower is painful resulting in reductions in \( Z_t \);
- increased willpower can become more painful as additional willpower is applied.

One solution for a “rational planner” to deal with “the doer” is mental accounting. Thus, “the planner” restricts future choices that “the doer” will face in the future by imposing constraints or rules that alter \( X_t \) (opportunity set faced at time \( t \)). One of the rules utilized by households is the decomposition of wealth into a series of mental accounts.

For example, placing funds into a pension plan that prohibits early withdrawals, automatically drawing money from a current account to a deposits, or other mechanisms that prohibits or rather have a large costs to “the doer” when attempting to consume that wealth. At time \( t \), “the doer” would have no choice to make, therefore no willpower will be exerted. The authors divide wealth into three components or mental accounts: current spendable income (I), current assets (A), and future income (F). The marginal propensity to consume is assumed to be specific to each account, such that some wealth accounts are more tempting to invade than others. Marginal propensity to consume is account dependent. It is highest out of income (I) and lowest out of future wealth (F).

\[
1 = \frac{\partial C}{\partial I} > \frac{\partial C}{\partial A} > \frac{\partial C}{\partial F} \approx 0.
\]

While consuming out of the current spendable income \( I \), the marginal utility of consumption increases as consumption increases, but at a diminishing rate. When the entire balance of \( I \) account is consumed, the next marginal unit of consumption is then financed out of the current assets \( A \), which means it is current assets account. This account could include current savings or household wealth. \( A \) is less tempting than \( I \) and has as penalties associated with consumption from it. Consumption from \( A \) produces a disutility penalty or “entry fee for...
invading A account”. This could be an early withdrawal fee from a deposit or pension plan, commissions incurred for selling a real estate asset, etc. As a consequence, the first unit consumed from A is especially costly and the individual experience a drop in utility that is the disutility penalty, but the following units become less costly. Similarly, when F is invaded, there is another disutility penalty which could be described as the opportunity to borrow against future wealth. This cost could be for instance the interest rate paid on loans (Figure 1).

![Figure 1. Wealth division into mental accounts: I, A and F](image)

Source: (Shefrin, Thaler 2004).

Notations: **I** = current spendable income (after deducting savings); **A** = current assets (cumulated nonpension savings); **F** = future wealth (home equity could be here or in A)

When consuming out of I, the reduction of willpower effort contributes to higher utility, as consumption increases. We assume that as long as consumption from A is zero there is no willpower effort in connection with this account. Since framing is a direct result of mental accounting as placing wealth into different mental accounts as the way in which the planner is framing the wealth to the doer in order to impose restrictions on current consumption, framing it is not modelled per se in the behavioural modified model.

5. Future research and considerations

The features of the behavioural modified Life Cycle model developed by Shefrin and Thaler make assumptions and yield predictions that were tested in subsequent papers by the authors and other researchers. We consider that there are still opportunities for testing the model and comparing its predictions with those yielded by the neoclassical Life Cycle model, in order to conclude if the behavioural modifications gave more accurate results. This paper is only an introduction to a larger research effort aimed at making predictions about the adequacy of retirement savings of the Romanian population, using this model or other models that incorporate individual behavioural features into the neoclassical theory.

Continuing the research and applying one of these behavioural modified models might help people to evaluate more precisely the extent of future pension income adequacy.
References


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Ileana GURAN TEODORESCU is a PhD candidate at the Bucharest University of Economic Studies, Bucharest, Romania. Her PhD topic regards mostly the topic of behavioural economics with a special reference to: saving behaviour & savings predictive models. She co-operates for the PhD with the first author of this paper who is her PhD supervisor.
Abstract. The purpose of this paper is to highlight the importance of the innovative clusters mostly for the local communities such as smart and creative communities/cities. The first part of the paper is dedicated to a brief literature review in order to create the necessary conditions for debating the topic. Given the fact that the role of the innovative clusters is to create a sustainable competitive advantage, enhancing the competitiveness and the level of productivity and profitability, our goal is to identify the most relevant and defining characteristics. In the second part of the paper, we focus on the level of development of the urban areas in order to identify the most important regional innovative clusters in Romania. The focus will be on geographical and structural analysis of the selected clusters. In the third part, we continue with a more detailed analysis of the innovative clusters in order to create a successful “recipe”. The purpose of this “recipe” is to contribute to urban areas, but also to the rural areas development, which aims at enhancement of the quality and performance. Innovative clusters support start-up companies and help the existing ones to develop, by reducing input costs and increasing the sales market, through the opportunities for innovation that they offer. They also allow the companies to use local resources in order to develop their business rapidly and to gain a long-run competitive advantage.

Keywords: innovative clusters, smart cities, smart and creative communities.
1. Introduction

Innovative clusters are a key source for a long-run sustainable development and competitive advantages. The companies within a geographically concentrated innovative cluster share common technologies, skills, knowledge, inputs, consumers and institutions, facilitating the cooperation across complementary and related fields. At the European level, within the Program dedicated on Research – Development- Innovation, there is a project named “Regions of knowledge”. This project aims to ensure better communication between companies, regional research centres and public authorities, in order to increase the competitiveness of the European regions.

2. Brief literature review

Creativity is the capacity to produce new ideas which may lead to inventions and innovations. Nowadays it is essential in every economic activity, because it is one of the most important factors to contribute to a long-run sustainable development.

Michael Porter (Porter, 1990) had described clusters as geographic concentrations of interconnected companies, specialized suppliers, service providers, and associated institutions in a particular field that are present in a nation or region. Clusters lift as they increase the productivity with which companies could surpass.

Since innovative clusters are one of the most important factors of development, urban areas could develop better taking into account also cluster associations. Innovative clusters based on creative workers have a higher rate of success. Simon Evans (Evans, 2013), founder of Creative Clusters, underlined the advantages of creative clusters as: interconnected companies; new digital and technological opportunities; new business’s ideas; rapid spread of innovation. According to Johnson’s opinion about the history of innovation (Johnson, 2011), the rapid progress of Twitter social network started from the competitive advantage created by the Twitter Team based on the use of an open electronic platform, where all the employees could express their ideas and projects.

European Commission founded the European Cluster’s Observatory, which contains quantitative and qualitative statistics and compared analysis of the European Clusters (www.clusterobservatory.eu). This website is very useful because it collects dates from 30 countries, and it could be easily accessed by every citizen.

Romanian Cluster Association is an organization who sustains clusters development (www.clustero.ro). It consists in advertising Romania and in the country’s economic recovery and development, by supporting the creation, development and cooperation between clusters at the regional, national and international level.

3. Romanian Innovative Cluster

As the Ministry of Economy Report states, in Romania there are about 45 clusters, oriented in different areas. Some of them have similar activities, others have complementary ones. Moving on, these clusters have the same objectives too: to be more competitive on the market and to ensure a sustainable development.

Analyzing the distribution of these clusters on activities and regarding their regional position based on the city where they are located, we conclude that the most significant domains are:
Innovative Clusters as a key engine for a long-run sustainable competitive advantage

- **ITC (ICT Regional Cluster Timisoara; ICT–Regional Competitiveness Pole Craiova; IT New Media Iasi; IT Cluster Cluj; MECATREC Bucharest; SIS-AUTOM-INT-POL Bucharest, IMAGO-MOL–Cluster Iasi);**
- **renewable energy & green industry (Green energy innovative biomass Sf. Gheorghe; Geothermal Cluster Oradea; REN ERG Cluster Alba Iulia; TREC Transnational Renewable Energies Cluj; Med Green Pole Constanta; ROSENC Cluster Timisoara);**
- **Innovative tourism (TURINN Cluster Drobeta Turnu Severin; Carpathian Tourism Brasov; Tourism Regional Cluster Suceava; Tourism Oltenia Cluster Craiova; Eco-touristic Cluster Sf.Gheorghe; Health Tourism Cluster Mangalia)**
- **Creative Industries (like for instance Creative Industries Pole Iasi).**

These clusters include the most attractive activities and represent a key source for a long-run sustainable development. Romania has also set a new development strategy based mostly on the Research, Development and Innovation sector. According to the city vitality index, Cluj is on the first position as a city which grants resources and funds for the city development.

### 3.1. Study Case on Bucharest

Romania has been recently involved in a research project based on nuclear physics. Near Bucharest lies Măgurele Platform, a concentration of research institutes which are now the host of an important scientific program whose purpose is to build until 2017 a powerful laser within the Centre of Science Research Extreme Light Infrastructure – Nuclear Physics (called briefly ELI-NP). ELI-NP is an European Project, involving nearly 40 research and academic institutions from 13 EU Member Countries, forming a pan-European Laser facility, that aims to host the most intense lasers world-wide.

It will attract about 2000 science researchers from all around the world, who will cooperate and work together on this project.

But apart from these specialists, there will be also hired about 11 000 employers as technicians and personnel for an activity that requires high quality. The public authority has already begun the preparation to provide infrastructure and residences for employers in order to create the necessary conditions to develop this community and finalise work by 2014. We consider it is very important to understand the impact that such a project will have on the whole Romanian economy. This Laser will contribute also to the improvement of other sectors of activities such as: health care; pharmaceuticals; radioactive garbage; software for security control; high tech research – development - innovation.

In the same area near our country Bucharest metropolitan area it lies another cluster named Bucharest – Ilfov Regional Cluster for Mechatronics, first established in 2010. This new field – Mechatronics – and this cluster dedicated to it have the following main contribution to the regional development: improves transfer of know-how; increases technologic capacities; attracts partners; increase the level of productivity and stimulates competitiveness. This cluster includes as members: 33 companies, 3 universities, 8 research institutes and 3 public authorities. Nanotechnology allows the users to create substances and objects through atoms interactions. This technology is used in medicine engineering. The final products are equipments, components and electronic devices, but it also ensures the supply of basic information, and the maintenance & the support for using these technologies.
3.2. Study Case on Cluj

*Cluj IT Cluster* opened its gates in October 2012. As highlighted by Andrei Kelemen, its Executive Director the *main mission* of *Cluj IT Cluster* is to become the most reliable and competitive supplier of innovative IT services, products and organizational support systems.

*Cluj IT Cluster* is formed of 2 universities, 7 public institutions and 27 IT companies as members.

Its purpose is to *increase the IT competitiveness and to make Romanian IT Industry attractive.*

It also aims to build a *Smart Community* called *Cluj Innovation City.* The purpose of this smart & creative community is to develop a new economic structure, using elements based on knowledge management. So, in order to stimulate research and innovation activities, it combines different fields such as: IT, industry, finance, law, architecture. Thus, *building an attractive region,* based on the support of both government (through public funds) and also on the private sector support (through the most important stakeholders involved in the project), the *new smart & creative city* is gathering intellectual capital and stimulates the development of different technologies, *centred on innovation and creativity.* *Cluj IT Cluster* proposes to the Romania’s Government a project that can ensure free access to *an Open Data Platform,* which can be thus accessible to every user.

This is a necessary element to achieve the goals of the *Knowledge Based Economy and Society* at least at some regional levels in Romania.

A precise and integrate system of data provides infrastructure for all economic agents and this leads to a *new concept of businesses.* It also facilitates the access of all potential *creative & innovative entrepreneurs.* Through the free access on public data, the Government could replace the catalysts, with a positive effect on the entire economy.

As highlighted within this project, for the next period (2013-2020), the main strategic goal of *Cluj IT Cluster* is to raise a *modern, cultural and science city,* calling for the status of a *smart & creative city.* In order to reach this goal, *Cluj IT Cluster* intends to attract also foreign investors. The project includes new buildings for offices with a new design and complementary services for their employees, new research centres, classrooms for IT and smart technologies, hotels, restaurants and all the services that can stimulate their staff to become more creative and innovative. It is estimated that this project will lie on 300 hectars. The whole investment will get up to 300 mil. EUR and so in the next fifteen years, it is anticipated that Cluj will be the host for over 20,000 IT specialists.

3.3. Study Case on Iasi

The *second Smart City in Romania* is Iasi. It has a Regional Innovative Cluster, named *Euronest IT&C Hub,* which was founded in December 2012. This cluster gathers entrepreneurs, government representatives, universities and research institutes. Its main objective is to promote and sustain the IT development sector, by ensuring an innovative service of a high quality, which would contribute to the establishment of a *sustainable and competitive organizational culture.* In May 2013, a new member joined the hub, RomSoft. This company offers software applications to domains like mobile health and telemedicine. As highlighted by Dorin Cristea, one of its founders, its mission is to sustain and facilitate the *competitive and durable growth of the IT&C sector* in more modern and creative ways.

In Iasi there was also formed a new Regional Innovative Cluster for Molecular and *Structural Imaging.* This project is financed by the European Commission through the *Knowledge Regional Programme.* It has 20 partners, from 6 countries (Spain, Germany,
Innovative Clusters as a key engine for a long-run sustainable competitive advantage

Hungary, Italy, Bosnia and Herzegovina and Romania). This is the first cluster in medicine within our country.

We mention also that Iasi was the first creative city in Romania based on a win–win solution on the competition between six Romanian cities in 2008. It had benefit on the British Council support for three years in order to implement with good results this project.

4. An analysis of the Romanian innovative environment, as a prerequisite for innovative & creative clusters

One of the strongest ingredients that might contribute to the increase of the value added of innovation is education & investment in lifelong learning. Through education the rate of return is increasing and the processes of knowledge accumulation and dissemination are stimulated. Nowadays, when the world is changing very fast, governments and business environment recognize the importance of education and training as key element of creativity and innovation. According to Europe 2020 strategy it is generally recognized that knowledge & innovation are the most important engines for competitive advantage and for a long-run smart, sustainable and inclusive development.

Romania has to intensify the quality of its educational and research programmes. Sometimes there is a lack of coordination among the skills and workforce demand with respect to the most important skills requirements involved in order to support the creative & innovative activities, mostly within the creative & innovative clusters.

Considering the matter of competitiveness as one of the most important aspect of the supply & innovation chain, it is necessary to take an overview on the organizational & business environment. Stakeholders belonging to the business environment should invest both in training and in research activities in order to create a long-run sustainable advantage. From these activities, all firms could benefit by using knowledge & innovation as key sources for their development. Moreover, this process has to be qualitative, productive, and useful. That is the main reason why it should be improved. This may attract investors (both from the regional, national and international levels) and would increase not only the short-term profits, but mostly the long-run effectiveness & efficiency assuring the prerequisites for a long-run competitive advantage. Besides, in the period 2007-2013 there were over 800 firms who had collaborated with the public authorities under the umbrella of the National Research, Development and Innovation Plan. For a comparative analyse we mention that, for example, in Germany investments in research led to an increasing of science sector, attracting new ideas and projects and on these basis new links between different companies were created (www.muenchen.de).

According to the European Commission Report launched in 2013 (EC, 2013), in 2011 the expenditure on research, development and innovation sector in Romania was representing a percentage of 0.48% of the Gross Domestic Product (GDP). In 2012 it was smaller, because of the diminishing of the public sources from 0.31% in 2011 to 0.26% in 2012. The National Program of Convergence 2014-2020 stipulates that Romania has to reach a level of 2% of GDP allocated to RDI till 2020.

Related to the Innovation Unit Scoreboard 2013 Report, Romania is mentioned as one of the modest innovators.

We consider that there are two main reasons for this position: firstly is the weak linkage and co-operation between the economic actors and secondly in our country there is a relatively low level of entrepreneurship behaviour. On the other hand, there is a strong potential with respect to the human resources (Figure 1).
Management & Marketing. Special Issue

Figure 1. Romanian innovation dimensions index

Human resources are considered to be a source of a competitive advantage for Romania. This is due mostly because of the competitive price for highly skilled labour force in domains like: technology, medicine, engineering, foreign languages, comparing to other countries.

5. Future research and conclusions

Starting from this briefly overview, it is clear that Romania has followed another course in developing strategies specially dedicated to new creative & cities and communities.

Smart & creative cities based mostly on creative and innovative clusters are considered to be the key engines for a smart, sustainable and inclusive competitive economy & society. Our main resource lies into our people capacity of imagination, creativity and innovation. And also the lifelong learning and the quality of education is one important key of success in the context of a creative economy and a knowledge-based society.

It should be mentioned that there are also a set of challenges regarding mostly: the market fragmentation, budget problems, low investments in R&D, the mismatch between companies and universities necessities and a weak correlation between regional, national and EU objectives. As Porter (Porter, 1990) said, the development and upgrading of innovative & creative local clusters has to become an important part of the agenda for local communities, governments, companies, and other institutions.
Innovative Clusters as a key engine for a long-run sustainable competitive advantage

Cluster development initiatives are an important new direction in socio and economic policies, building on earlier efforts in macroeconomic stabilization, privatization, market opening, and reducing the costs of doing business.

Globalization has increased mobility of all types of resources, and thus it is even more important to distinguish the city brand in a world of competing brands, as highlighted within the Clusnet Final Report. Mostly on the European Union level there is strong connection between the decision making process at different levels such as: the EU – nation - state/region - city/region - local levels both as top-down & bottoming up policies (figure 2).

Both top-down & bottoming up policies of both hard and soft infrastructure have to meet bottom-up initiatives by individual entrepreneurs, firms, universities and other economic actors.

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Andreea Cristina FLOREA is a PhD candidate at the Bucharest University of Economic Studies. She has chosen the topic of creative & innovative clusters under the supervision of the first author of this paper. She had participated on some national and international conferences such as the European Conference on Knowledge Management, in September 2013.
Abstract. An empirical survey, which has been conducted since 2007 in Hungary, has aimed to investigate middle managers working at medium- and large-sized enterprises in Hungary by a questionnaire. One part of the survey answers have been analysed by using Principal Component Analysis and seven different components regarding competence groups found important for knowledge sharing have been identified. After revealing these competence groups our research has aimed to investigate whether there are differences within selected competence groups (methodological competences needed for thinking and methodological competences used for work method and style) regarding the characteristics of the middle manager’s organization. The results have shown that only regarding one of the examined competence group (methodological competences used for work method and style) there has been difference based on the investigated organizational characteristics.

Keywords: competences, knowledge sharing, middle managers, organizational characteristics.

ORGANIZATIONAL CHARACTERISTICS AND METHODOLOGICAL COMPETENCES
Are there differences within methodological competences needed for thinking and used for work method and style based on the characteristics of the organization?

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1. Introduction

The way knowledge is shared within the organization is essential not only to the success of the organization where it takes place, but also among those who share it, since those who take part in the knowledge sharing process will also benefit from it. However, knowledge cannot be shared efficiently without having the adequate competences. Accordingly it is also relevant to be aware of the competences that are necessary for sharing knowledge. From the large number of competences, those which are needed for knowledge sharing can be revealed with the help of middle managers, who will finally use them to share knowledge.

2. Theoretical Background

Stoof (2005) considers skills, besides attitudes and knowledge, as important elements of competence which according to him are required in the jobs or tasks employees must fulfil. The definition of Gibb (1990, p. 21) is similar to Stoof’s (2005) except that it also contains motivation and describes competence as “an ability to perform certain tasks for which knowledge, skills, attitudes and motivations are necessary”. Reinhardt and North (2003) emphasize the importance of requirements which is left out of the previously presented competence definitions but is involved in their definition of competence. They also emphasize that competence focuses on when knowledge is applied and it can be measured when the result of actions is achieved (Reinhardt and North, 2003). From the above presented definitions our research adopts the definition of Gibb (1990) who as mentioned earlier emphasis the importance of attitudes, knowledge, skills and also motivation to perform certain tasks, since all these characteristics are needed for the middle managers to fulfil their task in knowledge sharing.

Sonntag and Schäfer-Rauser (1993) investigated the self-assessment of vocational competencies. Three special vocational competences were assumed by them which are professional, methodological and social competences (Sonntag and Schäfer-Rauser, 1993). Their competences were adapted by Forgács et al. (2002), but in their classification professional competences contain capabilities and knowledge, while methodological competences consist of thinking and problem solving, creativity and learning ability. Furthermore, social competences include communication and cooperation (Forgács et al., 2002). Finally, personal competences were also adapted by Forgács et al. (2002) which were investigated earlier by Kuhl and Fuhrmann (1997).

Our research has adopted the above mentioned authors classification of competences and has differentiated seven competence groups found important for knowledge sharing by middle managers who work at medium- and large-sized enterprises. The investigated competences have been separated by principal component analysis into competence groups as methodological competences needed for thinking, methodological competences used for work method and style, social competences connected with communication skills, social competences connected with co-operational skills, professional competences, personal competences and intercultural competences (Szábo and Csepregi, 2011). Methodological competences needed for thinking and methodological competences used for work method and style are the competence groups that are examined in this paper. The first, methodological
competences needed for thinking, contains competences as logical thinking, systematizing ability, analytical ability, and system analysis capability, while competences such as awareness of organizational goals, result-orientation, and practical comprehension of tasks belong to methodological competences used for work method and style.

Differences could be revealed within certain competence groups from the point of view of the individuals and also regarding the organization where the middle managers work (Gaál et al., 2011; Gaál et al., 2012; Csepregi, 2012). The results of the latter (the middle manager’s organization) regarding its effect on the two selected methodological competence groups are presented in the following part of this paper.

3. Empirical Study

3.1. The Purpose of the Research and the Research Question

The purpose of this part of the research has been to discover which components of organizational characteristics result in differences within selected competence groups middle managers, who work at medium- and large-sized enterprises in Hungary, find important for knowledge sharing. Regarding this purpose the following question needs to be answered:

Question: How do organizational characteristics influence the methodological competences needed for thinking and used for work method and style which are found important for knowledge sharing by middle managers who work at medium-and large-sized enterprises in Hungary?

Organizational characteristics regarding the middle manager’s organization in our classification consist of the type of the investigated organization, the activity of the investigated organization, and the customer claims fulfilled by the organization. The category regarding the type of the middle manager’s organization designs to unfold whether the organization is characterized by being: national or foreign owned, privately or state owned. The activity of the middle manager’s organization aims to reveal which activity dominates within the organization: the service or the production. Only the categories concerning customer claims fulfilled by the middle manager’s organization, that refers to the demand by the customers, consists of questions containing answers based on a 5-point Likert scale in which the two extremes are not changing and fix customer claims, and often changing and complex customer claims.

3.2. The Hypothesis and the Data Collection

In order to answer the above presented research question the following Hypothesis has been stated:

Hypothesis: Difference can be found within the methodological competences needed for thinking and used for work method and style which are found important for knowledge sharing by middle managers, who work at medium- and large-sized enterprises in Hungary, on the basis of organizational characteristics.

The data collection of the survey was supported mainly by the Department of Management from University of Pannonia since 2007. Since there has not been any database containing the number of middle managers it has been difficult to identify the total number of
middle managers working in Hungary. Thus the registered number of medium- and large-sized enterprises in the statistics of the Hungarian Central Statistical Office (KSH) was searched. Based on the data achieved from the KSH it was possible to determine the registered number of middle- and large-sized enterprises in Hungary. Thus, it was possible to investigate 5700 enterprises on the average. This is considered to be the theoretical population of the research since every middle- and large-sized enterprise has at least one middle manager. The KSH statistics do not include the name and addresses of the enterprises, thus to identify the accessible population, newspapers containing rankings of the Top 100 and Top 200 enterprises, databases having information on the enterprises was investigated. Knowing this, the homepages of these enterprises was also viewed to find contact information of middle managers working there or at least the contact information of the enterprise where it was possible to send the letter or the e-mail. A sample of 4000 medium- and large-sized enterprises was selected and questionnaires were sent to them. This questionnaire comprises seven categories and from them Individual Competences contained questions regarding the importance of competences for knowledge sharing based on a 5-point Likert scale. Principal Component Analysis has been used on these data and seven principal components (competence groups) have been created. The questions concerning organizational characteristics were applied from General Information.

3.3. Results

3.3.1. Decision Tree

By using the method of decision tree it has been possible to reveal classes based on organizational characteristics only regarding methodological competences used for work method and style. The diagram in Figure 1 shows these revealed classes.

During the identification of classes regarding organizational characteristics within methodological competences used for work method and style classes have been revealed primarily by the customer claims fulfilled by the investigated organization, secondly by the activity of the investigated organization and thirdly by the type of the investigated organization. The customer claims fulfilled by the investigated organization is the strongest classifier. The activity of the investigated organization is the second strongest classifier, and the type of the investigated organization is the third strongest classifier.
Organizational characteristics and methodological competences

Methodological
Work method and style

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>customer claims</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fix, not changing</td>
<td>0.00</td>
<td>1.097</td>
<td>202</td>
<td>50.5</td>
</tr>
<tr>
<td>complex, often changing</td>
<td>-0.134</td>
<td>1.031</td>
<td>118</td>
<td>29.5</td>
</tr>
</tbody>
</table>

activity of organization

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>production</td>
<td>0.017</td>
<td>1.039</td>
<td>118</td>
<td>29.5</td>
</tr>
<tr>
<td>service</td>
<td>-0.345</td>
<td>1.146</td>
<td>84</td>
<td>21.0</td>
</tr>
</tbody>
</table>

type of organization

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>national</td>
<td>0.185</td>
<td>1.031</td>
<td>78</td>
<td>19.5</td>
</tr>
<tr>
<td>foreign</td>
<td>-0.310</td>
<td>0.987</td>
<td>40</td>
<td>10.0</td>
</tr>
</tbody>
</table>

Figure 1. Classes revealed within methodological competences
used for work method and style

On the other hand no classes have been revealed within methodological competences
needed for thinking regarding organizational characteristics.

3.3.2. Analysis of Variance

By using analysis of variance we have compare in pairs the group means of the
classes identified by the decision tree within the investigated competence group. After this the
groups with the most favorable results within each class of the investigated competence groups
have been separated from the groups with the least favorable results. The separated classes
according to being the most and the least favorable ones can be found in Table 1.
Table 1

<table>
<thead>
<tr>
<th>Methodological - Work method and style</th>
<th>type of organization</th>
<th>activity of organization</th>
<th>customer claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>the least favorable</td>
<td>national owned</td>
<td>the least favorable</td>
<td>not changing, fix</td>
</tr>
<tr>
<td>the most favorable</td>
<td>foreign owned</td>
<td>the most favorable</td>
<td>often changing, complex</td>
</tr>
</tbody>
</table>

We have combined the most and the least favourable results of the customer claims fulfilled by the investigated organization, the activity and the type of the investigated organization regarding organizational characteristics. Based upon these combinations eight groups have been formed within methodological competences used for work method and style. The eight groups can be seen in Figure 2.

![Figure 2](image)

**Figure 2. The Group Means based on Organizational Characteristics**

With the use of ANOVA test it has been possible to reveal whether the mean value of the group with the most favorable result, regarding methodological competences needed for work method and style, significantly has differed from the mean value of the group with the least favorable result. The group with the most favorable result has included foreign owned organizations which produce mostly and only physical products and fulfill often changing and complex customer claims. The group with the least favorable result has consisted of national owned organizations, which provide mostly and only services and fulfill not changing fix customer claims. The result of the ANOVA can be seen in Table 2.
Organizational characteristics and methodological competences

The ANOVA Result of the groups based on Organizational Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>20.037</td>
<td>7</td>
<td>3.148</td>
<td>3.274</td>
<td>.002</td>
</tr>
<tr>
<td>Within Groups</td>
<td>376.963</td>
<td>392</td>
<td>.962</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>399.000</td>
<td>399</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The statistical significance of the F test in the ANOVA has shown that at least one significant difference can be found in the means. To prove that the means of the groups with the most and the least favourable results regarding the investigated competence group has differed, a post hoc test has been conducted. However, to be aware of whether Tamhane or LSD test has to be used during the post hoc analysis, the test of homogeneity of variance has been examined. With the significance level of 0.326 in Levene’s test the variances of the investigated groups have been homogeneous. Thus the LSD test had to be used during the post hoc test to account for the significance of the investigated two groups.

The Result of the LSD Test

<table>
<thead>
<tr>
<th>Dependent Variable: Methodological - Work method, style</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>(I) Method-Work-customer, activity, type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(J) Method-Work-customer, activity, type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Least favourable: not changing, fix - service - national</td>
<td>-.63256599*</td>
<td>.18026919</td>
<td>.001</td>
<td>[-.98698 14, -.2781506]</td>
</tr>
<tr>
<td>Most favourable: often changing, complex - production - foreign</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The mean difference is significant at the 0.05 level.

The result of the LSD test in Table 3 has shown that there has been significant difference between the mean values of the groups with the most and the least favourable results.

On the basis of these results the following statements can be drawn:

Those middle managers who primarily have worked at organizations which fulfil often changing and complex customer claims and secondly have worked at organizations which produce mostly and only physical products and in the third place have worked at foreign owned organizations find methodological competences for used work method and style more important for knowledge sharing.

Those middle managers who primarily have worked at organizations which fulfil not changing and fix customer claims, and secondly have worked at organizations which provide mostly and only services and in the third place have worked at national owned organizations
find methodological competences used for work method and style less important for knowledge sharing.

3.4. Thesis and its Interpretation

Based on the above mentioned results the following thesis can be determined:

Thesis: Difference is found in the methodological competences used for work method and style which are found important for knowledge sharing by middle managers, who work at medium- and large-sized enterprises in Hungary, on the basis of organizational characteristics primarily by customer claims fulfilled by the investigated organization, secondly by the activity of the investigated organization and thirdly by the type of the investigated organization.

The presented Hypothesis has been partly supported, since only one of the examined competence groups has showed difference based on the investigated organizational characteristics. The Thesis shows that those middle managers who primarily have worked at organizations that fulfil often changing and complex customer claims, secondly have worked at organizations which produce mostly and only physical products, and thirdly have worked at foreign owned organizations find methodological competences used for work method and style more important for knowledge sharing. On the other hand, those middle managers who primarily have worked at organizations that fulfil not changing and fix customer claims, secondly have worked at organizations which provide mostly and only services, and thirdly have worked at national owned organizations find the above mentioned competences less important for knowledge sharing.

By being result-oriented the middle managers will want to share knowledge with others to be able to fulfill the often changing, complex needs of the customer. Furthermore if the claims of the organization are fulfilled with products the middle managers will have to comprehend the tasks practically. On the other hand if the middle managers identify themselves with the goals of mostly or fully foreign owned organizations which fulfil the above mentioned customer claims then they will know that social interactions are important during knowledge sharing and will know the kind of knowledge that is needed and why it is important to share it.

While if an organization fulfills only not changing and fix customer claims then the middle managers are not absolutely keen to share knowledge which results in a moderate extent of knowledge sharing. Furthermore, if this national owned organization offers services as well that fulfil the above mentioned customer claims then the middle managers are not inspired to be result-oriented either and try not to share knowledge. The continuous fulfilment of not changing and fix customer claims will result in a monotonous, routine work which does not require additional competences.

4. Conclusion

This paper presents the results of an empirical research conducted since 2007 among 400 medium- and large-sized enterprises in Hungary. Findings of the research indicate that methodological competences used for work method and style show differences regarding the organizational characteristics of the middle manager’s organizations. These examined
Organizational characteristics and methodological competences

Characteristics are the customer claims fulfilled by the investigated organization, the activity of the investigated organization and the type of the investigated organization.

Acknowledgments

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Abstract. The dangers hampering the performance of solar energy companies, and practical techniques to mitigate the risks in the solar energy business are poorly explored in the renewable energies literature. Since we found a limited amount of research on risk management in solar energy companies in Eastern European countries we chose to endeavour to cover this gap. As a result, based on semi-structured interviews with experts in Romanian solar energy firms, in this paper we seek to address the challenge of building a classification framework of internal and external risks of a solar energy company, highlighting the ways to mitigate risks in this business. Our exploratory work highlights that the solar energy projects are impeded by six key risks: technological risks, access to finance risk, operational risk (internal risks) and political risk, regulatory risk and weather related risks (external risks). The research results indicate several key factors as main risk mitigators: improvement of energy efficiency, organizational learning and investment in knowledge, relying on proven technologies, defining an in-house risk management function, collaboration strategies among stakeholders in the industry, permanent monitoring and maintenance, insurance. By undertaking this study we aim to contribute to the scarce literature written on the background of Romanian business companies acting in the solar energy industry and to raise awareness on the fact that improved judgment and information of current and future risks is a major challenge.

Keywords: solar energy, risk management, risk mitigation, technological risk, energy efficiency.

RISK DIMENSIONS IN THE ROMANIAN SOLAR ENERGY LANDSCAPE

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1. Introduction and main purpose of the research

Globally, the stakeholders in the energy industry agree upon the bleak future of limited conventional energy sources and the permanent tension of developing new technologies in the scope of reducing carbon emissions across all industries, thus requiring an increased attention to the renewable energies. In the light of the critical environmental changes that drive this shift, Hurst (2012) asserts that the debate of climate change appears to have moved on from whether or not it is occurring to one of how best to minimise any impact. Therefore, an amplified concern regarding better risk management in this industry is on the focus.

The literature is rich in studies regarding the role of market forces in delivering energy efficiency, and how market-based instruments play a central role in most national energy efficiency policies (Energy Efficiency Governance: Handbook, 2010), but a lesser attention was given to the dangers hampering the performance of solar energy companies, and practical techniques to mitigate the risks in the solar energy business. Consequently, this study wishes to cover this gap in the literature by addressing the case of risk management in solar energy projects.

2. Methodology of research

The results in our research rely on the Delphi technique and semi-structured interviews and is loosely based on the methodology used by LaBelle (2012) who used a theoretical framework to reframe traditional risk literature and provided a connection to governance literature in order to assess the ability of EU governance mechanisms to reduce carbon emissions.

The Delphi process consisted in introductions and statements by participants, all managers or middle managers in sold energy field, answering key questions formulated during the introduction session and formulating relevant conclusions. The Delphi process relied on a meeting hosted by the Romanian Photovoltaic Industry Association in April 2013 which gathered 9 experts in the field, representing stakeholders in the solar business: managers and middle managers in consulting, design, installation of photovoltaic system firms or from key equipment suppliers. The interview methodology relied on a semi-structured format. Twenty-one people were interviewed, fifteen in person and six by email. The main themes approached were legislation and regulation, taxation and financial constraints, investment in new technology, energy efficiency, the role of the regulator and the political influence, transport. Open-ended questions were asked to allow each respondent to provide a personal perspective. The interviews were conducted between April and May, 2013.

3. Theoretical background

3.1. Solar energy risks

Renewable sources play an increasingly important role in producing sustainable energy and contribute a rapidly growing share of the world’s energy needs. Apart from the benefits, renewable energy projects tend to be complex and may entail a wider range of risks than anticipated. Identifying and managing the risks of innovative, and often, pioneering projects, can be highly challenging. Yet, effective risk management is a fundamental prerequisite for developing a financially viable project. Whether at the financing, construction,
handover or operational stage, the failure to appropriately identify, manage, control and transfer risk is one of the factors most likely to jeopardize a renewable energy business. (Small, 2012).

Chavis and Bahill (2010) grouped the identified risks associated with solar energy production in several different tiers: risks related to the utility company or grid, project management/development risk, customer risk, hardware risk, environmental risk, and government risks. Their research concluded that the greatest risk for a PV system was weather risk, the risk of the panels receiving less sunlight than expected. Grid related risks are the second greatest risk category. These risks include the grid frequency going out of the ±0.5 Hz limit, feeder circuit disconnects, and shorts to ground. Hardware risks have been ranked at the bottom of the performance risk table and include failures due to component malfunction or external events such as lightning or dust. Accidents and human mistakes are the risks with the highest severities given that they can harm people; however, the occurrence of such accidents is extremely low. Economic risks include a change in interest rates. Environmental risks include immediate risks to the environment such as habitat destruction, as well as deferred risks (such as the disposal after the system’s lifecycle or after irreparable failure). Large scale solar farms could have a negative impact on local habitats and could modify animal migration paths. The disposal risk is very low since PV panels (as well as the rest of the system hardware) do not contain dangerous or extraneous materials that would complicate system disposal. The other environmental risk is unknown hazards and is related to the possibility of discovering that the system contains elements that may be cancerous agents or that could cause potentially deadly illnesses, or that the system could result in any other unknown events. Finally, government risks include any changes in regulations, such as carbon emissions policies that would have a direct or indirect impact on the viability and size of PV systems. (Chavis and Bahill, 2010).

4. Results and discussions

4.1. Risk classification framework

In our study we have approached risk from the point of view of the photovoltaic plant company involved in the solar energy business.

Figure 1 depicts the major internal risk drivers for a large or small company involved in the business of solar energy, out of which the highest concerns are raised by operational malfunctions and technological constraints, as it resulted from the Delphi session and the semi-structured interviews with experts in the Romanian solar energy industry.
All the experts interviewed agreed upon the fact that *operational risk* is their biggest concern, mainly consisting in the risk of unplanned photovoltaic system closure, for example owing to unavailability of resources, system damage or component failure. This will also lead to a direct impact on energy deficiency, the highest desiderate in this business.

The second most important risk for developing solar energy projects is *technological*. Our experts face with the risk of components generating less electricity over time than expected, due to a number of reasons: technical characteristics not adequate, high initial costs, technological obsolescence. The equipments (panels, inverters, cables) can have reduced characteristics from several causes: they can differ into design flaws, operation/aging of materials, grid influences, and improper settings.

*Construction risk* is also very common for PV projects, residing in risk of property damage or third-party liability arising from mishaps during building or testing of new plants. Our research revealed that it usually occurs when the builder is not properly equipped for finishing the plant on time and also for testing it.

*People related risks* are regarded as high threats by our respondents, since they are the major actors in any energy project and the key assets of the company. Especially Romanian firms that innovate in the solar energy industry are confronted with a shortage of skilled and talented employees who don’t possess critical knowledge in order to manage an open partnership and the new knowledge acquired.

Our interviewees revealed that many firms have a poor *organizational culture*, insufficiently oriented towards collaboration and innovation, marked by fear of losing control over its own technologies or knowledge. This is a sign of poor social capital and a lack of *strategic* vision in Romanian companies, which impedes the performance of the renewable energy companies. Moreover, gathered from all the opinions expressed by experts in the field, some other organizational internal threats refers to other priorities of the management, inertia, lack of internal sharing of the company’s objectives, divergent interests, complex decision chain, poor time management, lack of internal control.

Figure 2 illustrates what external risk drivers are considered most noteworthy for the companies we surveyed. The external risk drivers can be mapped down to six categories: difficult access to finance, environment related threats, weather, regulations, government policies and market uncertainty.
The environment acts as a risk driver for the performance of a PV company, being related to environmental compliance, damage of the environment or sabotage. Our experts defined environmental compliance risk as the financial constraint to which they are exposed, when signing a contract with third-parties, residing in existing environmental regulations and uncertain future regulations. Furthermore, when building a PV system there is also the risk of damaging the environment, and the liability arising from such damage. Though not a consistent concern of the solar energy experts we discussed with, theft of components of the PV system is a threat correlated more to the social capital of the country itself. Parts of the solar plant may be subject to sabotage or theft and thus influence the energy efficiency of the whole system.

Weather is of critical importance when managing a PV plant; therefore the risk of a fall in volume of electricity produced owing to lack of sunshine was mentioned by all the people interviewed in our research. A very common concern is the risk of changes in electricity generation due to lack of sunshine or snow covering solar panels for long periods of time.

Financial risks stay at the front of the barriers facing the renewable energies, especially when dealing with high initial investment. The one factor that drives this industry to overcoming this risk is efficiency. Managers in the Romanian solar industry complain the banks offer few and limited financial instruments to help finance the upfront costs of building a PV plant. What was specifically mentioned by our experts was that solar project stakeholders are focusing more heavily on assessing the degree of financial risk or “bankability” of a solar energy component provider before choosing them for a project. Furthermore, they stressed that the cost of solar PV is still significantly higher than that of conventional electricity sources.

Regulatory risk was the highest external concern of solar energy companies in the Romanian market. They often face the risk that future laws, regulations, regulatory reviews will burden the performance of their activity and off all industry. The complexity of bureaucratic procedures and corruption deeply hampers the Romanian business landscape and are felt as great impediments by people working in the solar energy field.

Political and government support is another important risk and it relates to government support for solar energy. All of the managers interviewed for this research stressed the importance of policy support in making renewable solar power economically viable. In
Romania there is a great concern regarding the instability of national regulations, the absence of guarantees from national governments on invested capital and revenues from projects, political stability, and the lack of support from local governments.

**Market risks** are residing in low diffusion of technologies, low diffusion of information, risk of an increase in the price of commodities and other inputs, or decrease in the price of the electricity sold.

When asked our experts about the significance of various types of risk to their solar energy projects, 85% of respondents rate financial risk as a “high” risk; a further 10% categorise financial risk as “medium” in its significance. 80% of experts ranked legislation burdens right after access to finance as a high risk, while policies and government support is perceived as a high risk by 75% of the respondents.

![Figure 3. Risks perceived the most significant in solar energy business](image-url)

Inside the Delphi session and in the semi-structured interviews, we have asked our experts about main factors that help mitigate they encounter in their activities.

During the discussion we had with the managers they have mentioned that the main way solar energy producers mitigate political and regulatory risk is to intensify communications with policymakers, regulators and industry bodies, and to increase collaboration among firms in this industry.

Organizational learning, training of people and continuous education are perceived by experts in the field as key strategic directions to invest into in order to be more competitive in their industry and to better cope with workforce risk and the organizational culture threats. Continuous learning also ensures rapid adaptation to the changes in regulations affecting the open innovation agreements and a more speedy orientation towards sources of financing.

In order to protect from extreme weather affecting the energy efficiency, certain measures can be taken: reviewing the rating of panel and racking systems to withstand extraordinary weather events, and installation of surge and lightning protection.

While theft is a concern, the solar industry presents some unique challenges. Specific security measures mentioned include solar panel fasteners designed specifically to prevent theft of panels and other materials. Specialized alarm systems that are activated if a panel is moved to create an audible deterrent and notify law enforcement, is another emerging and effective theft deterrent option.
As part of a proactive risk management strategy, insurance is what all experts regarded as mandatory for risk management assistance throughout the solar project lifecycle. They also recommend that insurers should tailor their offerings on the company’s needs and to extend their coverage for the whole lifetime of the solar project, from initial design to construction to operation and including maintenance and service.

Some more remote mitigation ideas came from smaller firms, which asked for more deep industry collaboration among competitors, since industry partnerships could become critical.

5. Conclusions

Risk is an important and under-researched issue in the economics of renewable energy development.

On the basis of a Delphi session and semi-structured interviews with 21 experts in the Romanian solar energy field, this paper has empirically explored the risk agenda companies encounter in the business of solar energy specifically pointing to some factors which help decrease the threats. Within the research, our work highlights that solar energy projects are impeded by these main risks: technological risks, access to finance risk, operational risk (internal risks) and political risk, regulatory risk and weather related risks (external risks). All the risks identified were mapped down in twelve categories of risk drivers, with both internal as external origin: workforce, organizational culture, operations, strategy, technology, constructions, finance, environment, weather, legislation, policies, market.

We have further enquired about risk mitigation measures that guide the solar companies’ decision making and we identified several key factors as main risk mitigators: improvement of energy efficiency, organizational learning and investment in knowledge, relying on proven technologies, defining an in-house risk management function, collaboration strategies among stakeholders in the industry, permanent monitoring and maintenance, insurance.

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Abstract. Starting from the presentation of one of the financing instruments proposed by EU for achieving social and economic cohesion, i.e. SOPHRD financed through European Social Fund, with main focus on promotion and information actions financially supported by it, and in the same time considering also the rules to be followed by the SOPHRD intermediate management bodies and by the beneficiaries, this paper aims to bring forward the visibility and impact of such actions over the target audience by presenting the results of a focus group qualitative research carried out among the target audience consisting of beneficiaries of such project.

Keywords: SOPHRD, instruments, visibility, image, efficiency.

THE ANALYSIS OF EFFICIENCY OF INSTRUMENTS USED IN SOPHRD (SECTORAL OPERATIONAL PROGRAMME FOR HUMAN RESOURCES DEVELOPMENT) PROMOTION

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1. Introduction

In order to achieve social and economic cohesion, European Union member states use a series of instruments such as structural fund system, competition policy, monetary policy coordination through European monetary system, common agricultural policy and community institution system.

The structural funds allow income redistribution to disadvantaged regions through the participation of all member states in forming the community budget. One of the funds created in this respect is ESF (European Social Fund), mainly aimed to reduce disparities regarding life standards, prevent long-term unemployment and improve young people capacity to get jobs. ESF was established in 1958 and it finances the following priority axes: increasing adaptability of workers and enterprises; improving access to places of work and participation to labour market; strengthening social inclusion by fighting against discrimination and facilitating access to labour market for disadvantaged individuals; promoting partnership for reform in the fields generating employment and inclusion; extending and improving investments in human resources, especially by improving the education and training systems. In disadvantaged regions, finance is provided also for human capital (for education system improvement), development of institutional capacities and public administration efficiency at all levels. (http://ec.europa.eu/esf/home.jsp?langId=ro).

2. Methods for the SOPHRD promotion in Romania

In Romania, ESF finances between 2007-2013 two operational programmes: SOPHRD and the Operational Programme for Administrative Capacity Development. SOPHRD is managed by the Management Authority for SOPHRD and it has as main objective the human capital development and its competitiveness increase by linking the education and learning throughout the entire life with the labor market and ensuring a high level of participation on a modern, flexible and inclusive labor market. For the above mentioned period 1,650,000 individuals were considered in the financing plan. At the end of 2011, 2,993 financing applications were approved out of the 10,204 submitted, amounting around 3,7 billion euro (280 representing pending projects), on the 7 priority axes of the programme: “Education and training in support for growth and development of knowledge based society”, “Linking lifelong learning and labour market”, “Increasing adaptability of workers and enterprises”, “Modernization of Public Employment Service”, “Promoting active employment measures”, “Promoting social inclusion”, “Technical Assistance” (Annual implementation report 2011, p. 5).

At the end of 2007 (November), the Romanian Government settled a set of guidelines for the activities of information and promotion through the National Strategy of Communication 2007-2013 for the Structural Instruments in Romania. These measures address (according to the European Union regulations) to the following categories: potential beneficiaries (eligible beneficiaries determined for each priority axis of SOPHRD), beneficiaries (eligible beneficiaries who obtained financing through SOPHRD, according to the provisions of art. 2 from the EC Regulation no. 1083/2006) and the general public. The category of receivers also includes the following target groups (due to their capacity to...
influence the general public), namely media representatives, who provide information regarding SOPHRD, opinion makers, who can influence the perception over activities financed through SOPHRD and institutional system representatives, important for ESF management or other Structural Instruments. (Communication plan for SOPHRD 2007-2013, pp.5).

The general objective of this plan consists in raising awareness and information regarding the opportunities, benefits and results that may be obtained through ESF for human resources development in Romania, simultaneously with the information upon the role and added value provided locally, regionally and nationally by the EC support, as well as in promoting and facilitating the high quality projects submission for financing, according to the implementation aims of SOPHRD. In the same time, a series of specific objectives were settled, such as ensuring access for all potential beneficiaries to information related to financing opportunities through SOPHRD; providing informative support for beneficiaries in implementing their projects; raising general audience awareness regarding the financing opportunities and SOPHRD achievements, as well as increasing the visibility of EU support for regional development and for social and economic cohesion of Romania; ensuring transparent implementation of SOPHRD, by providing information regarding the programme implementation, eligibility requirements, description of procedures related to the assessment of projects submitted for financing, selection criteria, financing beneficiaries and information points locally, regionally and nationally available.

In this strategy were included a series of instruments in relation with the proposed objectives (Table 1):  

<table>
<thead>
<tr>
<th>Type of measure</th>
<th>General admission</th>
<th>Informatio n support</th>
<th>Public awareness and visibility</th>
<th>Transparen cy</th>
<th>Budget (euro)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help desk</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
<td>4.879.406</td>
</tr>
<tr>
<td>Web site</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>2.033.086</td>
</tr>
<tr>
<td>Events &quot;face to face&quot;</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td>12.943.980</td>
</tr>
<tr>
<td>Thematic networks</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Promotion campaign</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>23.583.796</td>
</tr>
<tr>
<td>Radio-tv shows</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td>8.132.343</td>
</tr>
<tr>
<td>Public relations activities</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td>609.926</td>
</tr>
<tr>
<td>Publications</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>3.300.376</td>
</tr>
<tr>
<td>&quot;Off-line multimedia (DVDs, CDs)&quot;</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td>813.234</td>
</tr>
<tr>
<td>promotional materials</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>812.178</td>
</tr>
</tbody>
</table>


All these instruments were, or are to be, carried out through the provision of a total budget of 65,444,221 euro out of which around 25% represents national co-financing and 75% community financing through ESF. Beside the actions entered in Table 1, amounts were also allocated for studies and research (3,253,723 euro) and for follow up and evaluation of information and promotion measures (5,082,172 euro).

Through a SOPHRD project (SOPHRD 7/7.2/1) on the priority axis intended for technical support, the Management Authority for SOPHRD has been assigned in 2008 the
rights to provide a series of promotion and advertising services for SOPHRD 2007-2013. The requirements consisted in broadcasting services for two TV commercials of 30 seconds each, two radio commercials of 30 seconds each, services of a banner design and distribution on the Internet. The objective was to increase the awareness and interest towards accessing the projects’ financing out of ESF through SOPHRD 2007-2013. The results consisted in three media plans for TV (the spots appeared on Antena 1, Antena 3, PRO TV, Realitatea TV), radio (378 audio spots broadcasted only between 07:00-09:00 AM, 126 spots broadcasted on each of the following radio stations: Radio România Actualitati, Europa FM and Kiss FM) and Internet (4,706,235 displays on the top 30 websites, selected depending on the number of unique visitors) (www.fseromania.ro – Evaluation report of the impact of purchasing written media, audiovisual and electronic advertising services for the image promotion/customers information) (Evaluation report of the impact of purchasing written media, audiovisual and electronic publicity services for the image promotion/customers information).

Another important aspect to mention when the issue of publicity of programmes financially supported through EU funds is analyzed is also the obligation of both national and intermediate bodies taking care of funds management and such funds beneficiaries to comply with a series of rules regarding the information and publicity activity for an increased visibility. In such context, MASOPHRD drawn up a “Manual of visual identity” which comprises a series of visual identity rules and elements that shall be used in order to promote the European Union visual identity, the Structural instruments in Romania and the ESF/SOPHRD, including graphical examples. There are provided also the general and specific rules to use these elements and a series of examples for the Intermediate Bodies and beneficiaries. The manual includes a series of specific rules of visual identity, rules that take into account the techniques that may be used within the awareness, education and information campaigns which target the general audience or certain categories (thus, the Internet sites, press releases, audio/video clips, publications, posters, banners, advertisements, stickers and plates for fix actives, events, customized materials are mainly targeted) (Visual identity manual).

Beside the promotion and awareness actions carried out at a national level, the potential customers of programs financed through ESF-SOPHRD have been also the subject of the promotion activities carried out by each beneficiary that implements such projects. Taking into account these premises, the paper aims to present further on a series of grounds resulted from the conclusions of a focus group qualitative research carried out among the beneficiaries of a project financed through ESF SOPHRD regarding the visibility and image of these European funds.

3. Research objective and methodology

The main objective of this research was to determine the efficiency of awareness and information methods used to promote the SOP HRD.

Subject population

The subject population is composed of individuals from Romania who benefited within at least a SOPHRD project.

Considerations regarding the research methodology

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Considering the nature of the studied aspects and in order to achieve the objectives established, a focus group qualitative research has been carried out. This method was chosen because it was important to determine certain aspects related to motivations, motives and attitudes that could not be communicated through simple answers within preset closed scales.

The focus group moderation has been carried out by a qualified person who conducted the semi-structured discussions so as to get the target information, but without influencing the participants positions by expressing personal value judgments or other imposed by the beneficiary. The discussions were also assisted by a co-moderator. The moderators succeeded in creating a framework that stimulates the group's emergence of ideas, each participant having the possibility to express and develop his own position, favorable or contrary to other expressed opinions.

Interview participants were previously informed about the topic and it was intended that they have common characteristics in order to form a relatively homogenous group. Moreover, the aim was to get together individuals without knowing each other or at least without permanent contact and without taking part to a similar discussion in the last six months.

For the participants recruitment it was used a questionnaire through which it was checked the subjects' compliance with the requirements set within this research.

Four focus group sessions of 2 hours each have been organized, which 46 individuals took part to.

The meetings have been recorded, and the results have been analyzed using methods such as: content analysis, horizontal and vertical analysis. For an efficient focus group organization an interview guide was previously drawn up as a basis for discussion orientation towards directions imposed by the research objectives. Projective techniques were also employed within the four focus groups, such as: spontaneous association, imaginative personification, filling in phrases in order to find the most subtle issues regarding the effectiveness of the training program currently evaluated.

The research limits are those imposed by the chosen method. Like all qualitative method approaches, this research does not analyze samples built so to ensure the conclusion generalization from a statistical point of view. This research used a theoretical sample, meaning that subjects' selection was carried out depending on their level of representativeness for the consolidation of theoretical information acquired during the activity of information/analysis/research.

The synthesis of information obtained within the focus groups will be presented further on, as well as the general conclusions of the qualitative study. Complying with the professional deontology, the conclusions will not be drawn as value judgments, but maintaining the position of the impartial researcher who transposes concrete information obtained through scientific methods into abstract conclusions.

4. Research data analysis and conclusions

In order to determine the extent to which each measure of promotion included in the Communication Plan for SOPHRD 2007-2013 has been inspiringly chosen and efficiently used, a discussion was launched for each alternative.
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Regarding “Help desk”, participants stated they only supposed its role and they considered it an information instrument useful more for the management teams implementing projects than for the final beneficiaries. None of the participants called or otherwise contacted a help desk. Being asked to find a reason for which SOPHRD projects beneficiaries do not use such a mean of information, the general opinion centered over the idea according which beneficiaries prefer to inform directly from the organization implementing the project within which they are involved, feeling more confident that this institution is able to provide accurate information in respect of their issues. After moderator's short description of this instrument, participants expressed their opinions regarding the advantages and disadvantages of this mean of information, although they did not have a personal experience in this respect. Among the pointed advantages we noticed: the high level of trust that information acquired is true, the possibility to get a higher volume of updated data through a short communication channel. Among disadvantages were identified the followings: long time to get an answer and the formal way in which the questions have to be asked.

The second instrument analyzed was the programme’s website. The research revealed several interesting ideas, but the most important was this one: In general, when it comes to SOPHRD programme, Internet won the competition with other classic instruments used for information and promotion purposes. However, the programme's website is not the main source of information for the focus group participants. On the contrary, most of them had never accessed the official page www.fseromania.ro or the web portals for information and network activities made available for the SOPHRD potential beneficiaries by the implementing bodies. They found information about SOPHRD on other information websites such as www.finantare.ro or www.fondurieuropene.ro or from certain articles published in the online press.

Related to “face to face” events (conferences, seminars, events), the research revealed that these represent highly appreciated instruments but to which focus group participants consider they do not have access due to the high cost of participation. The moderator brought into question the possibility of free participation to events such as seminars or conferences organized for SOPHRD promotion purposes and most of subjects appeared interested or even delighted by such a possibility. The main identified advantage was the possibility to directly interact with individuals with expertise in the field. Only one participant stated that he had personally participated to a conference organized for information purposes in the field of “funds absorption”. Other two subjects revealed that they had taken part in SOPHRD project launch conferences and they had left with good impressions and a large amount of information.

Regarding the advertising campaigns, one may state that, following the analysis of discussions had within the four focus groups, they significantly contributed to the SOPHRD image formation. Participants remembered several video clips shown on TV channels through which were sent motivational messages and information related to the way in which individuals from different social or professional categories may be supported through SOPHRD.

From the television newscasts, focus group participants understood rather the fact that there are many problems and disorders in the implementation of SOPHRD financed projects. No participant remembered to have seen shows through which concrete results or positive
things were presented related to this programme. We may state that this mean of information contributed rather to a negative image formation over SOPHRD than to a positive one.

Regarding the other means of information and promotion analyzed, such as publications, off-line multimedia, promotional materials, we may state that these were, in general, more visible than those previously presented. All participants stated that they had received information and advertising materials both related to the project within which they were beneficiaries and related to other projects. The most appreciated promotional materials are ball pens, memory sticks, backpacks, t-shirts, notebooks.

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Abstract. Entities may proceed to revaluation of tangible assets existing at the end of the financial year, so that they are shown in the accounts at their fair value, with the results of this revaluation reflected in the financial statements for that year. Revaluation should be made with sufficient regularity, so that the carrying amount should not differ substantially from that which would be determined using the fair value at the date of the balance sheet in relation to an active market. The content of this article presents the reasoning according to which the accounting treatment of the different results from the revaluation of tangible assets is done.

Keywords: revaluation, fair value, depreciation, net carrying amount.

ACCOUNTING TREATMENT FOR PROPERTY, PLANT AND EQUIPMENT REVALUATIONS

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Challenges for the Knowledge Society (2013) Vol. 8, Special Issue, pp. 379-386
1. Revaluation rules

The initial evaluation is based on cost, calculated on the basis of the supporting documents; cost that gains the status of input carrying amount.

For further evaluation of the initial recognition, an entity may choose to apply the rules of basic evaluation or the rules of alternative evaluation.

Resorting to IAS 16 - Property, Plant and Equipment, the above mentioned rules are circumscribed to the following models: the cost model or the revaluation model.

The cost model consists of the carrying amount of an item of property, plant and equipment is its cost less the accumulated depreciation and impairment losses.

On the other hand, the revaluation model assumes that the carrying amount of an item of property, plant and equipment is its fair value less the subsequent accumulated depreciation and impairment losses.

The fair value of tangible assets is usually their market value. This value is determined based on some evaluations conducted by professionals qualified in evaluation, members of a professional body in the field, recognized nationally and internationally.

When you want to revaluate tangible assets, you should proceed to simultaneously revaluate all the elements of that group of assets to avoid the selective revaluation and reporting, in the financial statements, the amounts consisting of costs and sums determined at different dates.

A group of tangible assets include assets of the same kind, with similar purposes, found in an entity’s operation.

The resulting difference between the fair value and the carrying amount of the assets should be presented as an added value or a minus value.

If the result of the revaluation is an increase of the net carrying amount (added value), then it is treated, either:
- as an increase of the revaluation reserve from the equity, if there was not an anterior decrease recognized as expenses afferent to that asset; or
- as an income to compensate the expenses with the decrease recognized before at that asset.

On the other hand, if the result of the revaluation is a decrease of the net carrying amount (minus value), it is treated as:
- expenses with the entire value of the impairment, when in the revaluation reserve there was not recorded a sum regarding that asset (revaluation surplus); or
- a decrease of the revaluation reserve from the equity, with the minimum between the value of that reserve and the value of the decrease, and the possible difference left uncovered is recorded as expenses.

Next, to understand the mechanism underlying the accounting registration of the revaluation, we present the specific treatment of not depreciable tangible assets – a piece of land.

Example

An entity purchased a piece of land, its acquisition cost being 100,000 lei. At the first revaluation of the assets a fair value of 105,000 lei was determined. At the second revaluation, the fair value of the assets was placed at 95,000 lei. At the third revaluation the market value rose to 103,000 lei. At the fourth revaluation the fair value of the assets was determined by an assessor at 101,000 lei.

We present the accounting registration for each revaluation, as follows:
Accounting treatment for property, plant and equipment revaluations

The first revaluation
The positive difference which appears at the first revaluation will be written at revaluation reserves, taking into account that, for this asset no minus value was noticed.

<table>
<thead>
<tr>
<th>5,000</th>
<th>Plant and equipment items</th>
<th>=</th>
<th>Revaluation reserves</th>
<th>5,000</th>
</tr>
</thead>
</table>

The second revaluation
The negative difference of 10,000 lei (105,000 – 95,000) will cancel the reserve from the existing revaluation and the uncovered difference will be recorded at expenses.

<table>
<thead>
<tr>
<th>5,000</th>
<th>%</th>
<th>Plant and equipment items</th>
<th>=</th>
<th>Revaluation reserves</th>
<th>10,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,000</td>
<td>5,000</td>
<td>Operating expenses regarding the adjustments for the depreciation of the assets</td>
<td>=</td>
<td>Plant and equipment items</td>
<td>10,000</td>
</tr>
</tbody>
</table>

The third revaluation
The positive difference of 8,000 lei (103,000 – 95,000) will lead to the recognition of an income that will compensate for the previously recognized expenses and the remaining positive difference will be recorded at the revaluation reserves.

<table>
<thead>
<tr>
<th>8,000</th>
<th>Plant and equipment items</th>
<th>=</th>
<th>%</th>
<th>Income from the adjustments for the depreciation of the assets</th>
<th>Revaluation reserves</th>
<th>5,000</th>
</tr>
</thead>
</table>

The fourth revaluation
The negative difference of 2,000 lei (103,000 – 101,000) will diminish the revaluation reserves and no impairment charge will be recognized.

<table>
<thead>
<tr>
<th>2,000</th>
<th>Revaluation reserves</th>
<th>=</th>
<th>Plant and equipment items</th>
<th>2,000</th>
</tr>
</thead>
</table>

2. Depreciation treatment

At the revaluation of property, plant and equipment, the accumulated depreciation at the date of revaluation is treated in one of the following ways:
- removed from the gross carrying amount of the assets and the net amount is restated according to the fair value (this method is often used for buildings which are re-valued at their market value); or
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- restated proportionately with the change of the gross carrying amount of the assets, so that the carrying amount of the assets after revaluation should be equal to its fair value (this method is often used when the assets are re-valued by means of applying an index).

Each method has its arguments.

We present below an example where the entity has chosen to apply the first method, which is based on the net amounts, i.e. after each revaluation the restated depreciation is removed from the gross carrying amount of the assets.

**Example**

On 10 May 2013 an entity purchased an industrial building for 720,000 lei. The useful life of the asset is 40 years and the depreciation regime used is the straight-line depreciation. We assume that the first revaluation of the asset is carried at 31 December 2016. The fair value determined by an independent assessor is 700,000 lei.

We present the accounting records:
- the record of the monthly depreciation of 1,500 lei for the period June 2013 – December 2016

<table>
<thead>
<tr>
<th>1,500</th>
<th>Operating expenses regarding the depreciation of the plant and equipment items</th>
<th>= Depreciation of the plant and equipment items</th>
<th>1,500</th>
</tr>
</thead>
</table>

- the elimination of the accumulated depreciation until 31 December 2016 (43 months)

<table>
<thead>
<tr>
<th>64,500</th>
<th>Depreciation of the plant and equipment items</th>
<th>= Plant and equipment items</th>
<th>64,500</th>
</tr>
</thead>
</table>

- recording the added value found on 31 December 2016

The fair value determined by an independent assessor is 700,000 lei, the net net carrying amount is 655,500 lei (720,000 – 64,500). We note that the fair value is higher than the net carrying amount, resulting in an increase of the asset with 44,500 lei (700,000 – 655,500).

<table>
<thead>
<tr>
<th>44,500</th>
<th>Plant and equipment items</th>
<th>= Revaluation reserves</th>
<th>44,500</th>
</tr>
</thead>
</table>

If on 31 December 2016 the fair value had been 650,000 lei (the fair value less than the net carrying amount), the accounting records would be presented as:

<table>
<thead>
<tr>
<th>64,500</th>
<th>Depreciation of the plant and equipment items</th>
<th>= Plant and equipment items</th>
<th>64,500</th>
</tr>
</thead>
</table>

and

<table>
<thead>
<tr>
<th>5,500</th>
<th>Operating expenses regarding the adjustments for the depreciation of the assets</th>
<th>= Plant and equipment items</th>
<th>5,500</th>
</tr>
</thead>
</table>
Accounting treatment for property, plant and equipment revaluations

As we have already stated, the recognition of the revaluation results of the tangible assets in the accounting can be achieved through the proportional recalculation of both the gross carrying amount of the asset and the depreciation so that the carrying amount of the asset after revaluation should equal its fair value. This method is used when the asset is revaluated by means of an index in order to achieve the replacement cost without the corresponding depreciation.

The aim of our approach being the correct recognition of the revaluation in accounting, we are restricting our presentation to the cycle of records using this method in order not to overload the volume of this paper with a series of calculations that can be done relatively easily once you have a series of information extracted from the evaluation reports.

Essentially, based on the data from the previous example, the accounting cycle is as follows:

- the record of the monthly depreciation

| Operating expenses regarding the depreciation of the plant and equipment items | = | Depreciation of the plant and equipment items |

- the record of the added value found at revaluation

| Plant and equipment items | = | Revaluation reserves |

And

| Revaluation reserves | = | Depreciation of the plant and equipment items |

3. Revaluation reserve treatment

The revaluation surplus of an item of tangible assets that was included in equity may be transferred to the reserves when it was removed from management accounting (scraped, sold, transferred to stocks). There is another possibility: when some of the surplus is directly transferred to reserves, as the asset was used and depreciated. In this case, the amount of the transferred reserve represents the difference between the depreciation based on the fair value and the amount of the depreciation based on the original cost of the asset.

Given the tax treatment of the revaluation reserves, we recommend that entities should opt for the second alternative, that the surplus should be transferred directly to the reserves.

It is good to know that the Romanian accounting legislation does not allow the transfers from the revaluation surplus to be carried through the income statement. We would also like to mention that in IAS 16 - Property, Plant and Equipment, the plus from the revaluation included in the revaluation reserves is transferred to the retained earnings.

In the following example, the revaluation reserve is transferred to the reserves while the asset is depreciated (the second version shown above).

**Example**

On 25 May 2013 an entity purchased production equipment that is 201,600 lei. The asset started to operate in the same month and will depreciate over a period of six years, the depreciation system used being the straight-line depreciation.
We assume that the first revaluation of the production equipment is carried on 31 December 2017, the fair value determined by an independent assessor being of 60,000 lei. We present the accounting records:

- the record of the monthly depreciation of 2,800 lei, from June 2013 to December 2017

| 2,800 | Operating expenses regarding the depreciation of the plant and equipment items = Depreciation of the plant and equipment items 2,800 |

- the elimination of the accumulated depreciation until 31 December 2017 (55 months)

| 154,000 | Depreciation of the plant and equipment items = Plant and equipment items 154,000 |

- the record of the added value found at revaluation

The fair value is 60,000 lei, the net carrying amount is 47,600 lei (201,600 – 154,000), resulting an increase of the asset with 12,400 lei (60,000 – 47,600).

| 12,400 | Plant and equipment items = Revaluation reserves 12,400 |

During the period January 2018 – May 2019, the entity will transfer a part of the surplus to the reserves monthly. The remaining useful life is of 17 months. The recordings done monthly by the entity are:

| 3,529 | Operating expenses regarding the depreciation of the plant and equipment items = Depreciation of the plant and equipment items 3,529 |

And

| 729 | Revaluation reserves = Reserves representing the surplus of the revaluation reserves 729 |

**Presenting the information in the explanatory notes**

In case of the revaluation of the tangible assets, this should be presented in the explanatory notes, together with the revaluated items, the method by which the values presented were calculated as well as the item in case in the income statement or the equity.

Also, the explanatory notes must be shown separately for each item of the balance sheet from the revalued tangible assets, information on their historical cost value and on the amount of the cumulative adjustment value.
Accounting treatment for property, plant and equipment revaluations

Finally, no matter if the amount of the reserves has been modified or not during the year, in the explanatory notes the entities also have to present information on:
- the value of the revaluation reserves at the beginning of the year;
- the revaluation differences transferred to the revaluation reserve during the year;
- the amounts capitalized or otherwise transferred to the revaluation reserves during the year, presenting the nature of any such transfer;
- the value of the revaluation reserve at the end of the year.

4. Conclusions

As an alternative rule to evaluation, entities may proceed to the revaluation of the tangible assets (property, plant and equipment) existing at the end of the year recognizing their results in the accounting.

The revaluation of the tangible assets (property, plant and equipment) is done at the fair value at the date of the balance sheet.

The fair value is determined based on some evaluations usually conducted by qualified professionals in evaluation.

If the fair value of the tangible assets (property, plant and equipment) cannot be determined by reference to an active market, the value of the assets shown in the balance sheet should be its revalued value at the date of the last revaluation minus the cumulated adjustment value.

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Abstract. Romania’s attraction cannot equal, in the new context of globalisation, the other touristic destinations already famous, but by perseveringly and wisely rendering its advantages: the natural landscape and the immaterial cultural patrimony. The natural landscape and the immaterial cultural patrimony may turn into a competitively source by being unique and specific to Romania. The rendering profitable by using methods and models already consecrated may offer us international recognition and the commercial balance in what concerns the travel services. By analysing the evolution of tourism-travel income during 2005-2012 we can witness a certain deficiency in what concerns the travel services. Attempting to foresee events for the 2nd semester of 2013 by using the smoothing exponential model we can witness the same tendency. In this case the strategy at the national, regional and local level requires a certain change and the present article makes some suggestions in the view of promoting and the rendering valuable of the touristic potential of the immaterial cultural patrimony and of the natural landscape.

Keywords: cultural tourism, immaterial cultural patrimony, natural landscape, travel services, touristic potential

THE RENDERING PROFITABLE OF THE IMMATERNAL CULTURAL PATRIMONY THROUGH TOURISM – SOURCE OF ATTRACTION FOR THE FOREIGN VISITORS

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1. Introduction

UNESCO accredits the connection between tourism, culture and development, and OMT has signalled the forthcoming of a more sophisticated tourism, identifying a certain change in the behaviour towards culture and tourism.

G. Niculescu and D. Stegărescu (2010) attempt to draw a portrait of the cultural tourists: they lay the emphasis on experiences, people tend to directly participate; the elderly people, whose number is in continuous growth, manifest the greatest inclination to spend and are interested in destinations such as the historic cities and not in the experience of enjoying luxury hotels. They prefer smaller units of good quality which offer individual services and a certain level of comfort; more and more tourists search for character, style and charm in what concerns the accommodation; the hotels which have been place in historical buildings and use the quality local handicraft wares are expected to become more and more popular.

The growing tendency of specialising amongst the tourists makes the cultural tourism be the segment with the fastest growth in the tourism industry (Jin Huh, 2002).

Saskia Cousin (2006) iswore nuanced and considers that cultural tourism has been promoted in UE as a way of multiplying the contact among its citizens and of discovering what makes them unique and what they have in common. In conclusion, the author shows that the syntagm cultural tourism functions in the political-semantic context of the long-lasting development and cultural diversity.

The Romanian cultural tourism, defined and professionally performed may turn into a competitiveness factor both in the European tourism context and in the worldwide one. The unique character of the Romanian cultural patrimony and especially that of the Romanian immaterial cultural patrimony may attract both foreign and Romanian tourists. The immaterial cultural patrimony, much richer and insufficiently rendered profitable may turn into an inexhaustible resource and may generate long-lasting prosperity and development.

2. The Analysis of the Commercial Balance Concerning the Travel Services

By analysing the commercial balance in June 2005-March 2013 in whatconcerns the net profit of the travel services (graphic no.1), one may notice it was higher in June 2008, and obviously lower in September 2008, reaching a minus (-136 million EUR) – a minimum record being reached lightly recovering in December 2008 and since 2009 up to the present (March 2013). It remained at the minus level, having the tendency, just like in September 2010 (-135 million EUR), September 2011 (-134 million EUR) and in September 2012 (-111 million EUR0) approaching the minimum record reached in September 2008.

The record lowering from September 2008 is mostly due to the economic crisis but also due to the fact that in 2007, havingth possibility of travelling freely in UE, increasing import of travel services has been witnessed; this afact that has been noticed after September 2008, even if in a slower rhythm.

One can easily notice the fact that we did not take advantage of the crisis effects in order to attract more foreign tourists as the global tendency has shown referring to the emergent countries. These countries have attracted more foreign tourists on the background of the crisis and of the maintaining of certain lower prices for the travel services in comparison to developed countries.
The rendering profitable of the immaterial cultural patrimony through tourism

Analysing the credit and the debit of travel services one can notice the fact that during the given period March 2005 – March 2013 (Figure 2) we imported more travel services than we exported even if since March 2009 the export of travel services has acknowledged a slight tendency to growth, it has not succeeded in reaching the commercial balance from this point of view.

Comparing the data from the commercial balance of the years 2005-2011 in what concerns the travel services for Bulgaria, Hungary and Romania and of years 2007-2011 for Serbia (Figure 3) the following may be noticed:

- Out of the four studied countries, Serbia and Romania have shown a deficit of the commercial balance in what concerns the travel services.
The deficit of the commercial balance is much greater for Romania than for Serbia.
- The two countries which have got a surplus of the commercial balance in what concerns the travel services (Bulgaria and Hungary), Bulgaria has got the greater surplus.
- Bulgaria and Hungary have shown a slight diminishing of the commercial balance; there is certain stabilization for Serbia and a slight growth for Romania (both being on the position of deficit in what concerns the commercial balance).

**Source:** BM.

**Figure 3. The Commercial Balance Net – Comparing Bulgaria, Hungary, Serbia and Romania**

From the perspective, Romania is the only country from the ones that have been analyzed which has not succeeded in rendering valuable in an efficient way its resources and in promoting its tourism in order to attract foreign tourists and Romanian ones by its destinations and competitive touristic products.

3. The foreseeing on short term concerning the travel services

The foreseeing for the second quarter, June 2013, has been made by using the exponential smoothing level of RG Brown as it is described by M Gheorghiță (2010):

\[ Y_t \] has been used to signify the chronological series used (March 2010 – March 2013) and \( Y_{t+1}^p \) to signify the foreseen value of the \( Y \) variable.

In concrete applications the Brown model must be initialized. The choice of the leveling coefficient \((\alpha, \beta, \gamma)\) must take into consideration the wished correction for the foreseen values. The initial model is:

\[ Y_{t+1}^p = a_y t + (1 - a) Y_t^p. \]

The chosen values for the levelling coefficient \( \alpha = 0.3; \beta = 0.5; \gamma = 0.1; k_0^p = 1. \)
The rendering profitable of the immaterial cultural patrimony through tourism

Table 1

<table>
<thead>
<tr>
<th>period</th>
<th>t</th>
<th>Credit actual $y_t$</th>
<th>Credit forecast $y_{t+1}^p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>million (EUR)</td>
<td></td>
<td>million (EUR)</td>
<td></td>
</tr>
<tr>
<td>2010 Q. I</td>
<td>1</td>
<td>162</td>
<td>220.23</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>226</td>
<td>229.89</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>257</td>
<td>256.02</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>215</td>
<td>236.32</td>
</tr>
<tr>
<td>2011 Q. I</td>
<td>5</td>
<td>210</td>
<td>223.13</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>245</td>
<td>242.49</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>309</td>
<td>294.92</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>255</td>
<td>275.33</td>
</tr>
<tr>
<td>2012 Q. I</td>
<td>9</td>
<td>226</td>
<td>248.62</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>292</td>
<td>283.03</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>333</td>
<td>326.09</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>291</td>
<td>316.47</td>
</tr>
<tr>
<td>2013 Q. I</td>
<td>13</td>
<td>241</td>
<td>274.1</td>
</tr>
</tbody>
</table>

Source: BM.

For the second quarter 2013 a value has been calculated of 274.1 million EUR ($y_{t+1}^p$), a decrease compared to the given period, namely, 2012.

4. The Accuracy of the Calculated Forseeing

If we consider $\hat{X}_t(k)$ the foreseen value over $k$ periods from the reference moment $t$, the corresponding error to the future moment $(t+k)$ is $e_t(t+k)$. The most used measures of the forseeing error in practice are, according to Bratu (2012 a):

a. Root Mean Squared Error (RMSE)

$$RMSE = \sqrt{\frac{1}{n} \sum_{j=1}^{k} e_i^2(T_0 + j,k)}$$

b. Mean error (ME)

$$ME = \frac{1}{n} \sum_{j=1}^{n} e_i(T_0 + j,k)$$

The value indicator offers important information: if it has a positive value then the actual value of the given variable has been underestimated, which means average values foreseen as being low. A negative value of the indicator shows foreseen values as being too high.

c. Mean absolute error (MAE)

$$MAE = \frac{1}{n} \sum_{j=1}^{n} | e_i(T_0 + j,k) |$$
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For the conceiving of comparisons with naive predictions (based on the random ongoing, which supposes the keeping in present of the value during the past period) U² statistics is being used, according to Bratu (2012 b):

The following signs will be used:

- a. the effective results
- p. the foreseen results
- t. the reference time
- e. error (e = a – p)
- n. the number of time periods

\[
U² = \left( \frac{\sum_{i=1}^{n-1} \frac{(P_{t+1} - a_{t+1})^2}{a_i}}{\sum_{i=1}^{n-1} \frac{(a_{t+1} - a_t)^2}{a_i}} \right)
\]

If \( U² = 1 \) => there are no differences in terms of accuracy between the two foreseeing which are compared.

If \( U² < 1 \) => the foreseeing to be compared has a bigger degree of accuracy than the naive one.

If \( U² > 1 \) => the foreseeing to be compared has a smaller accuracy degree than the naive one.

<table>
<thead>
<tr>
<th>Indicators accuracy</th>
<th>Values indicators accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME</td>
<td>-12.66461538</td>
</tr>
<tr>
<td>MAE</td>
<td>17.81076923</td>
</tr>
<tr>
<td>RMSE</td>
<td>23.26407663</td>
</tr>
<tr>
<td>U²</td>
<td>0.212034017</td>
</tr>
</tbody>
</table>

Source: own calculations.

A strong overestimation of the credit values has been generated by the method used in foreseeing, ME indicator having a negative value. The degree of variation in the series of errors is big enough, RMSE having a superior value even to the other two indicators ME and MAE. Still, analysing the \( U² \) statistics value, one can notice that the already made foreseeing are much better than the naive ones based on a given random model, the value of \( U² \) being sub unitary.

**Conclusions**

OMT, UNESCO and other international organs sustained accredit the cultural tourism development as a component of the long – lasting development.

OMT reports a certain growth from 37% in 1995 to 40% in 2004 of the cultural and international tourism proportion, reaching 375 million international cultural trips until 2009. In what concerns the European tourism, the estimations show that 40% of it is represented by the
cultural tourism. In 2009, on the background of the economic crisis there has been recorded a 5% drop in city trips (usually closely related to cultural tourism), compared with a 20% drop in touring holidays and rural tourism, and a 15% fall in mountain recreation (Richards, 2011). Urban cultural tourism has proved a comeback during the last years.

From this perspective, Romania must concentrate its efforts on the promoting and rendering valuable of the material cultural patrimony resources and especially of the immaterial cultural patrimony which gives the country uniqueness, diversity and competitiveness.

In order to do so, it has to find the necessary experts both for promoting and rendering valuable the immaterial cultural patrimony through tourism, to involve totally in this action and to create a strong national dissemination at the regional, county and local level. These specialists must be formed at the average, superior and proficient level in order to cover the vast domain of promoting and rendering valuable of the immaterial cultural patrimony through tourism.

Cultural tourism and especially the rendering valuable through tourism of the immaterial cultural patrimony represents a market segment of the tourist industry, which can set the commercial balance from the tourist services point of view and even create a surplus through a strategy professionally maintained both on short and long term.

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Abstract. The present paper proposes to identify the main differences between fast-foods and restaurants, the occasions on which the services offered by each of these two types of food service units are used, and also their segments of consumers, from the young people’s perspective. This study was conceived with students from “Transilvania” University in Braşov, and the research method was the ‘focus-group’. The results of the research reveal that the young people prefer to dine at a fast-food, due to its ability to adapt its offer to them, by meeting their nutritional and socializing needs. The restaurant is chosen by the young people for celebrating special events, for business meetings and for other situations, such as dining out with the family, with an older person, with a visitor from another country or with other people whom the young people wish to impress. Although the research method is a qualitative one and cannot be extended to the entire population, the results can be used by the restaurants’ managers to conceive some appropriate strategies for attracting and building the young people’s loyalty.

Keywords: fast-food, restaurant, young people, segment of consumers, focus-group, food service unit.

FAST-FOODS VERSUS RESTAURANTS. AN APPROACH FROM THE YOUNG PEOPLE’S PERSPECTIVE

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1. Introduction

The study of the different aspects of the services offered by restaurants, particularly from the consumer’s perspective, is not recent. Numerous researches were conceived at international level in order to understand the decision process of the food service consumer, to identify the criteria used by consumers when they choose a food service unit, to understand the influence of the social-demographic characteristics upon the consumption behavior, to identify the factors that determine the consumer’s satisfaction etc.

In consumer behavior literature, personal characteristics are one of the major factors determining consumer decision-making and subsequent behaviors (Kim and Chung, 2011). Consumers’ perceptions and evaluations of products are based on information such as intrinsic cues (e.g., products design, performance) and extrinsic cues (e.g., price, prestige), as evidenced in the conducted study (Upadhyay, Singh, and Thomas, 2007).

Kivela, Reece, and Inbakaran (1999) studied the difference in the ratings of restaurant attributes based on the demographic characteristics of the respondents. They argued that determinants in restaurant selection vary across age groups, income levels, and restaurant types. They found the environmental factor as an important choice-determining variable for 25-34-year-olds. Auty (1992) and Bitner (1992) argued that the reason might be the fact that the individuals who fall into this age group tend to look for restaurants that put more emphasis on ambience and atmosphere, because they provide a more suitable social environment for them.

Knutson and Patton (1993) found that older customers are more concerned about their health. Therefore, the quality of food was identified as important. Soriano (2002) found that food quality did not stand out as the most important reason for young customers; however, customers over 60 years of age indicated food quality as the most important attribute determining their satisfaction.

Full-service restaurants are more likely to attract hedonic customers who pay more attention to the environment, whereas fast-service restaurants tend to appeal utilitarian customers who value functional benefits (Kim and Chung, 2011). The younger generation has particularly different habits, lifestyle, and attitudes in comparison to other segments of the population (Upadhyay, Singh, and Thomas, 2007).

In Romania, there are relatively few studies that explore the consumers’ perceptions about fast-foods and/or restaurants, and also their preferences for each of them.

Considering the raising number of the fast-food units and the young people’s preference for them, the present research aims to investigate the differences between fast-foods and restaurants, the occasions on which the services offered by them are used, as well as the characteristic features of the consumers of each of the two types of food service units, all from the young people’s perspective.

2. Methodological aspects of qualitative research

The idea of a research among young people for identifying their opinions regarding the differences between restaurants and fast-foods is based on a previous research, which intended to find the perceptions of restaurant managers from Brașov County regarding the products and services’ quality offered to consumers (Untaru, Ispas et al., 2012). Thus, one of
the problems that the restaurants in Brașov County are confronting with is the difficulty to attract the young people segment.

Consequently, the present paper attempts to investigate the differences between fast-foods and restaurants, the occasion of consuming the services offered by these types of food service units, and also their consumers’ features, from the young people’s perspective. The research method used to attain these purposes was the focus-group. This research method has the advantage of being flexible and efficient, offering to the participants the possibility of expressing their real feelings, discontents, frustrations, and satisfactions about the subject in question (Lefter, 2004).

In order to achieve this purpose, there were formed two focus-groups. The first focus-group included seven subjects, whereas the second one included only six. The subjects consisted of young people aged between 18 and 24. They are all students at the Faculty of Economic Studies and Business Administration at “Transilvania” University in Brașov.

The interviews took place in October 2012, and were later transcribed in order for the content analysis to be carried out. The codification and categorization of the information, as well as the analysis of the frequency of the responses, were done with the help of NVivo 7, a software package that is used in qualitative researches.

In order to maintain the confidentiality of the identity of the fast-foods mentioned in the interview, they were named with the letters X, Y or Z, depending on the fast-food in question.

The main hypotheses we started from in conducting this research are:
1. The fast-food is the young people’s favorite restaurant.
2. The main reason for consuming the services offered by a fast-food is the satisfaction of the nutritional needs.
3. The most important segment of a fast-food’s consumers is represented by the young people.
4. The restaurants are the favorite food service units of people with high incomes.

According to the hypotheses mentioned above, there were established the following objectives:
- To discover the young people’s perceptions about fast-foods and restaurants;
- To detect the occasions of consuming the services offered by fast-foods and restaurants;
- To detect the main features of the consumers of each of these two types of food service units.

Having these objectives in mind, the interview guide was structured on the following three themes:
- Identifying the dimensions that differentiate the fast-foods from restaurants;
- Describing the occasions of consuming the services offered by fast-foods and restaurants;
- Describing the segments of consumers who prefer the fast-food and of those who prefer the restaurant.

The information offered by students during the interview was processed, as we have mentioned earlier, with the help of NVivo 7. The answers were codified, categorized, and then arranged in descending order, according to their frequency in each category.
3. Identification of the dimensions that differentiate the fast-foods from restaurants

From the young people’s point of view, the main differences between fast-foods and restaurants are the following:

- **The menu price.** It is one of the most significant elements that differentiate a fast-food from a restaurant, causing the young people to choose, most of the time, the fast-food.
  
  S13: “The fast-food prices are lower than the restaurant prices.”
  S7: “The [young people’s] income is not high enough for eating at restaurant every day.”

- **The food distinctiveness.** In this case, the young people have brought into discussion the fact that, at a restaurant, the dishes are less popular – the main reason for the young people not to choose them –, but healthier; the participants also mentioned the fact that, in the case of restaurants, the dishes are more varied.
  
  S12: “Depending on the restaurant, the offered dishes can be more or less known by certain people, while a fast-food offers the same dishes everywhere.”
  S13: “[...] restaurants offer salads, food that is prepared on the spot [...], while fast-foods offer only processed foods. A restaurant can offer food for vegetarians, for example food that is baked, not fried.”
  S11: “[At a restaurant] you might find a wider range of dishes.”

- **The atmosphere** in the two types of food service units is, from the young people’s point of view, fundamentally different. The atmosphere that they prefer, however, is the one existent in fast-foods.
  
  S4: “Fast-foods are noisy, while restaurants are comfortable.”
  S1: “The fast-food is more dynamic, it’s full of energy.”

- **The segments of consumers.** From this perspective, the participants remarked that “the dynamic atmosphere” in a fast-food is determined, most of all, by the presence of young people, who have similar behaviors and demands.
  
  S6: “Except for couples, you don’t really see young people in a restaurant. The place for young people is the fast-food.”

- **The preparation and serving time.** When compared to fast-foods, restaurants have the disadvantage that they don’t offer take-away. Moreover, the serving time at a restaurant is considerably longer than at a fast-food.
  
  S7: “In the case of a fast-food, you go there, make the order, and take your meal in less than five minutes, while in the case of a restaurant, you have to wait for the waiter to come, take your order, bring your food and then your bill.”
Fast-foods versus restaurants. An approach from the young people’s perspective

- Other variables, such as: the visibility of the place where the dishes are prepared, the schedule, the time spent by the consumers in these types of food service units, the occasions of consuming the services and some free services.

S4: “It’s a disadvantage that I don’t see how the cook prepares the dishes, because in a restaurant the kitchen is in the back.”
S6: “Restaurants have shorter schedules, whereas fast-foods are open 24/7.”
S13: “You always spend more time in a restaurant than in a fast-food.”
S4: “I’d rather choose the restaurant for a special, formal occasion and the fast-food for a more informal one.”
S11: “Most of the fast-foods nowadays offer free Wi-Fi connection.”

The associations that the young people made to describe the differences between these two types of food service units are very interesting. From their perspective, the fast-food could be associated with one or more of the next aspects: “unhealthy food”, “when you are away from home”, “pleasure”, “a place for socializing”, “modern world”, “lack of time”, “assurance”, “addiction”, “confidence”, “risks (regarding your health)”, “appetite”, “gaining weight”, “unhealthy lifestyle”, “fast serving”, “crowd”. On the other side, the restaurant is for the young people “formal”, “quiet”, “where you can have a conversation”, “cozy”, “elegant”, “comfortable” and “spacious”.

The young people stated that the periodical discounts of the restaurants are familiar to them, but they are not big enough to attract them. Other reasons that the young people brought into discussion in order to motivate their preference for fast-foods are the insufficient promotion of the restaurants’ discounts and the little information they have about the menus of the restaurants. The restaurants’ locations, usually far from crowded areas, are another problem invoked by the young people to motivate their preference for fast-foods.

4. Occasions on which the services offered by fast-foods and restaurants are used

The fast-food is the food service unit that the young people prefer. The occasions on which young people choose a fast-food are connected with their nutritional needs. Fast-foods are preferred by young people due to the advantages that they offer:

- Fast preparation and serving;
- Low prices;
- Convenient location (near the Faculty or work place);
- High visibility of the dishes and the certainty that they can be offered at any moment of the day;
- Opportunity for socialization;
- Possibility of taking home the desired dishes;
- Extended schedule.

Remarkable is the observation made by one subject about the occasion of choosing a fast-food. From his point of view, there are two types of fast-foods in Brașov County, namely: those which offer consistent dishes – preferred by the consumers for satisfying their nutritional needs – and those which are frequented only for the special taste of their dishes.
When the participants were asked to describe the occasions on which they dine at restaurants, they brought into discussion the following situations:

- **Celebrating special events** (anniversaries, weddings, banquets etc.);
- **Discussing important matters** (business meetings);
- **Other situations**, such as: dining out with the family, with an older person, with a visitor from another country (to offer them the opportunity to try the local food) or with other people whom the young people wish to impress. Choosing a restaurant is also motivated by the wish of the young people to make changes in their diets or by the periodical discounts.

From the young people’s perspective, the two types of food service units satisfy different needs. Consequently, in Maslow’s hierarchy of needs, the fast-food satisfies a basic need of the consumers (that is the nutritional need), and the restaurant satisfies the superior ones (self esteem, respect and/or social status).

5. **The segments of consumers who prefer the fast-food and the restaurant**

According to the subjects, the most important segment of consumers of fast-food is represented by the **young people**.

*S12: “I don’t think there are young people who have never dined at a fast-food.”*

Children are, from the young people’s perspective, another segment of consumers of fast-food, because this type of food service unit succeeds in adapting its offers according to their needs.

*S6: “Fast-foods have created special menus for children.”*

Other segments of consumers who prefer to dine at a fast-food rather than at a restaurant are represented by the **adults** and **foreign tourists** who stop by in order to have a coffee and navigate on the Internet. From the young people’s point of view, the foreign tourists usually choose the fast-foods because they are **familiar with these types of food service units**, because they have **other motivations than the gastronomical ones** or due to the fast-food’s **transparency** in presenting its offers and prices.

When the participants were asked to describe the similarities between these segments of consumers (excepting the children), they mentioned their **lack of time**, the **convenient location**, and the **low prices** of fast-foods.

As opposed to the fast-food, the restaurant’s main segments of consumers are, according to the participants, the **adults** and the **elder people**. The main reasons that support their preference for restaurants are: the **habit** of frequenting these types of food service units, the **atmosphere** in restaurants, and the higher probability to meet **similar people**.

Other segments of consumers of the restaurants are, from the subjects’ perspective, the **business men** – who prefer the restaurant due to the favorable atmosphere inside it –, the **people with high income**, the **foreign tourists** – who want to try our local food –, and the **residents who want to try the international food**.

From the young people’s perspective, the consumers who prefer to dine at a restaurant have a “**high social status**”, are “**high-toned**”, have “**higher expectations**” or “**prefer to eat healthy food**”.

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6. Conclusions and future research

The young people prefer to dine at fast-foods because they have succeeded in adapting their offers to their consumers’ needs. The major argument that the young people used to motivate their choice had to do with their nutritional needs. Other dimensions they added to motivate their preference for fast-foods were: the low prices, the atmosphere, the short time required for the preparation and serving of the dishes, the extended schedule, the convenient and central location, the high visibility of the dishes, the opportunity of taking their dishes home and the chance to socialize.

The restaurants are, from the young people’s perspective, chosen for other reasons than those mentioned in the case of fast-foods, namely: to celebrate special events, to discuss important affairs, to dine out with the family or with older people and to impress somebody.

Although the results of the paper are useful for the managers who work in this field – in order to conceive appropriate strategies for attracting and building the young people’s loyalty –, they cannot be extended to the entire population. Therefore, other quantitative researches are imperative in order to identify and measure the dimensions that influence young people’s preferences for different types of restaurants.

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Abstract. The current paper is a conceptual and explorative exercise based on the analysis and comparison of relevant literature and representative studies underlining communication implications in real economical world. The purpose of the article is to clarify the role communication has in companies based on knowledge evolution and how authorities pointed and sustained its significance. It is taken into account the face to face communication, computer mediated communication and their capacity of producing new ideas in companies benefit. Starting from this general background, the present paper explores characteristics and behaviours necessary in knowledge based economy, taking into account the communication and its implication inside the companies. The paper is analysis the effects and implication communication expresses through new technologies and how is affecting people and company environment. Finally it will be taken into account the new perspective communication brings to the world wide economy and which is the trend of latest years investments.

Keywords: face to face communication, computer based communication, knowledge economy, evolution, technology, information.

THE IMPORTANCE OF COMMUNICATION IN KNOWLEDGE BASED ECONOMY

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1. Introduction

Talking is easy, words, expressions and nothing more….but can be language used in innovative communication for business profit? We think it can be used with great success. Communication is a big part of knowledge economy, used in learning organizations and according Evans and Wurster richness is direct proportioned with the EDI percentage companies use in trade process. “Richness refers to the amount of information that can be transferred and its ability in changing human understanding (…) while reach basically refers to the number of people who can exchange information (Evans & Wurster, 2000, p. 27).” So how can we see the communication importance in learning organization development?

2. Background

On a general view, a revolution appears as a “fundamental change in the way of thinking about or visualizing something: a change of paradigm (Merriam-Webster Dictionary, 2013)”. The latest 50 years business environment and companies have evolved and nowadays cannot be managed exclusively through traditional ways. If we count information as a raw material for managerial decisions, leaders who interpret and coordinate it in order to take the best decision can foresee a trillion of potential decision based on a single source. Can be seen the multiple projections as a delivering point for a good decision or is just stress maker? Is information good or bad, how can it be interpreted? Which would be the ration when information became useful or dangerous? Which are the best way to use the information and through which channels? All these are important question to answer in order to perceive the communication importance in knowledge based economy.

If is to count the 1996 Reuters study on good information strategy with analysis on information, spreading channels, source and how became a resource, we will receive a ten steps recipe with good strategic solving. Would this be enough?

In a functional learning organization the management and the employees together realize the importance of information as resource, its leading role in developing activities and knowledge, finally obtaining structural modifications on company different levels. It is to be taken into account the adaptive learning, the learning of change and learning to learn collective processes (Nicolescu, 2005).

New information technologies are proven to contribute in an essential manner to economic overflow by promoting communications both within organizations and with customers, suppliers and business partners. Along this trend business people find different ways to intensify the demands by using other types of technologies in their products and increasing number of people capable to process data by growing their knowledge and performance. Leaner, meaner management practices are also squeezing out time for planning ways to deal with information overload.

3. Studies and boundaries

The increasing standardization of communication technology, and more specifically its use, is changing the quantity, quality and means of production and distribution of information. This raises substantial questions for the theoretical understanding of organizations, since information is at the core of co-ordination within organizations (Coombs et al., 1992).
The importance of communication in knowledge based economy

With an increased number of communication technologies available and the expanded complexity within organizations, their management becomes an increasingly difficult task. Managers are faced with a number of obstacles to be overcome and besides strategy they should learn and take into account the new communication appearing technologies (Büchel, 2001).

 Reuters 1996 research was revolutionary when went public because its complex analysis and capacity of application in business. It is shown that the most challenging issue existing nowadays in business is the increasing amount of information this tending to create difficulties for handling and using the best way. Taking into account the computer and new technologies applications, the existing problems tend to be solved, but in short time old issues will be replaced by new ones created by the information storage, time allocated to the observation and analysis or another perspective over the business. In the end of the case study was considered that a good strategy is the one based on knowledge but used along the “traditional methods information (Dying for information, 1996).”

 United Nations Economic and Social Council takes into account the aggressive increase of knowledge and ongoing revolution in information, communication considering its source as marked particularly by the rapid growth of the internet and wireless communication. The EU considered that those technologies with an extensive economic impact have created a regional and world network economy that facilitates the further integration of goods and services in all regions. Reductions in information and transaction costs encourage businesses to adopt more competitive production, sourcing and marketing strategies. Importantly, the emerging knowledge economy offers unparalleled opportunities for developing countries to catch up with more developed countries on technology development. Given the improved access to information and knowledge and the opportunity to become a part of the regional supply chain, those countries are now better able to leapfrog some stages of development of technologies and knowledge-intensive industries (CMG, 2007).

 Current world and Romanian laws (64/1991) shows that inventions brevetting have twenty years of life living dedicated to the author exploitation. The limited time access to your own invention is not a limitation tending to restrict the creator rights but prove that world organization and governs realized the information importance to the world heritage and negative effects if not generalized and applied worldwide.

 One of the studies presented by Jaffe and Trajtenberg demonstrates that in many of economy and social sectors the introduced technology and communication techniques changed over the years the creative destruction factor. On the analysis it is shown the creativity is affected by the changing firm composition in an unbalanced panel (Jaffe and Trajtenberg, 2002). One of their conclusions were referring to cross-country citation patterns witch suggests that more thought needs to be given to how to think about the rate of invention, the rate of consumption growth, and the stock of public knowledge in an open economy. It was also suggested that an organizing framework for empirical research on the contribution of industrial innovation to aggregate growth believing that this framework offers many paths for fruitful future work. Finally, a very important conclusion was taken considering the empirical parameter that estimates the observed decline in the productivity of research has implications for the innovation rate, the growth rate, and the value of new ideas that are all roughly borne out. “The model simulation also emphasizes the importance of the apparently rapid diffusion rate of knowledge. The fact that knowledge diffuses rapidly prevented what could otherwise have been an even greater productivity slowdown in the 1970s and early 1980s (Jaffe and Trajtenberg, 2002, p. 149).”
The presented facts and studies show that even if the ongoing increasingly amount of information created complains and increase the existing high levels of stress, the process cannot be diminished or shout down most of all because of the disastrous effects. Also it was showed that companies do not show a high level of concerns for employees increased level of stress considering that dealing with information and various communication technologies such as fax, voice mail or electronic mail (e-mail) are part of usual work and adapting work character. On the one hand, managers feel that they cannot operate efficiently without high levels of information, even if the heavy load of often irrelevant information decreases their efficiency and slows down decision-making. This apparent contradiction has often been referred to as the ‘productivity paradox’ (Pinsonneault and Rivard, 1998). “Given the enormous promise of IT to usher in "the biggest technological revolution men have known" (Snow, 1966), disillusionment and even frustration with the technology is increasingly evident in statements like “No, computers do not boost productivity, at least not most of the time” (Economist, 1990), (Brynjolfsson, 1993).”

Buchel presents a productivity crisis report prepared by Ernst & Young showing managers faces with a number of obstacles to be overcome. The report mentions the effects of an increasing range of communication technologies on organization. Taking into account the report it was shown that more than 30% of questioned managers use an enormous amount of unsolicited information within all departments but also complain about huge data received but consider it necessary to perform tasks effectively. In managers’ opinion the cause of overload information is part the internet, part the collected information within the company (as a justification for position) with huge costs for the business (84% are forced to collect information to stay competitive), but being distracted from their main job responsibilities. According to the report, organizations are encountering a productivity crisis as a result of information overload (DeLong, 1995).

The information and technology were meant to decrease uncertainty and bring inside the production chain more clarity and productivity. Instead, because of the lack of methods in handling the increasing amount of information and sources of reception, new technologies creates confusion, slow response in production and in decision making process with communication bottlenecks that increase cycle time and costs. As every change process, the technology input in production and business communication can create a defensive behaviour both from management but also from employees’ side bringing negative feelings and lack of adaptability. Anyway there are positive impacts of new communication technology on organizations on which we can count: increasingly favourable economics and ease of use, capability of handling numeric, text, image and audio data, greatly expanded user community, horizontally extended information flows, removal of geographic and temporal (time zone) barriers, capability of embedding intelligence within applications and capability of supporting informal and global information processing tasks as well as formal, local tasks (Zmud, 1990, p. 108, Büchel, 2001).

In Coombs opinion although the directional impact of new communication technology within organizations have many improvement to make, information processing activities of organizational members are changing, since access to new technologies is leading to a change in behaviour and contributes to the changing character of organizations. According to Casson (1994), the extent to which a productive task involving the knowledge of several individuals has decisiveness features and the cost at which knowledge can be communicated help to explain the allocation of decision rights. Of course this idea might bring application in productivity chain adaptation (through prices or/and technologies) to market volatility with a
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potential high adaptability model. If we take into account both prices and technologies, information about external market is decisive in order to be taken the right decision. Now the question is if the access to the right information and through the proper filters is the concern of a single manager that is having the ultimate decision or not. Under the precise circumstances the cost of the right information is to be taken into account. In contrast, extensive information-sharing is only necessary if each party holds information which is highly likely to be decisive or if the costs of not making the correct decision if lacking some of the tacit information are high. In that case, knowledge transfer and delegation of decision rights are likely to characterize the organization. (Foss, 2005)

Anyway, even the difficulties and barriers appear inside the business, the innovation process cannot be economically ignored when besides the hesitations and human adaptation the financial results are huge. One of the latest reports presented by Ernst & Young shows that technology economy is one of the driven part of world development, involving capital boost from non technology company too helping them to adapt “(Technology transaction volume involving non-technology buyers grew 30% in 2012 to 12% of all global technology M&A (342 deals), while the disclosed value of deals with non-technology buyers grew to 10% of 2012 aggregate value, from 7% in 2011), (E&Y, 2012).” We can bring the essential through Joe Steger conclusion “the long-term outlook for technology M&A remains strong, because technology and non technology industries both have an ongoing need to adapt to disruptive technology innovation, (E&Y, 2012).”

The complexity of information and its implication in different areas of economic and social life makes its development impossible to separate from the world trend and even if the higher costs of its application is part and must be part of our inner professional and personal development.

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