

„Do not fear to be eccentric in opinion,
for every opinion now accepted was once
eccentric.” Bertrand Russell



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Space and virtuality: new characteristics of inequalities in the information society and economy

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Abstract. *Recently it is becoming increasingly important to understand the role of information and communication technology factors in shaping social and economic differences. Theoretical as well as practical experiences of analyses confirmed that spatial processes of the diffusion of information and communication technologies (ICTs) largely influenced the economy and society of the 21st century. In the last couple of decades ICT became an integral part of our everyday life, with lots of effects on social and economic processes, but we may experience other motives of inequalities today as they were in the past, or we may at least find some new characteristics of inequalities in addition to the existing ones.*

Basically inequalities are appearing between social groups in dimensions of accessing information. In the background as reasons we could name qualification, age, gender, income and many other factors of differences, and last but not least geography as an important motive. Therefore the first aim of this paper is to emphasize among the complex factors of inequalities the increasing and altering role of space in information age disparities, when speaking about digital access possibilities of different regions and locations. On the other hand, since infrastructure development policies have recognized the necessity of ICT development, an increasing number of people have become able to access the new information channels, resulting that accessibility could now be treated as a background problem. In contrast with accessibility differences, recently a new type of disparity emerges: the differences between users in the quality of usage. This secondary disparity takes place in the virtual world. Therefore the second aim of this paper is to reveal what new elements of inequalities are present in virtual space in connection with usage differences, and how it changed traditional spatial disparities. By analyzing data of Hungarian examples, this paper attempts to make a distinction between first and second order spatial inequalities.

Keywords: ICT, information society, information economy, virtual space, regional inequalities, Hungary

JEL Codes: O18, O30, R12

1. Introduction

When speaking about modern age inequalities a growing group of factors can be forcefully emphasized among social and economic processes, which cannot be omitted in disparity researches. At the beginning of the 21st century alongside with traditional factors of competitiveness some new ones seem to emerge, which have radical effects on inequalities. Since social processes in the background of the nowadays very popular phrase of information society are discovered in fact recently, there are more and more practical experiences confirming that processes affecting regional differences are also showing new characteristics. By the

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appearance of the new innovations of information and communication technologies (ICTs) a transformation process has started, which has changed our opinion on social differences or economic advantages and disadvantages. Since recognising the growing importance of the notion of information society, modern social sciences have certainly the task to discover and evaluate the main characteristics of changes induced by the information age. Actually there is an increasing demand on clarifying what reasons are in the background of disparities. Among the influencing factors of the information inequalities both economic and social factors could be mentioned, and last but not least an increasing role is believed to be played by space (geography) as well. The explanation of the function of geography in information inequalities by the clarification of regional disparities and virtual space differences could serve the better understanding of recent days' altering processes, thus we may expect better policy solutions on developing ICT awareness and reducing digital inequalities.

Why space and virtuality should be stressfully emphasized? Why is it important to deal with spatial questions in a world, where information – that are the key factors of social and economic development – are available theoretically everywhere? To be precise, we only think that information is freely accessible for everyone and at all places of the globe. It was many times proved that the role of geographical space could be treated as a borderless and friction free world [1] [2] only if we look on the topic as a Utopian thing [3]. We could only theoretically state that ensured by new information and communication technologies the everyday troubles originated from spatiality could disappear, namely the ardently wished dream, the overcoming on space may become reality. Empiric results on the other hand still prove that geography matters today as well [4]. This concept realised that previous geographical principles are also standing their ground in recent new environment. It is important that possibilities of information communication network connections and infrastructural grounds of bandwidth, which determine the speed of communication connections, are still unequally distributed in space. This new form of communication is dependent on real world's spatial bounds, on geographical position of access points, materiality of cables, as well as on other infrastructural, social and economic influences outside the world of wires.

2. Theoretical considerations on principal factors of ICT inequalities

The research of ICT-based inequalities despite the novelty of this term is already not unknown in circles of national and international researchers. Basic works of Castells [5][6][7], Norris [8] or van Dijk [9] formulated many concepts on inequalities of the information society. Also regional aspects of this topic became widely analysed [10][11], however it has still a lot of questions to be answered, especially in relation with recent policy making and ICT management. Just to mention some, it is important to know how regions or localities differ from each other and what solutions are proper to manage and to develop the information society of the regions or specific locations.

When speaking about regional inequalities in an information society environment, new and somewhat complex definitions appear in scientific and policy documentation. Digital divide or sharply saying the digital gap is the expression of the researchers of information society on describing how specific the inequalities are in this environment. Digital divide is a multidimensional phenomenon with global divide, which reflects to the divergence of internet access between industrialised and developing societies, social divide, which concerns the gap between information rich and poor, and democratic divide, which signifies the difference between those who do, and who do not use the toolset of digital resources to engage, mobilize and participate in public life [8]. In the background of ICT-based differences there are (also) general social distinctions, namely income, education, gender or age differences of the population [12]. We should note that

digital divide cumulatively foster existing social inequalities, therefore in many senses this phenomenon arises not just in information society. According to definitions of the OECD the main feature of digital divide is the difference of accessibility, which exists among individuals, households, economic and geographical regions, and which is determined by different variables of economy and society [13].

According to van Dijk [9] there are four major dimensions or phases of digital accessibility, which should be taken into account when trying to create a complex picture of information society development. Additionally we may assume that all can be in relation with different spatial consequences. Digital accessibility is firstly depending on the internal willingness of using ICT tools, placing motivational accessibility as the first factor of inequalities. Secondly material or physical accessibility is mentioned as widely known digital inequality reason. The third one is the accessibility originated from different digital skills (operational, informational and strategic), while the last one is in connection with the so-called usage accessibility, which refers to the diversity of applications and the habits of usage.

Theoretical researchers explain the altering role of the influencing effects of factors related to inequalities of information society mostly by the assistance of diffusion models (e.g. [14][15]), primarily starting from those inequalities are basically determined by the adaptation level of ICT. Social and spatial diffusion in time is characterised by an “S” curve, which shows a time-lagged shape depending on the development level of the analysed social group. As a result of later adaptation certain social groups (peripheral regions) are becoming relatively lagged behind, which can be realised in social and spatial inequalities. In phases of the adaptation process different types of inequalities can be discovered. In early adaptation phase, when only few applies ICT, differences can be seen in accessibility, in the phase of diffusion differences are between users and non-users, while in the phase of saturation differences in quality can be emphasised [14]. As a result, ICT-based inequalities can be more or less measured by the society’s adaptation level; this however does not, or just indirectly takes into consideration components like information economy.

Inequalities of the application of information and communication technologies in function of the general development level of the economy and society can be described also in a complex way. Since the level of development has a significant multivariable character, numbers of social and economic factors should be taken into account. The resulted picture reflects both regional structure of information society development and a new dimension of socio-economic inequalities. The position in information economy and society has a sensible importance in regional competitiveness, therefore it can be interpreted also as a new factor of regional inequalities.

The inequality analyses of the predominantly social terms of development and the rather economic phrases of competitiveness are searching the answer whether new technologies are reproducing former regional structure of the economy, and fostering differences of competitiveness between regions, or rather shaping up new patterns of spatial structure. It was already clear at the beginning of the 1990s that differences in development are partially consequences of diverse reactions on the challenges of the information age, but not independently from the starting position of the local economy, infrastructure, or social structure and adaptivity. On the other hand at the beginning of the decade it was believed that Internet and the communication revolution may liberate economy from bounds of geography, since ICT can easily bridge physical distances and can defeat geographical barriers. In spite of disappearance of inequalities, however, the concentration of ICT and high-tech industries and the emergence of technological clusters showed the opposite processes. In these cases namely ICT contributes to the increase of competitiveness of cities, metropolitan areas and advanced regions, which stabilised former inequalities.

In differences of economic competitiveness beside inherited inequalities new mechanisms appeared significantly as well. ICTs in global economic processes reevaluated the factors of labour market by various solutions of distant working, or by placing administrative jobs (back offices) to other countries, or simply by the solutions of lease-work based upon the usage of information technologies. In the new information economy these regions and employees are sometimes called “peripheral workers” in contrast with the central regions’ developed “core labour force”. Lease-workers of peripheral regions are working only in routine distant jobs, and while they often use modern technologies, these people are not in the position to significantly alter their network jobs. Therefore certain regions become centres of development, while others are left out of this opportunity. Making distinctions between central and peripheral regions can be explained by many other economic and social reasons as well, therefore a better way of selecting prosperous or lagging behind areas is the multivariable approach.

Inequalities of the information age are often explained by general human factors, within those also geography-related ones are usually mentioned. The international World Internet Project survey, which was carried out annually in many countries, also reflected on the main diversity topics to be analysed [16]. Among the mentioned factors of inequalities the main ones are qualification, age, gender, ethnicity and income differences, but additionally urban-rural and regional differences were also recognized as decisive elements. According to this the role of space in differences is worth to be described in details not only theoretically but empirically as well.

3. Regional inequality characteristics: the first order disparities of information society and economy

Based on the above- mentioned theoretical considerations the role of spatial factors in inequalities can be divided into two groups. The first one covers factors which are primarily influencing the chance of accessing information. Basically those are measured by accessibility indicators and by the built up level of infrastructural circumstances. On the other hand a second group of factors could be defined, which in fact rely on the state of the first group of factors, but are exerting disparity processes on their own as well. The second group consists of indicators of usage habits both qualitatively and quantitatively. It could also be stated that while the first group of factors are basically connected to infrastructure diffusion in geographical space, the second one takes place basically in virtual space. Therefore it is right if we formulate two kinds of inequalities: the first order disparities of the information society and economy, those are regional inequalities, and the second order disparities of the information society and economy, those are inequalities in virtual space.

By the application of regional science’s definition of external spaces, in the context of information economy and society only the space could be named external, which definitely had the momentum of localisation or the attachment to geographical (physical) space. The obvious localisation is made possible on the one hand by assigning data to traditional spatial units, settlements, municipalities or regions, on the other hand by spatial delineation of material objects with known geographical positions. All the formations that could be identified along these cross-sections are possible to be visualised in physical space, and herewith form the specific external space of information society.

Cable networks of information transference are representing the specific at the same time significantly important material fundamentals of the communication infrastructure that is forming the technical system of conditions of the information society. Actually the most important “public utility” of the information society,

the cable system of information transmission plays the main role in the infrastructure-centred version of the external space of the information economy and society.

Concerning regional differences, the several times mentioned accessibility dimension of digital divide in many senses was shaped as a consequence of infrastructural inequalities based on geography. Regional level of built up infrastructure as well as distance from access points of networks is usually more unfavourable in geographically peripheral places. Accessibility is though a central category of the geography of information society. It worsens the chance of peripheries since the deployment of technical systems as the “soul” of network society is defined by regularities of economy (it is worth or not), hence infrastructure differentiates society and space also on its own. Centre-periphery relations live further in urban-rural differences, additionally inequalities are defined along city-hierarchy as a result of that nodes of information and communication networks are to be found basically in urban spaces, and the density of connecting services and activities is also the highest at these locations.

To prove that, empirical statistical experiments were carried out by collecting regionally detailed data on information society development. As a starting point we analysed the existing methodology to find the best measures of regional inequalities. Although there are many internationally well- known attempts to measure ICT-based regional inequalities or at least the level of information society development (see e.g. [17]), the formulated methods cannot be implemented one in one for all kind of regional analysis. The major problem is that international indices take into account variables, which are possible to be collected on country levels, but are rarely available for smaller regional units. The lack of territorially detailed data (basically due to the lack of small scale data collection) resulted that a large number of indicators should be left out from analysis, or alternative solutions should be found. That is why our calculation – represented in the followings – tried to find the best selection of variables in relation with information society development.

To represent first order disparities, namely the ICT-infrastructure based regional disparities within Hungary microregional (LAU-1) level data were collected for 174 spatial units. The first dataset was formulated by ICT-infrastructure related indicators, which represent the accessibility of information. Data were provided by the Hungarian Central Statistical Office and by surveys of GKIE.NET (an ICT research company in Hungary). As a comparison of changes in time the dataset was created for an initial year (2003) and a final year (2010) depending on data availability. The final dataset for measuring first order disparities comprehends the following indicators:

- Number of personal computers in households per 1000 people (Source: GKIE.NET)
- Number of mobile phone subscriptions per 1000 people (Source: GKIE.NET)
- Number of telephone main lines and ISDN lines per 1000 people (Source: HCSO)
- Number of cable TV subscriptions per 1000 people (Source: HCSO)

By the application of microregional data firstly we tried to reveal general inequality measures in Hungary. The simple level of weighted relative standard deviation was determined for all indicators and for all years.

Table. 1: Microregional scale inequalities of ICT-infrastructure indicators in Hungary

Indicators	Weighted relative standard deviation	
	without Budapest	with Budapest
PCs in households (2003)	26,2	27,9
PCs in households (2010)	5,0	8,0
Mobile phone subscriptions (2003)	4,6	7,0
Mobile phone subscriptions (2010)	3,2	5,4
Telephone and ISDN lines (2003)	16,4	14,1
Telephone and ISDN lines (2010)	18,4	17,5
Cable TV subscriptions (2003)	35,0	42,1
Cable TV subscriptions (2010)	24,1	28,2

Weighted relative standard deviation values represent comparable regional inequality indicators, where higher values refer to larger inequalities and lower values to much equal spatial character (Table 1.). Since many prior examinations proved that Budapest is largely different from other areas of the country, we made calculations also by excluding the capital city of Hungary. According to our results this was a good idea, since inequalities among microregions out of Budapest are much smaller than including this city (only the not so modern indicator of telephone and ISDN lines has not reflected the exceptional role of Budapest). It additionally confirms the hypothesis that urban and central areas (that is in this sense represented by Budapest) have a large differentiating role in most of the infrastructure disparities.

For testing the relevance of urban-rural and regional differences further analysis of variance could have been carried out. In the tests our key questions were whether there existed significant differences between urban and rural microregions, and between regions (measured on NUTS2 level), or differences were rather measurable within the group of urban, rural or definite regional units. The significance of urban-rural distinction and NUTS2 groupings of the 174 microregions were tested for all ICT-infrastructure indicators and for all years by the application of one-way ANOVA analysis.

The results show that there are significant differences between urban and rural groups of microregions in all factors of the analysis (Table 2.). This could be also interpreted as urban-rural disparity is a relevant factor in first order ICT differences. The additional Levene statistic for testing the homogeneity of variance is, however, only acceptable for the indicator of mobile phone subscriptions and for the telephone and cable TV variables in selected years, meaning that these are the indicators, where standard deviations within the testing groups are proved to be identical, which is desirable. In other cases this could only be assumed. When comparing the results by NUTS2 groupings the relevance of regional distinction was also confirmed except for PCs in households (2010). The results were showing significant regional grouping effects. Also the Levene tests show that the differences among the 7 NUTS2 units of the country are differing from the disparities within the regional units and the results are stable or significant except for the PC indicators.

Table. 2: One-way ANOVA results for testing the relevance of urban-rural and NUTS2 groupings of ICT-infrastructure indicators in Hungary

Indicators	Urban-rural groupings			NUTS2 groupings		
	F	Sig.	Levene Statistic sig.	F	Sig.	Levene Statistic sig.
PCs in households (2003)	15,791	,000	,000	9,675	,000	,003
PCs in households (2010)	49,825	,000	,000	2,091	,057	,000
Mobile phone subscriptions (2003)	80,755	,000	,884	15,205	,000	,098
Mobile phone subscriptions (2010)	87,222	,000	,994	21,673	,000	,358
Telephone and ISDN lines (2003)	15,008	,000	,061	6,273	,000	,236
Telephone and ISDN lines (2010)	28,434	,000	,007	6,161	,000	,801
Cable TV subscriptions (2003)	23,519	,000	,004	7,026	,000	,078
Cable TV subscriptions (2010)	39,346	,000	,984	6,293	,000	,045

To sum up the outcomes of the calculations there are measurable regional inequalities in ICT accessibility in Hungary, which are also somewhat changing in time, but on the other hand also stable geographical motives could be noted. The tests confirmed that one of the most significant characteristic of disparities is the difference between urban and rural areas and the difference between Budapest and the rest of the country.

4. Socio-economic inequalities in the virtual space: the second order disparities

As by lots of social phenomena, in the case of information society we can often stumble upon social components, having system of connections or relations to each other showing spatial characteristics on their own. Theoretically these internal spaces of the society cannot be geographically localised at all. The new type internal spaces of information society offer huge volume of new experiences essentially originated from the simple formula that if it is really spoken about space, then geographical terms have their alternatives also in this environment. Virtual space or cyberspace is perhaps the best expression in professional circles on what could be named as specific inner space of the information society. One could have the opinion that cyberspace is only one of the appearing forms of inner spaces of the information society, namely also further inner spaces exist, however, all the other variants have some kind of a motive, which is in relation with basic terms and definitions of cyberspace, in other words only differences of denomination could appear. As a result of the information societal transformation, or to be more precise through the diffusion of new technical achievements – within that primarily the information networks – the new spatiality that emerged is sometimes also respected by the term of network space (e.g. [18]), or other times mentioned as information space [19]. The altered sense of space is also immanent of this expression, while unlike virtual or cyber formulas, this phrasing emphasizes or at least suggests another element of new spatiality: the changes arisen from information management.

Concerning its character cyberspace is quite divers and complex. This space could be characterised as some kind of a conceptual space of the flow of information and communication, which space came to

existence through elemental combination of the digital world's hardware materiality, the software of computers, the telecommunication networks and human mind. Virtual space is not technology or infrastructure, but rather a medium, in which complex convergence of computers, communication and people seems to come true [20]. Cyberspace itself cannot be touched or seen, however certain tools make it possible (e.g. telephones or internet browsers). Cyberspace is real virtual, namely invisible creation to which at the same time real material consequences are connecting (e.g. commerce of real goods in e-commerce solutions of virtual space).

Concepts of defining cyberspace as a medium perceive only functional content of virtual space, and do not really take its social and economic influences into consideration. Namely fundamental character of cyberspace is that it has social origin as a whole. A social demand led to its birth, and the technical improvement of socio-economic development made its physical frames, in which man placed his consciousness with that becoming part also of the virtual space.

Spatial relations that emerged through interlacing of individual computers are reflecting spatial characteristics of the real world a specific way. In this sense cyberspace makes up space matching relativistic theories with ordered side-by-side position of spatial connections as spatial components. Absolutistic theories of spatial science on the contrary, or in line with this are on the opinion that cyberspace is the ether, which takes up and fills out spheres inside and in between computers [21]. Absolutistic space theory is also supported by the experience that users of virtual space may enter the sphere by logging in from the outside, consequently expounding this world as a separate entity.

Space of flows – as Castells [5] formulated – is fluid and offers wide moving possibilities for enterprises, which hereby may become independent of real physical space [22]. The network organisation, which typifies information and communication interactions of the economy and society, formed the characteristic structure of virtual space in the form devoid of traditional spatial constraints.

The diversity of interpretations or conceptual approaches of cyberspace obviously originates from the fact that representatives of theories talk about not always the same cyberspace. Eventually it is evident that a complex phenomenon like information society has a rather diverse appearance of inner space. Therefore, this inner space of information society is formed by spaces – in the plural – of the virtual world.

The changing character of ICT tools gives us the chance to explore new characteristics of inequalities in the information society and economy time by time. While – as previously mentioned – the technological innovations are always and continuously diffusing in time, the role of primer ICT background differences in regional inequalities is declining, resulting that from first order regional disparities we are stepping towards the increasing importance of second order virtual space disparities. Since infrastructure development policies have recognized the necessity of ICT development, an increasing number of people have become able to access the new information channels, resulting that accessibility could now be treated as a background problem. In contrast with accessibility differences, recently a new type of disparity emerges: the differences between users in the quality of usage.

This can also be proved by empirical experiments, therefore further statistical data were collected on the level of Hungarian microregions. This time the created dataset was focusing on indicators, which could better reflect usage habits of local people, companies and institutions. Data were provided by surveys of GKIE NET (an ICT research company in Hungary). The final dataset for measuring second order disparities comprehends the following indicators:

- Average level of e-administration (Source: calculations based on GKIE NET)
- Number of internet users per 1000 people (Source: GKIE NET)
- Share of companies with websites (Source: GKIE NET)

- Number of internet subscriptions per 1000 people (Source: GKIeNET)

The next calculation tried to measure usage inequalities represented again by weighted relative standard deviation values (Table 3.). According to our research outcomes the datasets including Budapest in most cases reflected higher inequality levels than data without Budapest. The result confirmed again that central areas play an important role in disparities. Additionally among the weighted relative standard deviation results extraordinary large values could be observed by the indicators of the average level of e-administration. That is because there are still a lot of microregions, where there are no registered settlements with e-administration activities. On the other hand huge steps were made in order to develop e-administration solutions in cities and villages and to enhance inclusion in the information society, which was reflected in the large reduction of the weighted relative standard deviation index. It is easily observable that all indicators of information usage have gone through perceptible equalization that is the consequence of diffusion of cyberspace technologies among people.

Table. 3: Microregional scale inequalities of information usage indicators in Hungary

Indicators	Weighted relative standard deviation	
	without Budapest	with Budapest
Avg. level of e-administration (2003)	900,4	912,1
Avg. level of e-administration (2010)	288,1	290,1
Internet users (2003)	21,8	17,9
Internet users (2010)	10,1	13,4
Share of company websites (2003)	17,8	27,7
Share of company websites (2010)	9,4	11,1
Internet subscriptions (2003)	18,0	26,6
Internet subscriptions (2010)	9,4	12,3

If we look on the ANOVA table of information usage indicators, again the significance of the F-statistic results could be observed at all indicators and this time in all years. This confirms our assumption that urban and rural groups of microregions have significantly different values in information usage indicators, and this is also the case, when we are speaking about NUTS2 groupings of microregions. According to our Levene tests, the outcomes of the analysis are fully acceptable only if Levene Statistic significance values are over 0.050, which is the case of many of the variables, while others are only forming assumptions. All in all the vast majority of the observed phenomena have measurable between group inequalities rather than within group disparities.

Table. 4: One-way ANOVA results for testing the relevance of urban-rural and NUTS2 groupings of information usage indicators in Hungary

Indicators	Urban-rural groupings			NUTS2 groupings		
	F	Sig.	Levene Statistic sig.	F	Sig.	Levene Statistic sig.
Avg. level of e-administration (2003)	15,572	,000	,002	11,418	,000	,000
Avg. level of e-administration (2010)	21,200	,000	,313	25,532	,000	,134
Internet users (2003)	86,238	,000	,091	8,159	,000	,204
Internet users (2010)	116,714	,000	,006	11,187	,000	,788
Share of company websites (2003)	28,663	,000	,035	7,227	,000	,111
Share of company websites (2010)	12,174	,001	,006	10,711	,000	,000
Internet subscriptions (2003)	23,397	,000	,674	20,154	,000	,137
Internet subscriptions (2010)	83,174	,000	,198	19,647	,000	,092

5. Conclusion

Although spatial disparities of the information age are first of all determined by externalities of ICT infrastructure, it seems that those have an inheritable effect on virtual space inequalities, namely on user activities as well. While there are obvious inequalities in the so-called external spaces, the importance of inner space (virtual space) disparities are also remarkable. Measurable structural elements of regional disparities are therefore the differences between centres and peripheries, as well as the differences between cities and villages, additionally in the digitally divided world of cyberspace new social gaps between “people inside” and “people outside” are remarkable, which were tested through proxy indicators of information usage.

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Religious values, secular education and development: empirical evidence from some Latin American countries

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Abstract. *Religion as a component of family background may transmit values that positively affect children's educational achievements. Nevertheless, in its conservative dimension religion hampers children's self-determination and may lead them not to invest in higher education. Notably religion may adapt to the cultural changes triggered by economic development and modernization, which influences the prevailing effect of religion on education. These aspects are investigated through an overlapping generations model with human capital. The hypotheses from the model are tested with probit regression using the data from some Latin American countries. The results seem to support the role of development as a force driving the process of cultural change, which can promote children's educational achievement.*

Keywords: religion, development, human capital.

JEL codes: J24, O10, Z1.

1. Introduction

The role of family background in the acquisition of education by children has been widely acknowledged in the literature. Some scholars identify family background with parents' human capital, which may help children to acquire education, their positive educational expectations and self-confidence (Becker and Tomes, 1986, Coleman, 1988, Checchi, Ichino, Rustichini, 1999). Interestingly family may also transmit values that shape children's behavior at school. Among these values an important role is played by religious values. On the one hand, they can help the learning process of children and strengthen the acquisition of secular education. On the other hand, these values may hinder children's educational performance as they may conflict with secular education. Specifically, as to the former aspect, the religion in which one has been raised can embody values promoting hard work following Weber's argument, achievement orientations (Mueller, 1980), a sense of discipline and of responsibility (Fan, 2008) and influences students' positive educational expectations and self-confidence (Lehrer, 2005). Yet religious values and secular education may also be conflicting depending on the content of education and the underlying

approach to knowledge. Conservative religions may be adverse to secular education as the latter may transmit values inspired to humanism and to scientific scrutiny against an authoritarian approach to knowledge. This contrast may induce very religious parents to limit the aspirations and the choice set of their children in terms of higher education, by reducing financial support, shaping their preferences and making difficult studying (Darnell, Shekart, 1997, 1999). It is worth stressing that some religions may hamper higher educational achievements as they promote fatalism and conformity rather than self-determination whereas others like Jewish religion promote the attainment of a high socio-economic status through its positive emphasis on educational performance (Mueller, 1980).

Importantly, the antagonism between religion and education can be responsive to the stage of economic development and modernization as religion may be a force reactive to economic processes (Vallier, 1970) and become less conservative with development. As to the relationship between development, on the one hand, and cultural and religious values on the other, Inglehart and Baker (2000) test the modernization theory according to which industrialization and economic development lead to predictable systems of cultural values. They show that the transition from preindustrial and agrarian societies to industrial societies contributes to the shift from traditional values and orientation towards materialist, rational and secular values. Notably, tradition is characterized by social conformity and a deferent attitude towards parental and religious authority. In particular, religious faith along with obedience preserve individual and social order and matter more than independence and self-determination. Nevertheless the conservative dimension of religion can change with economic development and modernization and the antagonism between secular education and religion can be reduced. In fact, Saroglou, Delpierre and Dernell (2003) emphasize that once a stable development level is reached, religion evolves and becomes less focused on conservative values and follows the cultural changes induced by modernization, promoting for instance promote rationalism, independence and self-determination.

Given that religion may have an ambivalent influence on educational achievement, it is not mistaken to hold that the overall impact of religion and the prevalence of its conservative dimension may depend on the stage of economic development.

Following this theoretical background, the aim of the paper is to analyse the causal link between religion and the formation of human capital through an analytical model, by considering that religion can work in two antithetical directions, which affect the acquisition of secular education by children. The results are empirically tested through a probit model by using sample data from the World Values Survey. The sample consists of individuals from eight Latin American Countries: Argentina, Brazil, Chile, Colombia, Guatemala, Mexico, Peru and Uruguay. These aspects are dealt with in the following paragraphs. Specifically, in §2 we build a model where the influence of family background on children educational achievements is analysed. As part of family background it is considered the religion in which individuals have been brought up. In §3, the characteristics of the sample are described whereas in §4 the empirical model and results are shown and discussed. Finally conclusions are drawn.

2. The analytical model

As to the analytical framework, we partly draw on the model by Glomm and Ravikumar (1992), which takes into consideration the influence of family educational background on children's human capital accumulation. In our model, parents' human capital and the religion in which individuals have been raised, define family background. Our economy is characterized by overlapping generations where individuals live for two periods and die at the end of the second period. In the first period, t , the members of the old generation are endowed with a stock of human capital h_t , defining family educational background. Individuals of the young generation born in t are raised in the religion of the old generation. In this model religion corresponds to religious affiliation, which is indicated by R_t with $R_t = 1$ for being religious and $R_t = 0$ for not being religious. Individuals allocate their time between leisure and the accumulation of human capital when young, and consume c_{t+1} in the subsequent period, $t + 1$, when old. Total time disposable to young individuals is normalized to one and n_t units are devoted to leisure whereas $1 - n_t$ to the acquisition of education. Individuals' preferences over leisure and over consumption are the same, their heterogeneity is characterized by the educational and religious background of their family. The utility function¹ of an individual born in t is:

$$U(n_t, c_{t+1}) = \ln n_t + \ln c_{t+1} \quad (1)$$

The process generating human capital is:

$$h_{t+1} = \mathcal{G}(1 - n_t)^\alpha h_t^\beta (\mu + \delta R_t + \varphi R_t \overline{D}_t)^\gamma \quad (2)$$

In (2) it is assumed that the parameters $\alpha, \beta, \gamma \in]0, 1[$, $\mathcal{G} > 0$ and that $\mu = 0$ if $R_t = 1$ whereas $\mu = 1$ if $R_t = 0$, whereby the process generating human capital becomes the standard one. Individual learning ability is captured by \mathcal{G} . $\overline{D}_t > 0$ is the level of economic development of the collectivity to which young individuals belong.

Our main point is that religion is believed to shape children's attitudes and motivations towards education and to affect the impact of the other factors – the time devoted to the acquisition of education, individual abilities and family human capital – on the process generating human capital. Specifically religion alone always positively influences education with $\delta \in]0, 1[$, as one cannot overlook the argument that it generally transmits values like hard-work and self-discipline that facilitate learning and educational achievements. The parameter δ captures also the fact that religion may present a conservative dimension promoting fatalism and hampering individual self-reliance, whereas a less conservative religion may foster modern values like self-determination along with independence. Conservative values discourage human capital accumulation as higher

¹ In the utility function it is assumed that young individuals regard the utility from leisure in t and from consumption in $t+1$ equally – in which case the subjective discount rate is equal to zero. A subjective discount rate greater than zero does not change the results as to the aim of the model.

education is not believed to be conducive to better jobs and social status. The stronger this conservative dimension, the closer to zero the parameter δ , which is taken as the degree of religious conservatism. Thus, the size of the positive influence of religion upon education depends on the degree of religious traditionalism. Following Saroglou, Delpierre and Dernell (2003), religious conservatism can be moderated by the cultural change caused by development and modernization. Consequently the overall effect of religion depends as well on the level of economic development, which enters the accumulation of human capital and is interacted with religion in (2). The component $R_t D_t$ (with $R_t = 1$) represents being religious in a collectivity with a certain level of development and modernization. The influence of \bar{D}_t on the human capital of a religious individual ($R_t = 1$) is partly captured by $\varphi > 0$, which implies that with rising economic development religion conforms to modern values enhancing, in particular, individual independence and self-determination. This strengthens the positive influence of religion alone on children's educational achievements. We interpret the parameter φ as embodying the ability of religious institutions to adapt to the values fostered by economic development and modernization. It will be shortly defined as religion reactivity to development. The higher the φ , the greater the influence of development as religion tends to promote modern values fostering educational achievements.

Adults' earnings depend on human capital and are assumed to be equal to h_{t+1} . Finally, in the last period individuals consume all their income. Thus, they choose n_t and c_{t+1} in order to maximize their utility:

$$\ln n_t + \ln c_{t+1}$$

given the following constraints

$$h_{t+1} = \mathcal{G}(1 - n_t)^\alpha h_t^\beta (\mu + \delta R_t + \varphi R_t \bar{D}_t)^\gamma$$

$$y_{t+1} = h_{t+1}$$

$$h_{t+1} = c_{t+1}$$

and given h_t , R_t and \bar{D}_t .

It is easy to show that:

$$n_t^* = \frac{1}{1 + \alpha} \tag{3}$$

$$h_{t+1}^* = \mathcal{G} \left(\frac{\alpha}{1 + \alpha} \right)^\alpha h_t^\beta (\mu + \delta R_t + \varphi R_t \bar{D}_t)^\gamma \tag{4}$$

As one would expect, in equilibrium children's human capital is determined not only by the optimal time devoted to the acquisition of education, $1 - n_t^*$, family endowment of human capital

and children's learning ability but also by religion and by the level of economic development interacted with religion.

The role of development becomes more evident from the analysis of the derivative of h_{t+1}^* with respect to \bar{D}_t in the case of a religious family, with $R_t = 1$ and $\mu = 0$:

$$\frac{\partial(h_{t+1}^*)}{\partial \bar{D}_t} = \mathcal{G} \left(\frac{\alpha}{1-\alpha} \right)^\alpha (h_t)^\beta \gamma \varphi (\delta + \varphi \bar{D}_t)^{\gamma-1} \quad (5)$$

In (5), the expression $\mathcal{G} \left(\frac{\alpha}{1-\alpha} \right)^\alpha (h_t)^\beta$ corresponds to the optimal level of children's human

capital that one would achieve in absence of religion. As $\mathcal{G} \left(\frac{\alpha}{1-\alpha} \right)^\alpha (h_t)^\beta$ is greater than zero

given the assumptions on the parameters, we inspect the inequalities $\gamma \varphi (\delta + \varphi \bar{D}_t)^{\gamma-1} < 1$ and

$\gamma \varphi (\delta + \varphi \bar{D}_t)^{\gamma-1} > 1$, which imply that in equilibrium an increase in the development level raises

children's education in both cases. Yet in the former case, the influence of \bar{D}_t tends to curtail the

optimal level of children's human capital determined by individual learning ability, \mathcal{G} , the optimal

time devoted to education and family human capital. In the latter case, higher development

reinforces children's optimal educational level. The conditions under which the inequalities hold,

are synthesized in the following proposition.

The influence of the level of development on children's optimal human capital

CASE OF φ BELOW $\frac{1}{\gamma}$

When $\varphi \in \left] 0, \frac{1}{\gamma} \right[$, if the initial development is sufficiently high with $\bar{D}_t > \frac{1-\delta}{\varphi}$, further

development promotes children's optimal education.

In the case of $\varphi \in \left] \frac{\delta^{1-\gamma}}{\gamma}, \frac{1}{\gamma} \right[$, if the initial development is so low that $\bar{D}_t < \frac{(\gamma \varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi}$, with

$\frac{(\gamma \varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi} < \frac{1-\delta}{\varphi}$, further development restrains children's optimal education.

CASE OF φ ABOVE $\frac{1}{\gamma}$

When $\varphi > \frac{1}{\gamma}$, if the initial development is sufficiently high such that $\overline{D}_t > \frac{(\gamma\varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi}$, an increase in the development level tends to foster children's optimal education. Whereas if the initial development is so low that $\overline{D}_t < \frac{1-\delta}{\varphi}$, with $\frac{1-\delta}{\varphi} < \frac{(\gamma\varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi}$, an increase in the development level tends to curb children's optimal education.

It is worth stressing that though the ability of religious institutions to follow the values fostered by economic development and modernization - φ - can be relatively low (below $\frac{1}{\gamma}$), if the initial level of development is sufficiently high, further development can improve children education. If there is a high ability of religious institutions to adapt to modern values (above $\frac{1}{\gamma}$) but it is associated with a low initial development level, further development can curtail the educational improvement of children. Accordingly, high development promotes less traditional values related to self-determination, autonomy and openness to changes, which become deeply rooted in societies and end up permeating religious values as well despite a scarce responsiveness of religious institutions to modernization. This contributes to fostering children's educational performance. Conversely, when there is a conservative religion, the less developed the collectivity, the more the conservative religious values prevail, which, for instance, may occur in agrarian societies, though there may be less conservative religious institutions. In this case, further development is not enough to strengthen children's education.

In light of the analytical part, it is possible to formulate the following hypotheses to test.

H.1 *More conservative religions compared with less traditional religions curtail children's educational attainments².*

² One can check it through the derivative of h_{t+1}^* with respect to δ when $R_t=1$ in (4).

H.2 In a collectivity sufficiently developed, modern values thoroughly permeate religion so that they may:

- *either reinforce the positive and relatively higher influence of less traditional religions with respect to conservative religions on children's educational achievements;*
- *or counterbalance the curbing though positive influence of more traditional religions to such an extent as to improve children's educational achievements.*

H.3 When the development level is not sufficiently high, traditional values prevail and can further curtail the curbing effect of a conservative religion on children's educational achievements.

These hypotheses are verified through the empirical model that is specified in the subsequent part.

3. Data and empirical framework

For the empirical part we have selected a sample of 1,684 individuals from the 2005 World Value Survey (WVS) dataset related to some Latin American countries, nominally Argentina, Brazil, Chile, Colombia, Guatemala, Mexico, Peru and Uruguay. The reason why these countries were chosen is that they present high heterogeneity in the data with respect to the more relevant variables – education, religion and development indicators – used in the empirical analysis. The WVS mainly reports people's values and beliefs and also their religious affiliation.

In Table 1 there are the descriptive statistics, in particular, our dependent variable (**Ed**) concerns the individuals who have achieved either a university degree or some level of university education. The individuals with university education represent 26% of our sample. As far as religious affiliation is concerned, we distinguish between Catholics representing 93% of the sample and Protestants representing the remaining part. This allows testing the above hypotheses and, in particular, verifying whether the former have a stronger conservative dimension than the latter. As to this distinction, we take into account that in Latin America Protestantism grew very slowly starting from the grassroots during the nineteenth century and more rapidly during the following century. More than Catholics, Protestants have been able to consider modernization as a process leading to people's empowerment and greater adaptability to the new system. This has helped the integration of lower classes into Latin American industrial societies (Escobar, 1997).

As belonging to a religious denomination does not necessarily embody individual religiosity, we also consider the Catholics and Protestants who define themselves as religious persons independently of going to church or not (**Catholic*Religious**). As to the other independent variables, males represent 46%, the mean age is 21.33 and leisure is important in one's own life for 29% of the individuals considered. Given the characteristics of the WVS dataset, family educational background is captured by the chief wage earner profession/job expressed by fourteen dummies (see the empirical appendix). The geographical variation in human capital accumulation is taken into account through country dummies. Finally, as to the development level promoting modern values, our approach is in line with the contribution of Inglehart and Baker (2000). We

have used the World Bank data for the same period and defined two variables, Industry and Services, by assigning each country the percentage of employees respectively in the industrial and service sector with respect to agriculture.

Table 1

DESCRIPTIVE STATISTICS

Variables	Mean	Std. Dev.
Individuals with the highest level of education (Ed)	0.26	0.437
Catholic	0.93	0.247
Catholic*Religious	0.75	0.435
Age	21.33	2.369
Male	0.46	0.499
Leisure	0.29	0.453
Country Dummies		
Argentina	0.08	0.279
Brazil	0.1	0.296
Chile	0.07	0.264
Colombia	0.3	0.458
Guatemala	0.11	0.316
Mexico	0.13	0.337
Peru	0.18	0.381
Uruguay	0.02	0.145
Development Dummies		
Industry	24.53	8.23
Services	60.05	9
Observations		1,684

As far as the econometric framework is concerned, we have implemented a probit model in order to investigate the effects of religious affiliation on children's human capital, proxied by the level of education:

$$Ed_i = \alpha_0 + \alpha_1 R_i + \alpha_2' Z_i + \varepsilon_i \quad (6)$$

where i is the individual index, Ed_i is a dummy variable, taking the value of 1 if the individual i has the highest level of education (University, with or without degree) and 0 otherwise (lower education). R_i is a dummy variable (**Catholic**) taking the value of 1 if the individual is Catholic and 0 if Protestant. When we use religiosity in place of religious affiliation (**Catholic*Religious**), the left out category is religious Protestants. Z_i is a vector including the other covariates partly described in Table 1, and ε_i is the error term. Following the theoretical model we also include an interaction term between religious affiliation and the development dummy concerning the industrial sector (**Catholic*Industry**). In fact, industrialization may lead to the wide-spreading of modern values and generally religion may become less conservative and follow the cultural changes induced by the modernization process. In particular, coherently with the hypothesis $H1$, the religious variables - **Catholic** and **Catholic*Religious** - are expected to have a negative sign when Catholic religion is more conservative than Protestantism. Moreover, in light of the following hypotheses - $H2$, $H3$ - the total marginal effect of religion on the probability of university education with respect to lower education is expected to be positive in case of less traditional Catholic religion and a sufficiently developed economy. While it is expected to be negative if Catholic religion is more traditional and the economy is not sufficiently developed.

As religion can be endogenous with education, it has also been followed a two-stage estimation procedure where in the first stage religion is the dependent variable (**Catholic_endog**, model 3 in Table 2 below) and the instruments are some variables from Fox's survey (Fox, 2008)³. They embody government involvement in religion (GIR henceforth). These variables are believed to affect both religious adherence and religiosity. The first group of instruments measures the official role of religion in the state and consists of two dummies - **GIR1**, **GIR3** - which correspond respectively to the following regimes: *separationist* where there is official separation between state and religion and the state is marginally hostile toward religion; *civil religion* where one religion unofficially is the state's civil religion. The dummy **Limitations** individuates whether the state limits some religions with respect to others. Finally, we consider a group of two dummies identifying different types of religious legislation, which among other aspects measures *legislation of religious law as state law, financial support for religion, religious education, and the commingling of religious and political positions* (Fox, 2008, p. 53). These dummies are **Legislation3** capturing the presence of optional religious education in public school and government funding of religious schools or of religious education in secular schools, and **Legislation4**, which entails that religious organizations must register with government in order to obtain official status besides the financial support to religious education. As religion can be endogenous also with respect to children's educational level, we have also estimated a biprobit model, where religion is the dependent variable and education the explanatory one but the results are not significant⁴. In the second stage we used the fitted values for religion in the estimation of education.

³ As to the issue of religion endogeneity and of the choice of instrumental variables we refer to the contribution by McCleary and Barro (2006).

⁴ This robustness analysis is available from the authors upon request.

4. Empirical results

Equation (6) is estimated for the whole sample. Table 2 reports the results of the estimation of the probability of university education (**Ed**)⁵. In models 1 and 2 the religious variables are respectively **Catholic** and **Catholic*Religious** while in model 3 the results derive from the two-stage estimation. In order to test the validity of the instruments used in model 3, we ran an over-identification test, the Amemiya-Lee-Newey test, which is distributed as a χ^2 with three degrees of freedom. As we may observe in Table 4, the test statistic is 8.794 (p-value=0.0322), thus we could not reject the orthogonality of the set of instruments with a conventional error of 1%. The estimated probit coefficient on religious affiliation has a negative sign though it is not statistically significant both in model 1 and in model 2. The sign shows that Catholic religion with respect to Protestantism tends to curb the achievement of higher education and in this respect points to the fact that in the Latin American countries analysed, Catholicism is characterised by a conservative dimension. When religion is endogenous (model 3), not only is the negative impact of Catholic religion confirmed but it is also highly significant. Interestingly, in the first stage regression (Table 3) the variables entailing an active role of the state as to the limitations of some religions with respect to others and as to religious education, reduce the probability of adhering to Catholic religion with respect to Protestantism.

Table 2
EDUCATION AND RELIGION

Variable	ME	(SE)	ME	(SE)	ME	(SE)
	(Model 1)		(Model 2)		(Model 3)	
Catholic	-0.19	(0.168)				
Catholic*Religious			-0.07	(0.083)		
Catholic_endog					-11.87***	(3.366)
Age	0.02***	(0.004)	0.01***	(0.004)	0.02***	(0.004)
Male	-0.01	(0.021)	-0.01	(0.021)	-0.01	(0.021)
Leisure	0.01	(0.027)	0.01	(0.027)	0.02	(0.026)
Industry	-0.01	(0.005)	-0.01	(0.003)	-0.38***	(0.112)
Services	-0.01	(0.002)	-0.01	(0.002)	-0.01	(0.002)
Catholic*Industry	0.01*	(0.005)	0.01	(0.002)	0.44***	(0.128)
No. of observations	1,684		1,684		1,684	
Pseudo R-squared	0.06		0.06		0.06	
Log-likelihood	-903.16		-904.93		-906.82	

⁵ In the empirical appendix, we present the results concerning the dummies for chief wage earner profession/job in all the models estimated.

Note: The dependent variable is equal to one if the individuals have the highest level of education and 0 otherwise. For country dummies Argentina is the reference category and for chief wage earner profession/job dummies “other” type is the reference category. Standard errors are corrected for heteroskedasticity. The symbols ***, ** and * denote that the coefficient is significantly different from zero at the 1, 5 and 10 percent levels, respectively.

Table 3

ENDOGENOUS RELIGION – FIRST STAGE REGRESSION

Variable	ME	(SE)
GIR1	0.04*	(0.281)
GIR3	-0.09***	(0.289)
Limitations	-0.05**	(0.204)
Legislation3	-0.16***	(0.384)
Legislation4	0.03***	(0.115)
No. of observations	1,684	
Pseudo R-squared	0.07	
Log-likelihood	-376.62	

Note. The dependent variable is equal to one if the individuals are Catholic. The symbols ***, ** and * denote that the coefficient is significantly different from zero at the 1, 5 and 10 percent levels, respectively.

Table 4

OVER-IDENTIFYING RESTRICTIONS TEST

Amemiya-Lee-Newey minimum chi-sq statistic	8.794 $\chi^2(3)$	p-value=0.0322
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However, in order to examine the overall effect of religion - depending also on the development level according to the theoretical model - in Table 5 we report the total marginal effect from the three models evaluated respectively at the lowest level of development (the lowest percentage of employees in the industrial sector - TMELD) equal to 18.7 in Colombia and at the highest level of development (the highest percentage of employees in the industrial sector - TMEHD) equal to 41.87 in Peru. In the former case the coefficient is negative in all three models but it is significant only when religion is endogenous (model 3). The sign seems to confirm that when there is a low development level, traditional values prevail and Catholic religion overall

reduces the probability of children’s higher education.

Table 5

TOTAL MARGINAL EFFECT OF RELIGION ON EDUCATION AND DEVELOPMENT

Variable	ME (Model 1)	(SE)	ME (Model 2)	(SE)	ME (Model 3)	(SE)
TMELD	-0.04	(0.198)	-0.01	(0.099)	-11.42***	(3.22)
TMEHD	0.15**	(0.267)	0.07	(0.177)	20.92***	(6.61)
No. of observations						1,684

Note: The dependent variable is equal to one if the individuals have the highest level of education and 0 otherwise. For country dummies Argentina is the reference category and for chief wage earner profession/job dummies “other” type is the reference category. Standard errors are corrected for heteroskedasticity. The symbols ***, ** and * denote that the coefficient is significantly different from zero at the 1, 5 and 10 percent levels, respectively.

The coefficient in the latter case with the highest level of development is positive and significant both in model 1 and 3. This result is in line with the theoretical model and shows that in a collectivity sufficiently developed, the presence of modern values improves children’s educational achievements by counterbalancing the negative influence of the conservative dimension of Catholic religion on higher education.

As to our empirical findings it is worth mentioning that Barboni and Treibich (2011) show a positive correlation between growth and Catholicism in the Golden Age of Latin American growth (1950 - 1975), which they interpret through the role of Catholic Church as an educational institution that contributed to raise the literacy rate. Interestingly it also emerges a negative correlation between Catholic religion and secondary school enrolment rate, which the authors explain with the prevalent interest of Catholic institutions in basic education. These phenomena seem coherent with our analytical and empirical results though they refer to different periods. In fact, they bring attention to conservative role of Catholicism in Latin America in promoting more primary education than higher education. Interestingly, the historical evidence shows that in Latin America Catholic religion during the colonization period was strongly linked to civil authority and provided the ideological buttress to the colonial feudal system by inducing the acceptance of the existing social order (Escobar, 1997). Following Esterlin (1981), in the postcolonial period, the persistent supremacy of church in the secular dimension hindered the diffusion of mass education. Only the shift in power from the church to the state triggered this process. With the Vatican II Council a renewal wave generally led the institutional hierarchies of Catholic Church to reduce their support to the ruling elites and to recognize the need for social change, individual consciousness and empowerment triggered by modernization (Romero, 2001; Escobar, 1997).

Nevertheless each country followed a different pattern depending on the ability of Catholic institutions to adapt to modernization and on the level of development. For instance, in the sixties Chile was characterized by both a sufficiently high development level and according to Vallier (1970) a high propensity of Catholic Church to change with modernization – high φ . Other countries like Mexico and Argentina though presenting the same level of industrialization as in Chile had more conservative Catholic institutions. In the latter case as the development level was coupled with a low φ , it was not so high as to disseminate modern values. In fact, in Chile the strength of political institutions allowed for the separation between religion and secular power. Moreover there was the competitive pressure of the communist party and Pentecostals more responsive to the claims for change of society in the access to and distribution of resources. All these factors, on the one hand, freed political and social organizations from the control of the Catholic Church, including the cultural control of education. On the other hand, they stimulated Chilean religious institutions to back the secular goals pursued by political institutions. Instead, in Mexico though there was a clear-cut separation between state and religion from the beginning of the twentieth century, the Church kept a traditional and conservative role as far as social needs were concerned. It did not receive enough stimuli from governmental institutions, from competing political and religious movement in order to further modernization – low φ . Differently, in Argentina the weakness and instability of political institutions allowed for the influence of Catholic institutions in some spheres of political power. Such impact, traditionally conservative and contrary to modernizations, was strengthened by the lack of competition by other political and religious movements. By this token Catholic institutions were not responsive at all to the claims for social change dictated by the modernization process – low φ . In light of our evidence and of these historical patterns described by Vallier (1970), it is not mistaken to hold that overall in the Latin American countries where there have been high development and modernization along with the ability of Catholic institutions to adapt to modernization, Catholic religion has been able to follow the cultural changes induced by modernization. Thus, it has transmitted values fostering higher educational achievements. While whenever there has been a strong resistance to change by religious institutions, it has been necessary a development level sufficiently high to overcome religious conservatism and to promote changing values, which has not always been the case.

5. Conclusions

According to our theoretical approach, religious values influence children's attitudes and motivations towards education by emphasizing the importance of school performance and educational achievements. Any type of religion independently of its conservative dimension can promote hard work, discipline and responsibility. However religion may present a conservative dimension which promotes the acceptance of the status quo and hampers individual self-determination. Religious conservatism can shape children's attitude in such a way that they do not believe that education leads to better jobs and socio-economic status and are not motivated to invest in a higher level of human capital. In this respect economic development may play a crucial role by driving the process of cultural change. A sufficiently high level of development may bring about the dissemination of modern values like self-determination, which may become deeply

rooted in society and permeate religious values as well. This ultimately promotes the diffusion of education and the achievement of higher levels of education. In line with the theoretical framework, the empirical evidence shown in the paper seems to point to some conservative dimension of Catholicism in the Latin American countries considered. In fact, Catholic religion with respect to Protestantism tends to curb children's achievement of higher education. Nevertheless, the evidence points out the critical role of development in counterbalancing the latter effect. In fact, when the development level is taken into account, the overall marginal effect of religion on the probability of university with respect to lower education is negative at the lowest level of development. In this case, traditional values prevail and Catholic religion overall reduces the probability of children's higher education. Whereas the same effect is positive if it is evaluated at the highest level of development, supporting the idea that the presence of modern values improves children's educational achievements by counterbalancing the negative influence of the conservative dimension of Catholic religion on higher education.

In light of this analysis, it is not mistaken to believe that besides the key variables generally considered in the literature, religion and development may play a non-negligible role in explaining educational achievements.

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Analytical Appendix

1. Proof of proposition 2

Let us consider the following inequalities from (6) in the main text:

$$\gamma\varphi(\delta + \varphi\bar{D}_t)^{\gamma-1} > 1 \Rightarrow \delta + \varphi\bar{D}_t > (\gamma\varphi)^{\frac{1}{1-\gamma}} \quad [A.1]$$

$$\gamma\varphi(\delta + \varphi\bar{D}_t)^{\gamma-1} < 1 \Rightarrow \delta + \varphi\bar{D}_t < (\gamma\varphi)^{\frac{1}{1-\gamma}} \quad [A.1bis]$$

We set $\gamma\varphi(\delta + \varphi\bar{D}_t)^{\gamma-1} \equiv \Phi$

$$\delta + \varphi\bar{D}_t = 1 \Rightarrow \bar{D}_t = \frac{1-\delta}{\varphi}$$

$$(\gamma\varphi)^{\frac{1}{1-\gamma}} = 1 \Rightarrow \varphi = \frac{1}{\gamma}$$

Thus,

- if $\bar{D}_t > \frac{1-\delta}{\varphi}$ and $\varphi < \frac{1}{\gamma}$, $\Phi > 1$ and if $\bar{D}_t < \frac{1-\delta}{\varphi}$ and $\varphi > \frac{1}{\gamma}$, $\Phi < 1$

When $\bar{D}_t < \frac{1-\delta}{\varphi}$ and $\varphi < 1$ and of $\bar{D}_t > \frac{1-\delta}{\varphi}$ and $\varphi > 1$, [A1] and [A1bis] are true if respectively:

$$\bar{D}_t > \frac{(\gamma\varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi} \quad [A2]$$

$$\bar{D}_t < \frac{(\gamma\varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi} \quad [A3]$$

Moreover, we consider:

$$\gamma\varphi(\delta + \varphi\bar{D}_t)^{\gamma-1} = 1 \Rightarrow \bar{D}_t' = \frac{(\gamma\varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi} \quad [A.4]$$

$$\text{with } \frac{(\gamma\varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi} > 0 \text{ if } \varphi > \frac{\delta^{1-\gamma}}{\gamma}$$

$$(\delta + \varphi\bar{D}_t)^{\gamma-1} = 1 \Rightarrow \bar{D}_t = \frac{1-\delta}{\varphi} \quad [A.5]$$

It is easy to verify that:

$$\frac{(\gamma\varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi} > \frac{1-\delta}{\varphi} \text{ if } \varphi > \frac{1}{\gamma}$$

$$\frac{(\gamma\varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi} < \frac{1-\delta}{\varphi} \text{ if } \varphi < \frac{1}{\gamma}$$

and it is always true that $\frac{1}{\gamma} > \frac{\delta^{1-\gamma}}{\gamma}$.

Thus:

– when $\varphi \in \left] \frac{\delta^{1-\gamma}}{\gamma}, \frac{1}{\gamma} \right[$, if $\overline{D}_t < \frac{(\gamma\varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi}$, with $\frac{(\gamma\varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi} < \frac{1-\delta}{\varphi}$, $\Phi < 1$

– when $\varphi > \frac{1}{\gamma}$, if $\overline{D}_t > \frac{(\gamma\varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi}$, with $\frac{(\gamma\varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi} > \frac{1-\delta}{\varphi}$, $\Phi > 1$.

Summarizing the above results:

– when $\varphi < \frac{1}{\gamma}$, if $\overline{D}_t > \frac{1-\delta}{\varphi}$, $\Phi > 1$ and when $\varphi \in \left] \frac{\delta^{1-\gamma}}{\gamma}, \frac{1}{\gamma} \right[$, if $\overline{D}_t < \frac{(\gamma\varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi}$,

with $\frac{(\gamma\varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi} < \frac{1-\delta}{\varphi}$, $\Phi < 1$.

– when $\varphi > \frac{1}{\gamma}$, if $\overline{D}_t < \frac{1-\delta}{\varphi}$, $\Phi < 1$ and if $\overline{D}_t > \frac{(\gamma\varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi}$, with $\frac{(\gamma\varphi)^{\frac{1}{1-\gamma}} - \delta}{\varphi} > \frac{1-\delta}{\varphi}$, $\Phi > 1$.

EMPIRICAL APPENDIX

DUMMIES FOR PARENTS HUMAN CAPITAL

Variable	ME	(SE)	ME	(SE)	ME	(SE)
	(Model 1)		(Model 2)		(Model 3)	
Chief wage earner profession/job						
Employer 10 employees	0.59***	-0.111	0.58***	-0.111	0.57***	-0.111
Employer less than 10 employees	0.24***	-0.097	0.23***	-0.097	0.26***	-0.082
Professional worker lawyer, Supervisory - office worker:	0.33***	-0.083	0.32***	-0.083	0.35***	-0.065
Non-manual - office worker:	0.08	-0.122	0.07	-0.122	0.12	-0.115
Foreman and supervisor	0.05	-0.089	0.04	-0.089	0.09	-0.081
Skilled manual worker	-0.02	-0.111	-0.02	-0.111	0.01	-0.104
Semi-skilled manual worker	-0.03	-0.065	-0.03	-0.065	-0.01	-0.055
Unskilled manual worker	-0.09	-0.056	-0.08	-0.056	-0.06	-0.047
Farmer: has own farm	-0.08	-0.059	-0.07	-0.059	-0.04	-0.049
Agricultural worker	0.37***	-0.138	0.37***	-0.138	0.38***	-0.136
Member of armed forces	-0.17**	-0.047	-0.16	-0.047	-0.16**	-0.048
Never had a job	0.07	-0.146	0.07	-0.146	0.11	-0.136
No. Of observations	-0.04	-0.184	-0.04	-0.183	-0.03	-0.191
Pseudo R-squared	1,684		1,684		1,684	
Log-Likelihood	0.06		0.06		0.06	
	-903.16		-904.93		-906.82	

Note: For chief wage earner profession/job dummies “other” type is the reference category. Standard errors are corrected for heteroskedasticity. The symbols ***, ** and * denote that the coefficient is significantly different from zero at the 1, 5 and 10 percent levels respectively

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Comparative analysis of the degree of international capital mobility in Tunisia and Morocco: revised Feldstein Horioka approach

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Abstract . *The main purpose of this paper is to assess the degree of capital mobility in Tunisia and Morocco. Using the methodology of Feldstein and Horioka [1980], we test the hypothesis of perfect capital mobility. The methodology that we have applied used time series econometric techniques, which included analyzing the stationary, co-integration and Error-Correction Model. On the other hand, we develop an Augmented Feldstein Horioka model by introducing additional variables to explain more effectively the degree of financial openness in these countries.*

We interpret the relationship between domestic saving and investment in the long-run as reflecting the solvency constraint. We find that saving and investment display a cointegration relationship that is consistent with the interpretation that a solvency constraint is binding for each country. The short and long run coefficients of correlation are significant and presenting a low value of estimation. We conclude that the degree of capital mobility is relatively high in Maghreb countries (Tunisia and Morocco).

Key words: Feldstein Horioka puzzle, capital mobility, cointegration, Error-Correction Model, Tunisia, Morocco.

JEL codes: F36, E20, C01, C22.

1. Introduction

Recently, the trend in the world capital market has been toward increasing globalization. In the 1980s and 1990s, many developing countries have liberalized their financial markets and, in addition, have opened up their capital accounts.

Potentially, there are many gains from improving financial integration. In this context, capital mobility enhances global resources allocation since it allows smoothing consumption and reducing risk. Moreover, it stimulates investment and hence growth beyond the limits of domestic saving. Additionally, unrestricted capital flows facilitate diversification of financial services, and thus affect positively the international economy. However, financial liberalization and deregulation have increased the volatility in the financial markets and consequently created new class of risk.

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In addition, it seems clear that capital account liberalization influences largely the effectiveness of economic policies. Namely, national saving plays an important role in economic development and constitutes a fundamental determinant for long run growth since it stimulates investment, which, in turn, increases output and leads to higher income level. Therefore, policy-makers should focus on increasing national saving, by promoting domestic saving and reducing public deficits.

If capital is mobile across countries, the mainstream view is challenged. For instance, national saving should not finance domestic investment. On the contrary, in a country with high degree of capital mobility, domestic saving will be invested around the world, looking for a better remuneration. In this way, domestic saving will be uncorrelated with domestic investment. Feldstein and Horioka [1980] tried to test the following hypothesis: there is no relation between domestic saving and domestic investment in industrial countries.

The question of whether saving and investment are cointegrated has been baffling economists for decades, and is at the core of what is known as the “Feldstein-Horioka Puzzle”. While most economy models assume that capital is highly internationally mobile the so-called “Feldstein-Horioka puzzle”, which is considered by Obstfeld and Rogoff as one of the six major puzzles in international economics, showed that, across 16 OECD countries for the 1960-1974 period, domestic investment and saving were highly correlated, which implies low capital mobility.

Many papers attempt to resolve and explain F-H puzzle by tracking the evolution of saving and investment relationships over time and across different exchange rate and capital control regimes. Others studies argued that the correlation between saving and investment is due to alternative macroeconomic factors. These included long run current account targeting and inter-temporal budget constraint.

The reason usually invoked for the relatively poor performance of the Maghreb countries, is their limited financial market linkages with global economy, which amplify the impact of macroeconomic volatility on economic growth and reduce the potential gain from financial integration. Consequently, understanding the saving-investment relationship is important for this region. First, it may hold the key to the positive correlation between saving and growth and, second, if capital accumulation is important for growth, the saving-investment correlation is crucial for assessing the validity of the assumption that increasing saving means to enhance growth.

The objective of this paper is to examine the correlation between saving and investment in Tunisia and Morocco and to whether our findings match to common results of earlier studies on developing countries.

According to Coakley and Kulasi [1997], we interpret the close relationship between domestic saving and investment in their long run as reflecting a solvency constraint, rather than as an evidence of limited capital mobility. Then we apply Johansen [1996, 1998] methodology in order to examine the short term saving investment relationship, especially the speed at which the variables return to their long run equilibrium.

This paper is organized as follows: in section II, we describe the Feldstein Horioka criterion for international capital mobility based on their underlying assumptions. In section III, we use cointegration tests and Error Correction Model to determine the existence of a long run relationship between saving and investment in Tunisia and Morocco. In section IV, we present the results of Augmented Feldstein Horioka estimation. In section V, we replicate our main findings and conclude this paper.

2. The Feldstein-Horioka approach

The Feldstein-Horioka [1980] model is based on the following equation, which consists of the regression of domestic investment rate on domestic saving rate:

$$\left(\frac{I}{Y}\right)_i = \beta_1 + \beta_2 \left(\frac{S}{Y}\right)_i + \mu_i$$

I : Gross domestic investment

S : Gross domestic saving

β_2 : The coefficient of the saving and investment correlation, which is supposed to measure the international capital mobility.

In this model, perfect capital mobility involves a β_2 coefficient equal to zero for a small country. For a relatively large country, the value of this β_2 coefficient should not exceed country's share in the stock of the world capital. A β_2 coefficient close to one signifies international capital immobility.

Using a sample of 16 OECD countries, Feldstein-Horioka find β_2 equal to 0.89. The high value of this coefficient denotes that domestic investment and saving are highly correlated among OECD countries, which is in contradiction with the hypothesis of perfect capital mobility in industrialized countries.

This Feldstein-Horioka controversial work has engendered many researches related to the saving and investment correlations and the degree of international capital mobility. The common studies search to resolve Feldstein-Horioka puzzle by using alternative methodologies, estimations periods and providing different results, which confirm robustness of Feldstein-Horioka findings.

Some studies focus on empirical modeling equation like sample sensitivity (Caderot [2001]), common contemporaneous shocks and simultaneity bias due to the endogeneity of saving (Obstfeld and Rogoff [2000]), policy regime changes (Sarno and Taylor [1998], Ho [2003]). On the other hand, Coakley, Kulasi and Smith [1998] argue that saving and investment cointegration with unit coefficient implies current account solvency, irrespective to the degree of capital mobility. Consistent with interpretation, endogenous government policy actions targeting a sustainable current account have been postulated to explain the long-run saving-investment relationships (Bayoumi [1990]).

Other studies try to criticize the relevance and the robustness of Feldstein and Horioka results (Backus, Kehoe and Kydland [1992], Taylor [1994]).

Frankel [1992] argues that saving and investment co-movements may not necessarily indicate a low degree of financial integration: two alternative explanations are addressed. The first hypothesis is that common factors determine jointly domestic saving and investment. A second argument is that policy makers may try to attain a target current account balance through appropriate regulations, such as fiscal or monetary policies.

Bayoumi [1990] points out that a saving investment correlation may reflect the fact that the government uses fiscal and monetary policies to target the current account balances. The author finds, initially, that the correlation between the private domestic investment and gross domestic saving is much weaker than the correlation coefficient between gross domestic investment and gross domestic saving. Secondly, correlation between investment and saving is lower when saving series are adjusted to take account of ricardian equivalence.

Recent literature studying the cases of developing countries (Murphy [1984], Obstfeld and Rogoff [2000], Banerjee and Zanghieri [2003], Hoffman [2004]) tried to resolve Feldstein-Horioka Puzzle by adding arguments and factors concerning economic conditions in industrializing and emerging countries.

Trying to measure the degree of international capital mobility in the case of developing countries, numerous studies (Dooley *et al* [1987], Mamingi [1994], Vamvakidis and Wacziarg [1998], Isakson [2001], Coakley *et al* [1999], Sinha and Sinha [2004]) find a lower value of the correlation coefficient. Results, which conclude the presence of capital mobility in developing countries, given

that many arguments relating to structural characteristics of these countries have been set out to explain these counterintuitive findings.

However, Harberger [1980] showed that the saving and investment correlation depends on the size of the economy. A large country is more diversified, so shocks on domestic saving and investment do not increase foreign capital inflows. Another explanation concerns the current account solvency approach. In this perspective, if the current account series is stationary, a high saving and investment correlation is justified; in contrast, if the current account series is not stationary, β_2 coefficient will be low. Therefore, the correlation's coefficient reflects the long constraint of current account. In fact, this constraint implies that, in the long term, current account tends towards zero; thus imposes the stationary of current account. A cointegration relationship between saving and investment will be necessary. In this case, a high coefficient correlation is only the result of the validation of the external constraint even in the case of perfect capital mobility.

Mamingi [1994] estimates the Feldstein-Horioka regression using a sample of 58 countries. He finds that saving-investment correlation is much weaker in developing countries than in OECD countries. He argues that developing countries are presented as small open economies where fiscal policy uses for demand management purposes will be unable to crowd out private sector investment.

Coakley, Hassan and Smith [1999], show that stationary test frequently reject the current account stationary for developing countries. This result confirms the vulnerability of these countries to external shocks and explains the low value of the saving-investment correlation in developing countries.

Taylor [1996] and Schneider [1999] develop an Error Correction Model based on the procedure of Engle and Granger [1987]. This method makes possible to separate short run dynamics from long run dynamics of saving and investment. Schneider [1999] estimates saving investment correlation for a sample of 61 developing countries over the period 1970-1997. Firstly, the authors estimate the baseline equation using OLS technique. They find that several developing countries present a low saving investment correlation, which support capital mobility among developing countries. Secondly, the ECM method applied and the analysis of the stationary of current account was tested using Philips Perron test. Estimations demonstrate that only twenty developing countries present low value of coefficient with no stationary current account, result that implies large capital mobility for these countries.

Isakson [2001] uses Feldstein Horioka methodology to measure international capital mobility in developing countries. In this study, the sample of 90 developing countries is divided into four regions: Africa, Asia, Latin America and the Middle East. The period of estimation is 1975-1995. The results indicate that, for developing countries, capital is relatively immobile. There is also evidence that the access to international financial markets increases financial liberalization. Finally, including foreign aid in saving investment regression has an important positive effect on the saving coefficient.

Sinha and Sinha [2004] study the short run and long run relationships between saving and investment rates for 123 developing countries using Error correction Model. Results suggest that capital should be more mobile for the countries with high per capita income. Estimations show that capital is mobile for 16 countries most of which with low per capita income.

Ozmen [2007] investigates whether the argument of Feldstein and Horioka [1980] on domestic saving investment relationship is supported by the data of the countries in the Middle East and North Africa region when financial development levels and exchange rate regimes are taken into account. To this end, the author employs both the Autoregressive Distributed Lag Bounds cointegration test and panel mean groups' procedures. The magnitude of the mean of saving retention coefficient is close to those results of some samples of developing countries. The results support the view that a successful international financial integration requires compatibles levels of financial liberalization. The evidence also suggests that saving-investment cointegration is not invariant to exchange rate regimes.

On the overall, the Feldstein-Horioka econometric test does not produce a benchmark measure that can qualify capital mobility level. Even if the Feldstein-Horioka criterion measures integration properly and the econometrics yield a proper estimate, we are still left without a measure telling us what is “high” and what is “low”. However, potentially useful information can be obtained by analyzing the changes over time in the correlation between saving and investment.

2. An analysis of the Feldstein-Horioka hypothesis in Tunisia and Morocco

In order to analyze the relationship between domestic saving investment in Tunisia and Morocco, this article uses an econometric model proposed by Feldestein and Horioka [1980] expressed in the formula as bellow:

$$\left(\frac{I}{Y}\right)_t = \alpha + \beta \left(\frac{S}{Y}\right) + \mu_t$$

where: I investment, S saving, and Y Gross Domestic Product, α the absolute term of the formula, and β the investment sensitivity to saving increase (saving retention coefficient).

The β coefficient-nearing zero shows perfect international capital mobility, while β nearing one shows the lack of international capital mobility, μ random parameter.

All of the above time series had an annual frequency and included the period between 1980 and 2010.

Before the model can be estimated, the stationary of the analyzed time series had to be determined. An augmented Dickey-Fuller test was used for this purpose. Then, we apply the Engel and Granger cointegration procedure for estimating the Error Correction model in order to examine a long run and short run relationship between investment and saving for each country and to measure the degree of capital mobility.

Jansen [1996] and Jansen and Schulze [1993] argue that the Error Correction Model is the only specification with theoretical support. Given that in steady state $\frac{I}{Y} = \frac{S}{Y}$, which is the current account equilibrium condition on the long run because of the solvency condition, the dynamics of saving and investment is temporary. An error correction model, then, is the best alternative to model the problem since it consists of a dynamic equation with steady-state solution that is compatible with the equilibrium.

The objective of the empirical investigation is to analyze the long run and the short run relationship between gross savings and gross investment. The time series are annual data and the sample period is from 1980 to 2010. All the variables are extracted from WDI World Bank. The data are in current prices and all are divided by nominal GDP at market prices.

We follow the work of Jansen and Schulze [1993], and use error correction model to examine the saving investment correlation.

We examine the saving investment correlations using the following equation:

$$\Delta(I_t) = \alpha + \beta_0 \Delta(S_t) + \beta_1 (S_{t-1} - I_{t-1}) + \beta_2 S_{t-1} + \varepsilon_t$$

Here β_0 captures the short run saving-investment correlation and show which part of the increase in saving stays at home. Significant non-zero values for the coefficient β_2 indicate that saving and investment rates are cointegrated, and in addition provide an estimate for the speed of adjustment of investment to the previous period’s deviation from the long run equilibrium. If the

coefficient $\beta_2 = 0$, the current account is stationary around some constant, and if $\alpha = \beta_2 = 0$, it is zero.

Table 1. Unit Root Tests Results in Level

	Variables	ADF			PP			Order of Integration
MAROCCO	Investment	-1.95099			-2.124976			I(1)
	Saving	-0.150967			-1.163776			I(1)
	Current account	-4.147020*			-4.689044			I(0)
TUNISIA	Investment	-2.757430			-2.451153			I(1)
	Saving	-1.744239			-2.669670			I(1)
	Current account	-4.148888			-7.486676			I(0)
Critical values		1%	5%	10%	1%	5%	10%	
		-4.3098	-3.5742	-3.2217	-4.2732	-3.5577	-3.2123	

Table2. Unit Root Tests Results in first Difference

	Variables	ADF			PP			Order of Integration
MAROCCO	Investment	-4.39824			-4.652099			I(0)
	Saving	-4.383158			-12.37656			I(0)
TUNISIA	Investment	-3.853751			-3.920406			I(0)
	Saving	-3.703005			-6.40093			I(0)
Critical values		1%	5%	10%	1%	5%	10%	
		-4.323	-3.5806	-3.2253	-4.284	-3.5628	-3.2152	

Tables 1 and 2 show the results of the unit root tests for each variable (Gross Domestic Saving, Gross Domestic Investment and Current Account) for Tunisia and Morocco during the period 1975-2010.

Results of ADF and Phillips-Perron tests show that gross domestic investment and gross domestic savings are stationary in first differences. These two series are integrated of order one. The current account series are stationary in level; they are integrated of order zero.

These results imply the possibility of the existence of a cointegration relationship between savings and investment. Since the variables of the model are in the same order, we can use the Engel and Granger cointegration test to estimate error model correction to inspect the long run and short run relationship between them. The current account Stationary means that Morocco and Tunisia facing a solvency constraint and long-term savings and investment are potentially cointegrated.

Table 3. Engel and Granger cointegration test

		TUNISIA	MOROCCO
t stat		-3.96	-3.41
Critical value	1%	-4.07	-4.07
	5%	-3.37	-3.37
	10%	-3.03	-3.03

Table 3 reports results of individual Engel and Granger [1987] residual based test cointegration between domestic saving and investment relationship. A test of the null hypothesis of non-cointegration could be based on testing for unit root $\hat{\mu}_t$ in using a Dicky Fuller test. If we cannot reject the null hypothesis $\rho = 0$, we can conclude that $\hat{\mu}_t$ contains a unit root, suggesting that domestic saving and domestic investment are not cointegrated. If however, we can reject the null hypothesis $\rho = 0$, we conclude that the residual series is stationary and domestic savings and investments are cointegrated.

We use simulated critical values, which correctly take into account the number of variables in the cointegration regression (Engle and Yoo [1987]). The ADF test of the baseline equation residual indicates that saving and investment are cointegrated at 95 percent confidence level for Tunisia and Morocco

Absence of cointegration would imply the perfect capital mobility in the sense of Feldstein Horioka. The presence of cointegration implies the existence of a long-term equilibrium relationship between saving and investment. The presence of cointegration also allows us to examine the short run and long run adjustment dynamics of saving and investment in an Error Correction Model (ECM).

Table 4. Estimation results based on Error Correction Model

Error Correction Model						
Country	A	β_0	β_1	β_2	R²	DW
Tunisia	4.776 (0.963)****	0.611 (2.206)**	-0.183 (-2.134)**	0.203 (2.209)**	0.790	1.89
Morocco	2.768 (0.802)****	0.52489 (1.895)*	-0.013 (-2.963)***	0.341 (5.025)***	0.854	1.95

*, **, ***, **** are respectively level of significance 1%, 5%, 10% and not significant

The estimations of Error Correction Model are presented in Table 4. The short run dynamics of saving and investment is captured by the coefficient β_0 . This coefficient of correlation is significantly different from zero. Using the original criterion of Feldstein and Horioka, we can conclude that the hypotheses of perfect mobility and perfect immobility are rejected for Tunisia and Morocco.

The theoretical model show that the sign and the size of the short run correlation depend on the nature of the errors and the structure of the economy and the error correction term β_1 of adjustment between short and long run which is significantly different from zero and negative for

Tunisia and Morocco, indicates that the ratio of investment and saving are adjusted in the long term. A low value for β_2 indicates a weak cointegration relationship between the interest variables.

4. Estimation of augmented Feldstein Horioka Model

A large number of studies have tried to explain the low saving-investment correlation in developing countries, based on the idea that foreign capital inflow can explain the low retention coefficient.

Payane and Kamuzawa [2005] estimate an Augmented Feldstein Horioka model to resolve the Feldstein-Horioka puzzle. The new specifications include the ratio of Foreign Aid, trade liberalization and the evolution of capital mobility over the time. The authors argue that Public Aid is a very important financial source for developing countries, especially as it is for a long time a very significant financial source of investment in these countries because of the low level of saving. The omission of this variable leads to a relatively low correlation between saving and investment, which is the common results of basic Feldstein Horioka model estimations for developing countries.

Hansan [1992] and Montiel [1994] argue that foreign Aid should be taken into account in estimating the saving-investment correlation regarding the fact that foreign Aid was usually used to finance national investments in many developing countries and that domestic investment do not depend only on domestic savings. The omission of this variable would make the investment function as misidentified.

External financing has played also an important role in financing investment and economic growth in Tunisia and Morocco. Since the adoption of the SAP, it plays a less important role and really serves only to the repayment of debt service.

According to economic theory the total investment is the sum of domestic savings and net external financing, and we will introduce in the Feldstein Horioka model [1980] The ratio of net external financing to GDP to show the structure of finance domestic investment, in other words, whether domestic investment is financed by foreign capital.

To better analyze financial integration, it is necessary to take into account the rise in foreign direct investment. Indeed, this type of financing is not debt creative, creates jobs, promotes technology transfer and stimulates growth.

The need for consideration of FDI to the extent of financial integration is that the most integrated countries are those that receive the largest FDI share. This is the case of Latin America and South East Asia.

We introduce foreign direct investment to GDP ratio in the baseline. The integration ratio of FDI to GDP in the base model FH (1980) shows whether FDI is sufficient to influence the mobility of capital in Tunisia and Morocco.

We introduce the ratio of worker remittances in baseline equation to assess whether the remittances are sufficient to influence the international capital mobility in Tunisia and Morocco and other term finance domestic investment.

By agreeing to these theoretical arguments, we estimate a model of Feldstein-Horioka increased, which aims to explain and argue some aspect of this paradox for developing countries in general and particularly Tunisia and Morocco.

The Augmented Feldstein Horioka model is as follow:

$$\left(\frac{I}{Y}\right)_t = \alpha + \beta_1 \left(\frac{S}{Y}\right)_t + \beta_2 \left(T * \left(\frac{S}{Y}\right)_t\right) + \beta_3 op + \beta_4 \left(\frac{FDI}{Y}\right)_t + \beta_5 \left(\frac{WR}{Y}\right)_t + \beta_6 \left(\frac{OAD}{Y}\right)_t + \varepsilon_t$$

$\frac{I}{Y}$: Ratio of domestic investment, $\frac{S}{Y}$: Ratio of domestic saving, OP : Trade openness , $\frac{FDI}{Y}$: Ratio of Foreign Direct Investment, $\frac{WR}{Y}$: Ratio of Worker Remittances, $\frac{OAD}{Y}$: Ratio of Official Aid of Development

We assume that the correlation between saving and investment is positive which is our measure of the degree of capital mobility in accordance with the criteria Feldstein-Horioka. Foreign Aid should have a positive impact on the investment rate. While foreign Aid is important, but omitted, this reduces the retention coefficient of savings would imply that the largest capital mobility than is actually the case. The interactive variable trend with the savings rate should be negative if capital mobility increases over time (that is to say, the coefficient on savings drop in some time).

The measure of economic openness, worker remittances and the FDI should have a positive impact on the investment rate.

Table 5. Estimation Results of Augmented Feldstein Horioka Model

	M(1)	M(2)	M(3)	M(4)	M(5)					
	Tunisia	Morocco	Tunisia	Morocco	Tunisia	Morocco	Tunisia	Morocco	Tunisia	Morocco
S	0.860 (4.22)** *	0.4911 (3.401)** *	0.58037 (2.28)** *	0.5259 (6.089)** *	0.471751 (2.076)** *	0.5090 (4.20)***	0.46952 (1.976)* *	0.48328 (3.538)** *	0.5184 (2.221)**	0.5206 (6.223)***
T*S			-0.0030 (-2.751)* *	-0.0027 (-4.66)***	-0.0023 (-3.348)***	-0.0009 (-1.935)*	-0.0013 (-2.227)**	-0.00287 (-1.897)*	-0.0038 (-3.019)**	-0.00257 (-3.622)***
OP			0.42560 (2.574)* *	1.5144 (6.675)** *					0.2845 (1.247)*** *	1.42919 (5.878)***
FDI					0.02554 (2.7408)** *	0.04998 (2.903)** *			0.0233 (2.374)**	0.0255 (1.9221)*
WR							-0.03469 (-3.045)** *	0.01243 (3.68)***	-0.0367 (1.103)*** *	-0.0208 (-1.701)*** *
OA D									-0.0291 (-1.730)*** *	0.00716 (0.681)*** *
R ²	61	59	72	81	77	68	78	72	82	81
DW	1.025	1.123	0.871	1.767	1.270	1.171	1.298	0.871	1.876	1.767
P(F- tat)	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table 5 presents the estimation results of both baseline and Augmented Feldstein Horioka model for Tunisia and Morocco. The model M (1) is the basic equation of Feldstein Horioka. The retention coefficient of saving in Tunisia is 0.861 for Morocco is lower 0.491. We can conclude that Morocco is relatively more financially open in comparison to Tunisia.

Model M (2) is an augmented model, in which we introduce trade openness and the interactive trend with the savings rate. The coefficients related to last variable is significantly negative, implying that the degree of mobility increased slightly in both countries. Trade openness positively affects the rate of investment in the two countries but also promotes greater financial openness in the case of

Tunisia (the correlation coefficient decreased from 0.8 to 0.58 while in Morocco remained constant (0.49-0.52)).

Model M (3) search to measure the effect of the inclusion of FDI. The introduction of this variable is irrelevant. On the one hand, these flows are a major source of financing of the economy, particularly investment that leads to a significant reduction in the retention coefficient of savings. In other words, FDI and domestic savings are the main sources of financing domestic investment, which reduces the strain of internal funding for these investments. This prediction is easily identifiable in the case of Tunisia, where FDI positively affect the rate of investment and at the same time strengthens the financial openness coefficient decrease (0.81 to 0.47). It should be noted that the impact on the investment rate is very low (0.02 and 0.04 for Tunisia to Morocco) reflecting the very small part of these financial flows in the economy of these countries.

The role of worker remittances is detected in the model M (4). In the case of Tunisia, this variable negatively affects investment, meaning that these transfers are assigned mainly to the consumption, and the altruistic motive is the argument most likely to send the funds to Tunisia. In the case of Morocco, the retention coefficient remains unchanged and transfers act positively on the rate of investment, thus providing an additional source of investment financing and the reason for sending in this country is rather an opportunistic pattern of investment.

The model M (5) is a model in which full grown we have introduced the most relevant variables in our analysis. Added to the trade openness, the trend, FDI and worker remittances, we reject foreign aid as a potential source of explanation of the degree of capital mobility. It follows from our estimates that transfers and subsidies are not significant. Consequently, the investment rate and the degree of openness are stimulated by economic liberalization and FDI flows. For these two variables Morocco stimulate investment level leaving unchanged the mobility of capital.

5. Conclusion

The objective of this paper was to measure and compare the degree of capital mobility in Tunisia and Morocco during the period 1975-2010. We used the approach of Feldstein and Horioka [1980].

In order to separate the impact of temporary shocks affecting the economy in the short term from the long-term relationship between saving and domestic investment, we adopt a representation of the Error Correction Model using the procedure of Engel and Granger. This model allows us to estimate a correlation coefficient of short term representing the measurement of the degree of capital mobility in Tunisia and Morocco. This coefficient is close to 0.4 indicating that Morocco and Tunisia are considered as half-open countries over their capital account.

In order to further develop our econometric macro econometric measurement of international capital mobility we precede to an extension of the basic model via an estimate of an augmented model in which we have introduced additional variables: trade openness, FDI, Worker Remittances and Foreign Aid. The results of the estimates show that these variables explain effectively the investment rate and especially the degree of financial openness. We conclude that the mobility of capital is stimulated mainly by the degree of economic openness and FDI.

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The ICT use in the implementation of Directive 2011/24/EU

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Abstract. *This article has as main objective to evaluate the role of information and communication technologies (ICTs), in particular the eHealth (electronic health), in the implementation of the directive 2011/24/EU, of the European Parliament and of the Council of March 9th, on the exercise of patients' rights in cross-border healthcare within Member States of European Union. Being currently underway the deadline for transposition of the Directive, it is important to analyze the probable results for national health systems. Innovatively, the Directive specifically proposes the implementation of a European network of eHealth in the provision of cross-border healthcare. Within ICT, we focus on telemedicine as a key tool for the implementation, on a context of public budgets constrains. In this context, it is assumed that the EU will support and promote cooperation and the exchange of scientific information between member states within the framework of a voluntary network composed by the national authorities responsible for health (or eHealth). We apply the S.W.O.T. (strengths and weaknesses, opportunities and threats) analysis to forecast the main points that should be focused on deeper research. We discuss the technological, economic and social aspects of the use of ICT on the implementation of the directive. It is thus important to evaluate the context of ICT by S.W.O.T. tool to define strategies to sensitize policy-makers, health managers, and citizens, in order to be able to turn threats into opportunities and mitigating the weaknesses in the implementation of the Directive and to promote a better healthcare access for citizens, ensuring safe, effective healthcare and with different quality.*

Keywords: health systems, ICT, European Union.

JEL Codes: I10, O30, O52.

1. Introduction

This article has as main objective to evaluate the role of information and communication technologies (ICTs) to health, in particular the eHealth (electronic health), in the implementation of the directive 2011/24/EU of the European Parliament and of the Council of March 9, 2011, on the exercise of patients' rights in cross-border healthcare.

Being currently under way the deadline for transposition of the Directive, it is important to analyze the opportunities and threats that the same result for national health systems, in particular in ICT.

It is important, here, to show that the directive covers the topic eHealth, eHealth to date becomes original throughout Community law published in the form of regulations and directives. In this context, it is assumed that the EU will support and promote cooperation and the exchange of scientific information between

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Member States (MS) within the framework of a voluntary network composed by the national authorities responsible for health (or eHealth) designated by the MS.

Moreover, each national health service presents its specifics that can be evaluated as strengths or weaknesses that may motivate or reveal barriers to the implementation of the Directive.

It is thus important to evaluate the context of ICT by S.W.O.T. tool to define strategies to sensitize policy-makers, health managers, and citizens, in order to be able to turn threats into opportunities and mitigating the weaknesses in the implementation of the policy and to promote a better healthcare access for citizens, ensuring safe, effective healthcare quality in different MS.

Thus, in Chapter 2, it is a short presentation of 2011/24/EU Directive; in Chapter 3, we examine ICT and the use of information in health. Chapter 4 applies the S.W.O.T. tool to cross-border healthcare and the use of ICT, and finally, Chapter 5 presents the main conclusions and future research.

1.1. Short presentation of Directive 2011/24/EU

The process of European integration, which started in the fifties of the last century, had not essentially any public health concern. Such a process was evolving and its essence was adapting and following the evolution of people, having now assumed health a top priority inside of the European Union (EU).

What we observe before the publication of Directive 2011/24/EU of the European Parliament and of the Council of March 9 (Directive) was, for example, the Regulation (EC) No 883/2004 of the European Parliament of April 29, which aimed to promote the movement of citizens in the EU, enhancing the mechanisms of coordination of national social security systems of the MS. The provisions of that Regulation only include the classic branches of social security and apply to the situation of citizens which stay in another EU country, other than the country where they reside, namely a temporary displacement within MS that can benefit from necessary medical services. It is for the legislation of the State where it is made to stay, the determination of the financial terms for the exercise of these services. However, costs are reimbursed by the social security agency of the country of origin. This right is created by the European health insurance card, which may be requested by each EU citizen.

It should be noted that the regulation mentioned above and in particular the EHIC presented some limitations from the perspective of access to cross-border healthcare, which the Directive 2011/24/EU of the European Parliament and of the Council of March 9 undertakes to complement. Moreover, the process of European integration, the issue of public health protection was almost forgotten until the signature of the Treaty on the Functioning of the European Union (Campos and Simões, 2011) [1]. More specifically, the EU health strategy “Together for health: a strategic approach for the EU 2008-2013” reflected in the white paper, came at a crucial time, i.e. shortly after the enlargement of the EU from 15 to 27 countries, and aims to obtain concrete improvements in health in Europe.

According to the study carried out by the Portuguese Health Regulation Authority (ERS), in 2012 [2], the Directive proposes to establish rules to facilitate access to cross-border healthcare insurance and quality in the EU, so as to ensure the mobility of patients and promote cooperation on healthcare between different in covering situations where the patient receiving healthcare in a Member State other than the Member State of affiliation as well as the situations of prescribing, dispensing and supply of medicinal products and medical devices, if these are provided as part of a health service.

Despite the promotion of cross-border healthcare, the Directive transposition into national laws and their application must not constitute an incentive for patients to treatments outside the respective Member State of affiliation.

It is important, here, to show that the Directive covers the topic eHealth (electronic health) assuming that the EU must support and promote cooperation and the exchange of scientific information between them in a part of a voluntary network composed by the national authorities responsible for health (or eHealth) designated by MS. Are still defined the goals of eHealth as well as the respective guidelines, and the European Commission to adopt the measures required for the creation, management and transparent operation of the network.

In the context of the goals of eHealth defined, the need to achieve a high level of trust and safety of the patient's clinical data stands out, the need to draw up guidelines on a non-exhaustive list of data to be included in the summaries on patients, which can be shared among health professionals, in order to allow continuity of care and promote patient safety across borders, and effective methods that allow to use the medical information for public health purposes and research; and in providing support to develop common measures on identification and authentication to facilitate the portability of data in the context of cross-border healthcare.

Thus, ICT in the line of health, in particular the eHealth, assumes a key role for the implementation of the Directives. ICT for health not only takes place in eHealth, it also includes health information systems and media and communication in health, so that such concepts will be discussed in the next section, however, giving special importance to that most influence the implementation of the Directive.

1.2. ICT and the use of information in health

For decades, the medical records on paper were the most common. Usually, the data were inserted by a doctor into a form. The access and mobility of information on paper were very limited. The paper was also the most used for the flow of information between the various players in the healthcare process: requirements of medicines and complementary diagnostic examinations, certificates and medical reports, communication of appointments or surgeries.

This paradigm changed and new forms of recording and using information gained space in the health sector. The change was made possible thanks to the development of ICT. Today, affordable technology exists to create and maintain complex information systems.

The registration of information about each patient is one of the bases of health information flows. The information stored about a patient may be used to detect patterns and build a story to a better understanding of the patient. The medical record can also be used as a memory aid and health professionals as a means of data transmission in health (between institutions or in monitoring the patient for several doctors, in collaboration). An electronic medical records system in full operation (with total elimination of paper-based records and access by multiple healthcare professionals) reduces medical errors and improves the efficiency and performance of the Organization. The potential from the use of ICT on health is mainly visible when treating patients with complex diagnoses that need cross-specialty care and substantial clinical information [3].

In addition to the improvement of the practice, the electronic medical record presents a unique opportunity to improve scientific research in health. The electronic medical record enables you to identify patients suitable for certain clinical trials and allows you to add information about the application of different

therapies (such as apply, in which patients, with what results). The difficulty is to reconcile the privacy of patients and the availability of data for scientific use.

As a first step, the electronic medical records were closed systems within each institution. The next step was to computerize communication between the health institution and third parties, as for example: between the institution of health and pharmacy or between the institution of health and laboratories and diagnostic examinations. That is, the computerized prescribing, medical report, communication between the doctor and the patient.

In fact, there has been a gradual replacement of the manual for a prescription electronic procedure, through which the doctor send medical orders directly to a computerized system. The electronic prescription is a prescription perfectly legible and complete. Shamliyan, Duval, Du & Kane (2008) [4] found that the use of electronic prescription of medicines, in the United States, is associated with a decrease of 66 percent of the total number of errors in prescriptions for adults. The health benefits are indisputable. The savings achieved can help fund the implementation of electronic prescribing systems.

When the electronic prescription is integrated into more complex information systems (for example, is inserted in the hospital system or on a network of different healthcare providers), you can speed up the implementation of doctor's order, directing the order directly to the recipient. The use of electronic prescription for other services besides medication has the same advantages of speed and correction of the request.

Despite the advantages, the introduction of electronic prescription is slow and more problematic than expected (Aarts and Koppel, 2009) [5]. The most common difficulties are: little interoperability between systems; the adoption of different systems for different suppliers, which discusses the adaptation of health professionals; difficult to use and systems without enough support from their departments.

The electronic medical record is complemented with new forms of communication between doctor and patient that allow new types of spatial organization of health services, by allowing the patient/patient contact without that they are in the same physical space.

Electronic medical records, electronic prescription and new forms of communication between health professionals and patients are already implemented hospital wide and inter-hospital, namely electronic medical records, electronic prescribing, telemedicine. The next step will be the implementation of these tools at transnational level, i.e. between different national health systems.

Telemedicine is pointed out as a solution for overcoming the distance issues between health actors. Telemedicine is understood as "the distribution of health services in which the distance is a critical factor and that health professionals use ICT for the exchange of information, for the diagnosis, treatment and prevention of disease or injury, research and evaluation, as well as in continuing education in public health; all this in the interest of the development of the health of the individual and their community "(WHO, 1998) [6]. An essential tool for telemedicine is the video conferencing that enables consultation, even if the patient and the doctor are not in the same physical space and allows you to assemble teams of health professionals from a distance. Telemedicine can be complemented with the use of robots, by means of the remote control. That is, a doctor may perform an intervention or examination with a device that controls remotely.

Literature shows that the specialties that use telemedicine the most are: pathology, surgery, emergency and trauma and radiology. Also it shows that the majority of telemedicine projects link health professionals, and only a few link professionals straight to patients (Salibaa et al., 2012) [7].

The new information and communication tools have great potential for integration of health services, but certain conditions of implementation and operation have to be safeguarded, in particular the level of

information security. The two fundamental aspects of data security in electronic health systems are: confidentiality and integrity (Cheng and Hung, 2006) [8].

Preserving the confidentiality involves the prevention of unauthorized or incorrect disclosure of patient data. The patient's concerns are essentially the embarrassing health information disclosure and unauthorized access by insurance companies, employers or creditors. It is important to avoid that the patient data be used illegally to discriminate for reasons of health.

Data integrity involves preventing unauthorized modification of data. It is as important for patients as for doctors. For patients, it is important that the data in their health records are not changed without a reason, by varying the medical decision and the success of therapy. For doctors, it is important that no one can change records without authorization, so that they can be a proof to verify the medical responsibility in clinical results. Confidentiality and integrity often go against a third aspect of health: availability data, which implies the accessibility of data and information when and where needed. This shock is due to the need for balanced information security with the need for access in a coherent way to ensure proper care, and this is not always an easy task, given the variety and quantity of personnel and entities included under the care of a patient.

We note the existence of a set of tools that are already being used by health systems and that can be adjusted to contribute to an effective implementation of 2011/24/EU Policy. The level of cross-border care, information and communication tools can contribute to greater integration of health systems in and for the prevention, diagnosis, treatment, monitoring and better management of public health.

Some experiences are already going on as presented by Doering et al. (2013) [9]. The project involved hospitals in the Netherlands, Germany and Switzerland. Authors identified a set of variables that contribute to the success of the project, namely: the motivation for the project, the recognition of existing benefits and the carefully implementation of the project.

The European Space Agency (ESA), the International Telecommunications Union (ITU) and the WHO developed the Telemedicine Alliance project. The project produced several recommendations for achieving interoperability between national health ICT systems [10].

In the EU, we have some examples of aspects of the health sector which are increasingly integrated. The most relevant is the sector of drugs. With the creation of the EMEA (European Medicines Agency), in 1995, the Union moved into a system of centralization and homogenization of the drug market. In addition to the centralized procedure for marketing authorization for medicinal products, EMEA works in conjunction with the national agencies in sharing information about medicine. At this point, it is possible for any European citizen information online about any medicinal product authorized by the centralized process.

2. S.W.O.T. analysis on the use of ICT for cross-border healthcare

The S.W.O.T. analysis is usually a tool of strategic audit of an organization and its environment. It must be one of the first steps of planning, focusing on the key issues. S.W.O.T. stands for the 4 dimensions of analysis: Strengths and Weaknesses (internal factors), Opportunities and Threats (external factors). Despite being initially designed to be used in strategic business planning, it was adapted and used in addition to the business context (Andrews, 1980 [11]; Hill and Westbrook, 1997 [12]). In this section, we adapt the S.W.O.T. analysis to the analysis of the use of ICT, for an effective implementation of the directive EU/24/2011. Our main goal is to systematize a set of parameters that may influence our outcome, in order to provide an improved path for studying the subject and to support on policy making.

As shown earlier, the directive explicitly refers to the online health resource, including eHealth, revealing a possible force to the implementation in healthcare. A wide path has already been traveled by MS at national level in the implementation of ICT in healthcare. And the trend towards the use of ICT in healthcare is growing. Take advantage of this "installed capacity" and this technological movement in support of ICT, are forces to the use of ICT in policy implementation. However, for this to be possible electronic tools compatible for transfer of information between countries must have available. It should be noted that such a situation might reveal a weakness in the implementation of the policy, if in possession of disparate and incompatible electronic media in the transfer of information related to users.

In addition to the compatibility and standardization of computer systems for the sharing of information, proves to be necessary to make available, by electronic means reliable, secure and quality, relevant clinical information and standardized, as well as the personal health records of citizens/patients. A recommendation report of PwC for the European Commission (PwC, 2012) [13] exposed that the majority of websites of the National Contact Points do not present the information types that are included in the Directive. This is an obligation of the MS that is not accomplished yet. The accessibility of information is crucial for both professionals and patients.

However, we should recall that the EU countries find themselves in a context of economic recession which may delay/prevent investment in new ICT solutions in health. This may not happen if it is demonstrated the efficiency gain in the use of information technologies. It is thus a priority for the implementation of the policy of investments in ICT in order to create synergies and economies of scale. Let us remember that internationally, the potential of information technologies for the provision of more effective healthcare is recognized (Espanha, 2010) [14]. A relevant factor is the distinct working methods undertaken by health professionals who may be a barrier to the use of ICTs in health. One way to overcome this obstacle is that ICT will need to demonstrate efficiency gains, and they have to be more users friendly and promote quality healthcare and effective so that healthcare professionals are encouraged to use them. Another issue is the aptitude to adopt and accept a new technology that is not equal in the EU countries. The "Special Eurobarometer 382 - Public Attitudes towards Robots" [15] showed that, on the average, 22% of the European citizens are favorable to the use of robots in healthcare, but 27% are against it. However, the differences between countries are considerable (from 8% to 38%, for favorable and from 14% to 53%, for unfavorable)

The various health systems were outlined, in general terms, in the light of two models: (i) the Bismarck's model and (ii) the Beveridge model, originating in Germany and United Kingdom, respectively. In essence, both advocate the principle that healthcare should not depend on the ability to pay, and therefore the associated income contribution. In addition to the common essence, in fact, all have their own characteristics that could put barriers to policy implementation, so you will need to create concrete implementation rules the same for national health systems do not overlap the right of movement of patients in cross-border healthcare. In 2012, the "Commission Staff Working Document on the applicability of the existing EU legal framework to telemedicine services" was released [16] that discusses several legal issues that are still unsolved and that are important for the implementation of the Directive.

And, finally, with regard to cultural and linguistic issues in the EU, you may remember that mainly multilingualism has been part of politics, Community legislation and practice since the time of the Treaty of Rome. As a number of policies were evolving, multilingualism is also emerging as an element of the EU's external policies, as highlighted by the Euro-Mediterranean Summit of the Ministers of culture. It is evidenced that the two general objectives of multilingualism policy includes, on the one hand, enabling citizens to be fluent in two languages in addition to their mother tongue (a goal called "mother tongue plus

two languages”), and on the other hand, to sensitize the citizens to the linguistic diversity of European society and make it an asset for intercultural dialogue and competitiveness. Therefore, the possible weakness that could be put as a barrier to the implementation of the Directive is already a generic strategic policy within the European integrator block. In fact, European integration has not evolved towards the adoption of a common language. Such contingency imposes the use of translation services, which in health can be even more demanding due to the technicality of the language employed. If, at the level of communication among professionals such a problem may not be very relevant (given that the scientific dissemination is done in English, running this as a *lingua franca* for this area of knowledge), the problem is most relevant in developing information systems that put in contact professionals and patients from various countries.

Finally, the health conditions of populations of different countries, namely the prevalence of diseases and general health state, are distinct due to geographical differences, cultural, food and lifestyles. Such differences can be a real obstacle to a full implementation of the directive. In this field, the potential for information sharing of eHealth is essential to enable health professionals to deal with less common health problems in their countries of origin.

<p style="text-align: center;"><u>Strengths</u></p> <ul style="list-style-type: none"> • The Directive 24/2011/EU explicitly mentions the use of <i>eHealth</i>. • Instruments used in healthcare in MS. • The growing trend in international trade, in the use and promotion of ICT in health. 	<p style="text-align: center;"><u>Weaknesses</u></p> <ul style="list-style-type: none"> • Disparate electronic tools and sometimes incompatible for transferring information between the MS. • Diversity in health systems in MS. • Distinct working methods undertaken by health professionals. • The directive does not resolve the question of linguistic or cultural differences.
<p style="text-align: center;"><u>Opportunities</u></p> <ul style="list-style-type: none"> • New model of the relationship between the citizen and the health professionals, based on information sharing. • Standardization of tools in use in MS. • Standardization of patient information. • The implementation of the directive can press the use of ICT as demonstrated the efficiency gain. • The need arises to create computer tools more <i>user friendly</i>. 	<p style="text-align: center;"><u>Threats</u></p> <ul style="list-style-type: none"> • Possibility not to make available, by electronic means, of quality and secure trusted, relevant scientific information, as well as the personal health records of citizens. • Possibility of delay of complete and up-to-date reporting to users and health professionals. • Context of economic recession which may delay/prevent investment in new ICT solutions. • Investments in ICT that do not create synergies and economies of scale. • Differences in the prevalence of diseases and general health state, in MS.

Fig. 1: S.W.O.T. analysis

A detailed analysis of the elements of the table should now establish S.W.O.T. strategies to leverage the strengths and minimize the weaknesses, seize opportunities and overcome the threats. In this way, it is hoped to contribute to an effective implementation of the directive, maximizing the contribution of ICT in the process.

The implementation process will have to deal with the diversity of health systems, health states, working methods and use of ICT, in MS. For such diversity to be exceeded, the directive implementation strategy should be based on standardization and unification of systems and tools. ICT can play a key role, because the standardization can happen in back office, without which you feel unsafe or threatened before major changes of their workout routines.

The implementation process should involve health professionals, on two levels: on the delineation of common tools at EU level and in the mutual knowledge of the systems and tools used in each of the MS.

A phased implementation is strategically preferable so as to create a virtuous cycle of accession to eHealth, facilitating the implementation of this Policy. In fact, if every step is demonstrated the potential for synergies and economies of scale of the use of ICT, it will be easier to get the commitment of and pressing the use of ICT in health, boosting the results at national and EU levels. It is important that investments, especially in a context of economic austerity, should be socially profitable for such economies may be ready by stakeholders and policy-makers.

3. Conclusions

With this article, it was intended to consider strategically how ICT for health, in particular the eHealth and telemedicine, could contribute to an effective implementation of Directive 2011/24/EU of the European Parliament and of the Council of March 9th, on the exercise of patients' rights in cross-border healthcare.

An institutional policy framework, with particular focus on the treatment of eHealth in the document, is presented to better understand this issue. Then, the paper points out the ICT solutions in health, in particular telemedicine, and how ICT may play a crucial role on the implementation of the directive.

Finally, we devise a S.W.O.T. analysis and settle the main policy implementation strategies, using ICT. We should notice that the implementation of the Directive does not depend solely on ICT. However, it demonstrates that ICTs can have a fundamental role in the provision of cross-border healthcare, if the investments in technological infrastructure can achieve economies of scale that demonstrate their social profitability. The diversity of realities may hinder the implementation of the policy, and should the effort be channeled for the standardization of systems and involvement of professionals.

The integration of the ICT tools may result on a real cross-border eHealth system. Any eHealth relies on internet usage, so that the European system cannot be different. Such a system would have to ensure the safe and rapid information sharing between professionals, between professionals and patients. But, to ensure maximum effectiveness and efficiency, it would have to go beyond the flow of information and be a platform for delivery of health services with value for patients and for the MS.

The future research should focus on the analysis of the different systems of each country, in order to allow a diagnosis of differences to alleviate and vicinity to enhance.

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Employee motivation and organizational performance

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Abstract. *The majority of organizations are competing to survive in this volatile and fierce market environment. Motivation and performance of the employees are essential tools for the success of any organization in the long run. On the one hand, measuring performance is critical to organization's management, as it highlights the evolution and achievement of the organization. On the other hand, there is a positive relationship between employee motivation and organizational effectiveness, reflected in numerous studies. This paper aims to analyze the drivers of employee motivation to high levels of organizational performance. The literature shows that factors such as empowerment and recognition increase employee motivation. If the empowerment and recognition of employees is increased, their motivation to work will also improve, as well as their accomplishments and the organizational performance. Nevertheless, employee dissatisfactions caused by monotonous jobs and pressure from clients, might weaken the organizational performance. Therefore, jobs absenteeism rates may increase and employees might leave the organization to joint competitors that offer better work conditions and higher incentives. Not all individuals are the same, so each one should be motivated using different strategies. For example, one employee may be motivated by higher commission, while another might be motivated by job satisfaction or a better work environment.*

Keywords: motivation, organizational performance, empowerment.

JEL codes: M54.

1. Introduction

All organizations want to be successful, even in current environment which is highly competitive. Therefore, companies irrespective of size and market strive to retain the best employees, acknowledging their important role and influence on organizational effectiveness. In order to overcome these challenges, companies should create a strong and positive relationship with its employees and direct them towards task fulfillment.

In order to achieve their goals and objectives, organizations develop strategies to compete in highly competitive markets and to increase their performance. Nevertheless, just a few organizations consider the human capital as being their main asset, capable of leading them to success or if not managed properly, to decline. If the employees are not satisfied with their jobs and not motivated to fulfill their tasks and achieve their goals, the organization cannot attain success.

People have many needs that are continuously competing one with another. Each person has a different mixture and strength of needs, as some people are driven by achievement while others are focusing on security. If the managers are able to understand, predict and control employee behavior, they should also know what the employees want from their jobs. Therefore, it is essential for a manager to understand what really motives employees, without making just an assumption. Asking an employee how he feels about a particular situation does not provide an accurate evaluation of his needs, as the interpretation could distort

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the reality itself. The closer one gets his perception to a given reality, the higher is the possibility to influence that specific reality. Thus, managers can increase their effectiveness by getting a better grasp on the real needs of the employees.

2. Literature review

Bartol and Martin (1998) consider motivation a powerful tool that reinforces behavior and triggers the tendency to continue. In other words, motivation is an internal drive to satisfy an unsatisfied need and to achieve a certain goal. It is also a procedure that begins through a physiological or psychological need that stimulates a performance set by an objective.

As compared to financial resources, human resources have the capability to create competitive advantage for their organizations. Generally speaking, employee performance depends on a large number of factors, such as motivation, appraisals, job satisfaction, training and development and so on, but this paper focuses only on employee motivation, as it has been shown to influence to a significant degree the organizational performance. As Kalimullah (2010) suggested, a motivated employee has his/her goals aligned with those of the organization and directs his/her efforts in that direction. In addition, these organizations are more successful, as their employees continuously look for ways to improve their work. Getting the employees to reach their full potential at work under stressful conditions is a tough challenge, but this can be achieved by motivating them.

On the other hand, Mary (1996) explains organizational effectiveness as the extent to which an organization fulfills its objectives, by using certain resources and without placing strain on its members. The goal model defines organizational effectiveness referring to the extent to which an organization attains its objectives (Zammuto, 1982), while the system resource model defines it in terms of the bargaining power of the organization and its ability to exploit the environment when acquiring valuable resources (Yuchtman, 1987).

2.1. Theory X and Theory Y

According to McGregor, a traditional organization, which has a centralized decision-making process and a hierarchical pyramid, is based on several assumptions about human nature and motivation. These assumptions are called Theory X by McGregor and consider that most people want to be directed, they do not want to assume responsibility and value safety above all. Moreover, this philosophy assumes that people are motivated by financial means and by the threat of punishment. Managers who embrace this theory are likely to supervise and control their employees, as they feel that external control is needed when dealing with irresponsible people.

Nevertheless, McGregor started to question the validity of Theory X, especially in the context of the contemporary and democratic society. Using Maslow's hierarchy of needs, McGregor concluded that Theory X is not universally applicable, as its assumptions about human nature are in many cases inaccurate. In addition, most of the management practices developed from these assumptions failed to motivate individuals to work for attaining the organizational goals. McGregor highlighted that these methods are not applicable to people whose physiological and safety needs are satisfied, while social esteem and self-actualization needs are becoming more important. Moreover, he considers work very similar to play, as both are physical and mental activities. Nevertheless, under Theory X management, there is a clear distinction between them, as on the one hand play is controlled by the individual, while on the other hand work is controlled by others. Therefore, people look for any excuse not to go to work, in order to satisfy social and self-actualization needs, especially if they have enough money for the basic needs. Under these circumstances, people do not find work challenging at all and consider it more like a necessary evil.

On the other hand, Theory Y practices focus on creating a pleasant work environment and aligning the individuals' goals with the organizational goals. In these organizations, the productivity levels are high and people come to work gladly, as the works satisfy their superior needs. This theory considers that people are not lazy and unreliable. On the contrary, it assumes that people can be self-directed and very creative, if they are motivated properly. Subsequently, one of the main tasks and challenges for management is to exploit the

full potential of each employee. Motivated people will achieve their own goals by focusing on attaining the organizational goals.

Nevertheless, we cannot draw the conclusion that Theory X is bad and Theory Y is good. On the contrary, these theories are attitudes towards employees. Although, generally speaking, a manager should base his/her assumptions on Theory Y, there are cases in which a directive and controlling behavior is required, as to help some people develop, until they become creative and self-directed. One employee may be motivated in his work with higher commissions, whereas other employees may be interested in a better working environment (Tietjen & Myers, 1998).

2.2. Pattern A and Pattern B

Chris Argyris has identified and discussed behavior patterns A and B, in addition to Theory X and Y. On the one hand, Pattern A reflects the interpersonal behavior, group dynamics and organizational norms that are associated with Theory X, while on the other hand, Pattern B represents the same phenomena but associated with Theory Y. Pattern A individuals are not open, reject experimenting and do not perform properly in teams. In contrast, Pattern B employees are open, enjoy experimenting and also encourage others to act similarly. Even if Theory X is usually associated with Pattern A individuals and Theory Y with Pattern B individuals, some managers could be XB or YA. XB managers have negative assumptions about employees, but they usually are supportive and encourage individuals to be creative, as they have learned from experience that in this way they will increase productivity. In addition, XB managers engage in supportive behaviors, as they want to integrate in the organizational environment. On the other hand, YA managers control and supervise people, although they generally assume people are independent and self-motivated. These managers use pattern A behavior as they are trying to help individuals develop the skills and competencies needed for creating an environment where they can act as YB managers (Hersey et al, 2001).

2.3. Informal work groups

Generally speaking, informal work groups have the power to control the behavior of their members and therefore, influence the level of productivity. George Homans developed a model of social systems to explain from where their power comes to influence individuals' behavior. Homans identified the three elements that compose a social system: activities, interactions and sentiments. Activities are the usual tasks employees perform, interactions are the behaviors between people while performing the tasks and the sentiments are the attitudes that occur between individuals. Although these concepts are distinct, there is a strong and mutual dependency between them. As a result, any change that happens in one of these elements will influence the other two.

In any organization, certain activities, interactions and sentiments are required from its members otherwise they would have to leave. Therefore, certain activities should be done by people that work together and be satisfying for people to continue working within the organization. As people work together they develop sentiments, therefore it is essential to create the premises for developing positive sentiments. Moreover, if the sentiments are becoming more positive, people will enhance the interactions between them. If this process continues, people will develop similar sentiments and behaviors. Once the cohesion of the group increases, the group will also develop expectations and norms that highlight the accepted behavior of the people in specific circumstances.

Therefore, if the group is significantly cohesive, the members would not want to leave and they will embrace the norms quickly. If there are situation when people deviate from the norms, they will be either sanctioned or forced to leave the organization. A strong informal group should not be seen as an issue for the

organization, as it can help improve the overall performance. Therefore, it is essential to help them integrate and align their own goals with the ones of the organization.

3. Increasing interpersonal competence

Management based on Theory X assumptions is still widely practiced, although McGregor and others consider it as being outdated. Therefore, there are many companies that still use it today, although it considers people as being immature and lazy at the workplace. Argyris considers that bureaucratic-pyramidal values lead to poor and superficial relationships between the members of an organization. Moreover, these relationships are not authentic and lead to low interpersonal competence, as they do not allow the natural expression of feelings. Further on, Argyris points out that an environment that is not psychologically safe is a proper ground for conflict, rigidity and low performance.

On the other hand, if management emphasizes on humanistic and democratic values, authentic relationships developed on trust will develop among people, leading to higher interpersonal competence and organizational competence. In such an environment, people are given the opportunity to develop to their full potential and management strives to create an exciting and challenging environment. The members of the organizations are treated as persons with a complex set of needs and are given the chance to influence the way in which they relate to work and environment.

The bureaucratic-pyramidal values that dominate most organizations have lead to many issues. Therefore, individuals have to change in order to make the transition toward mature people. First, they need to move from a passive attitude to a state of activity. Next, they should develop to a state of relative independence and start behaving in many ways. Moreover, the members should develop deeper and stronger interest, while having a long-term perspective. While in traditional organizations members are subordinate to everyone, they should move to equal or superior positions as adults. Last but not least, the individuals should not only become aware of themselves but also be able to control themselves. Although these changes are only broad tendencies, they provide insightful information regarding the matter of maturity. The norms developed inside the groups limit the expression and the growth of individuals, but the natural tendency is to move towards maturity with age. Nevertheless, there are a handful of persons that are able to develop to full maturity.

In most of the cases, employees do not develop to maturity due to management practices that give them minimal control and independence, rather than because they are lazy or lack self-awareness. Usually, organizations are created to achieve certain objectives, so employees are fitted to the job. Moreover, the management of these organizations tries to increase organizational and administrative efficiency by transforming the workers into interchangeable parts. Decision-making is held by several persons from top management and the rest of the members are strictly controlled through budgets, incentive systems or standard operating procedures. The jobs are designed in such a way that makes work unchallenging and repetitive.

As I have already pointed out, needs such as esteem and self-actualization are more important for people as they develop. Herzberg (1964) identified two different categories of needs: hygiene factors and motivators, which are independent and influence behavior in different ways. People that are dissatisfied with their jobs are concerned about the work environment, while satisfied individuals feel comfortable with their jobs. The first category (hygiene factors) refers to organizational policies, supervision, working conditions, money security or interpersonal relations. Although these factors are not an intrinsic part of the job and they do not influence the worker's output capacity, but they prevent low performance due to work restrictions. On the other hand, the second category is represented by factors that involve feelings of achievement, professional growth and recognition. These factors do not only have a positive effect on job satisfaction, but they also increase one's total output capacity. When hygiene factors are satisfied, they will eliminate dissatisfaction and work restrictions, but they have no impact on achieving superior performance. On the other hand, enhancing the motivators will help an individual to grow and develop. Therefore, hygiene factors influence an individual's willingness and motivators affect an individual's ability.

If one knows the high-strength needs of the individuals, it is possible to set the goals that will create the environment to motivate those persons. Similarly, if one knows the goals of those individuals, one can predict their high-strength needs. These predictions are possible as it has been demonstrated that money and benefits satisfy needs at the physiological and security levels, interpersonal relations and supervision are hygiene factors that satisfy social needs, while increased responsibility, challenging work and growth are motives that satisfy needs at the esteem and self-actualization levels.

In addition, people with high achievement motivation tend to be interested in the motivators. People who are motivated with achievements want to know how well are performing their tasks. Oppositely, people with low achievement motivation are concerned about the work environment and want to know how others perceive them rather than their job efficiency.

Taking into account overspecialization leads to repetitiveness and low levels of motivation, researchers have researched ways to enhance the job satisfaction. Therefore, workers could gain more satisfaction at work if the managers enlarge their jobs (job enrichment). In other words, the number or the variety of tasks should be increased for the employees, as this will also increase their level of performance. In order to achieve these results, the tasks should be redesigned and the workers should be given more responsibility (horizontal and vertical job expansion). In order to foster growth and maturing, both horizontal and vertical job expansion are required. If people are involved in the planning, organizing, motivating and controlling of their own tasks, they will satisfy their esteem and self-actualization needs, and increase their performance.

Managers should be aware of the differences between motivation and satisfaction. On the one hand, motivation is influenced by forward looking perceptions about the relationship between performance and rewards, while on the other hand, satisfaction is the result of past events and refers to people's feelings about rewards they have received. Therefore, this distinction is important when trying to improve the organizational performance, as they need to focus on all the possible means to enhance motivation.

In order to sustain their competitive advantage, nowadays organizations have to adapt to the latest technologies and to face globalization. As Ford (2005) noticed, the inevitable challenges that organizations face are the economic, social, political and technological changes, all of them taking place in the external environment. Nevertheless, adapting to these changes can be an opportunity and a source of motivation for sustaining the competitive advantage. All these changes have a direct and significant impact on the employee motivation, as the organizations need to invest into getting the most intelligent and committed workers. However, managers are reluctant to redesigning the work place, as they either distrust the employees, have financial issues or the levels of ambiguity are high. The most used strategies to reduce costs are the implementation of new technologies, cutting down the number of employees and outsourcing. These changes in the internal environment might have a negative impact on employee motivation, as they might feel that the organization is becoming less loyal and dependable to them (Boldman et al, 2003).

4. Factors enhancing employees' motivation

Employees want to earn reasonable salaries, as money represents the most important incentive, when speaking of its influential value (Sara et al, 2004). Financial rewards have the capacity to maintain and motivate individuals towards higher performance, especially workers from production companies, as individual may use the money to satisfy their needs. Therefore, pay has a significant impact in establishing employees' diligence and commitment, being a key motivator for employees. Nevertheless, studies have shown that pay does not boost productivity on the long term and money does not improve performance significantly (Whitley, 2002). Moreover, focusing only on this aspect might deteriorate employees' attitude, as they might pursue only financial gains. Fortunately, there are other non-financial factors that have a positive influence on motivation, such as rewards, social recognition and performance feedbacks.

Numerous researches have also pointed out that rewards lead to job satisfaction, which in turn influence directive and positively the performance of the employees. Moreover, rewards are one of the most efficient tools of management when trying to influence individual or group behavior, as to improve organization's effectiveness. The vast majority of companies use pay, promotion, bonuses and other types of rewards to motivate employees and to increase their performance. In order to use salary as a motivator, managers have

to develop salary structures, according to the importance of each job, individual performance and special allowances.

Employees can also be motivated through proper leadership, as leadership is all about getting things done the right way. In order to achieve these goals, the leader should gain the employees' trust and make them follow him. Nevertheless, in order to make them trust him and complete their tasks properly for the organization, the employees should be motivated (Baldoni, 2005). The leaders and the employees help one another to attain high levels of morality and motivation.

Trust represents the perception of one individual about others and his willingness to act based on a speech or to comply with a decision. Therefore, trust is an important factor for an organization that wants to be successful, as it has the ability to enhance employees' motivation and foster interpersonal communication.

Irrespective of the degree of technical automation, attaining high levels of productivity is influenced by the level of motivation and effectiveness of the staff. Therefore, developing and implementing employee training programs is a necessary strategy to motivate workers. In addition, a good communication between the managers and the workforce can instigate motivation, as the degree of ambiguity decreases.

4.1. Empowerment and organizational performance

Empowerment is defined according to Bennis (1989) as an approach to leadership that empowers subordinates as a main constituent of managerial and organizational effectiveness. Moreover, employees are given authority and the freedom to make decisions, which encourages them to discover and use their full potential. Having more control over their own jobs is the main driving force of empowerment that encourages growth and better productivity. Therefore, the empowerment process focuses on solving the problems of the organizations by people. Furthermore, empowering makes workforce feel appreciated and that their feedback on performance is valuable for the organization. The contribution of the employees and their participation in designing the organization are essential for the well-being of the organization, as individuals should do efforts in the environment where they are responsible for their actions.

Empowerment gives people responsibility and authority to act as if they are in control of their own destinies. It is essential for an organization to recognize the quality and the results of the employees' work, as next time they will be even more efficient to get more recognition.

Employee participation and empowerment is about the contributions of the employees in administration and decision-making regarding the policies, objectives and the strategies of the organization. Studies have shown that employees' perception of the goals and the norms of the organization are positively related to employee motivation. Taking into account that high levels of motivation can be achieved through empowerment, this process also leads to organizational growth.

Customer satisfaction can also be achieved through empowerment, as employees can make quick decisions to solve the problems without having to ask the manager what to do. Moreover, increased autonomy increases the productivity and enhances their capabilities and motivation to accept new challenges and solve them. Proper remuneration and empowerment combined are imperative if an organization wants to obtain greater dedication and trust from its members. If the employees are loyal to the organization and highly motivated, superior levels of effectiveness and growth can be achieved by the organization.

Employee involvement and empowerment are two aspects that should not be overlooked as it increases commitment and understanding. Therefore, employees will be less likely to be resistant to changes and not only feel valued by the organization, but also come up with important information, as they are in direct contact with the customers or with the operational processes.

On the one hand, autocratic leadership and top-down decision-making create a rigid work environment where employees are given orders to achieve certain tasks. In these organizations, innovation is suppressed and motivation decreases, which has in turn a negative impact on performance. On the other hand, satisfied and motivated employees will contribute to enhanced organizational productivity, which leads to better profits.

5. Concluding remarks

People seek security and the underlying needs are fundamental to people's existence. After these needs are satisfied, people will focus more on job performance. People also see social systems, so the sociability aspect of effective organizations cannot be neglected. Last but not least, personal growth is also important to people, as self-actualization and the need for achievement and growth are very powerful needs that influence the development of effective organizations.

Management should evaluate employee suggestion scheme and use the feedback from the workforce to improve the organizational environment and fulfill their needs and skills. People are different and they are motivated by diverse needs, such as physiological needs, safety requirements and self-actualization needs. Thus, focusing on employees at every level of the workforce and analyzing each department of the organization will provide detailed accurate information regarding the needs of employees.

A motivated and qualified workforce is essential for any company that wants to increase productivity and customer satisfaction. In this context, motivation means the willingness of an individual to do efforts and take action towards organizational goals. The challenge for any manager is to find the means to create and sustain employee motivation. On one hand, managers should focus on reducing job dissatisfaction (working conditions, salary, supervision, relationship with colleagues), while on the other hand should use motivating factors such as achievement, recognition, responsibility and the work itself.

Employee participation and empowerment do not only enhance efficiency, growth and innovation but they also increase employee motivation and trust in the organization. If employees feel appreciated for their work and are involved in decision-making, their enhanced enthusiasm and motivation will lead to better productivity and loyalty.

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Learning about volunteering – a path to personal development

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Motto: “*The best way to find yourself, is to lose yourself in the service of others.*” ~ Ghandi

Abstract. *The paper aims to analyze the relationship between volunteering and personal development in early stage of professional life. The ‘learning by experience’ form of education has been gaining momentum lately among the young generation, along with the concept of non-formal and informal education, as it is less restrictive and has no specific objectives in terms of learning outcomes. This type of informal education may improve people’s employability and career prospects, strengthen the sense of solidarity and enhance active citizenship and the young people should be encouraged and supported in getting awareness of this fact.*

Keywords: formal learning, informal learning, non-formal education, volunteering, personal development.

JEL codes: I25, O15, Z13, Z19

1. Introduction

Young people are constantly engaged in formal and non-formal learning processes. It is obvious that they would like to acquire new skills, to develop their abilities and competencies in order to fit into the society and to contribute to their own personal and professional development as much as to the societal development. During their youth, people learn to become responsible for their own life paths and to give something back to those who help them to grow: parents, friends, teachers, society. Learning is a process that never ends and involves a lot of effort and commitment from learners during their entire life. Non-formal learning tends to become more popular, one of the reasons is that it is not organized or restrictive, it has no specific objective in terms of learning outcomes, and it is not intentional from the learner’s perspective. It refers to learning by experience or just having an experience that build some skills. Non-formal education means that individuals are constantly exposed to learning situations, at work, at home or during leisure time for instance, and they acquire knowledge doing things. This definition, with a few exceptions [6] also meets with a fair degree of consensus. Volunteering is often considered as informal education for various reasons: it exposes the individual to learning situations, it improves people’s employability and career prospects, it strengthens the sense of solidarity and enhances active citizenship [4].

2. Volunteering today

2.1. What does volunteering mean in Europe nowadays?

Volunteering activities in EU have not had the expected development as we, the Europeans, would think. EU Commission understood the importance of volunteering and has taken action: a decision in favour of the European Year of Voluntary Activities Promoting Active Citizenship (2011) boosted volunteering at

the EU level. A lot of Youth Actions were designed to support and to encourage volunteering in any forms and the results became more visible.

EU official documents stated the conceptual framework of volunteering, described as “*a vehicle for individuals and associations to address human, social, intergenerational or environmental needs and concerns, and are often carried out in support of a nonprofit organization or community-based initiative*”. Voluntary engagements do not replace paid work, or professional development opportunities but add value to the society.

It is not necessary to focus on words that best define volunteering as far as “civic participation” term is understood in a very broad sense that incorporates also volunteering.

The degree of involvement in volunteering is quite different across EU, some studies were conducted in order to evaluate the volunteering rate. The volunteering rate is calculated as follows: the number of people volunteering as a percentage of a country’s entire population or a group of the population. Apart from the statistical definition of the volunteering rate, it is always important to take into consideration the cultural differences inside EU. For example, if volunteering for the family takes priority in a country, this would explain, for example, why these people have less time for formal volunteering in organizations. Also, looking at the current statistical data on citizens’ volunteering behavior one can easily identify the national differences. Accordingly, the “European Social Reality“ survey (Eurobarometer- 2011) , published in October 2011, came to the conclusion that involvement in volunteering is very widespread in the Netherlands, where more than half the respondents carry out a voluntary activity (57%), 31% on a regular basis. This is also the case in Denmark (43%, 21% on a regular basis). More than one-third of the respondents are involved in a voluntary activity in Finland (39%), Austria (37%), Luxembourg (35%), Germany (34%) and Slovenia (34%) are the countries where most people volunteer. The Lithuanians (11%) and Portuguese (12%) volunteer the least.

Going deeper and trying to identify the types of volunteering activities most popular in the EU, the above-mentioned survey succeeded to fall into several categories such as:

- most of the European volunteers (24%) are engaged in voluntary work in a sports club or a club for outdoor pursuits.
- cultural or artistic associations (20%),
- charitable organizations or social aid organizations (16%),
- community or neighborhood associations (13%), and religious organizations (12%).
- organizations for the protection of the environment, animal rights, etc. (7%),
- associations or clubs for the elderly (7%) and for young people (7%),
- associations defending the interests of patients and/or of disabled people (6%).
- professional organizations, trade unions and political parties are cited least (5% or less).

The conclusion is that there is a lot of room for improvements in making volunteering more popular and attractive not only for young people but also for a various range of age cohorts that are willing to act as active citizens in Europe.

2.2. Why volunteering today?

One can become a **volunteer** having in mind various reasons: the desire to learn new skills, to have fun or make a difference in a certain cause, they believe in. The degree of involvement is quite different from person to person, some have time to spend and they want to spend it for a good cause and in their own benefit, others are less committed and they allocate time to volunteer only because they think it will be beneficial for their future career, or just because their peers are doing this. Most of them are completely devoted to the cause, while others simply want to do what they can to help others to live a better life. Volunteers often witness a memorable life changing experience which made them better persons and that means they shaped their character through a valuable learning experience. What have they learned while

volunteering? Well, they are no more ignorant of the problems facing the world, they become more confident and courageous when they confront difficulties for the first time, and their communication skills are better.

Volunteering is generally considered an altruistic activity and it is intended to promote good or improve human quality of life.

Also, volunteering means to interact with other young people sharing the same values and been engaged in the same type of activities, the learning process occur in working together, exchanging previous experiences and their results and that signifies actually learning by doing. 'Learning by doing' is considered the most efficient way of acquiring knowledge and the easiest too in terms of intellectual effort.

Looking at the personal growth, the testimonials are focused on the fact that the volunteers are becoming more compassionate, they bound more easily with less fortunate people and become aware of what they already got and more appreciative and responsible toward those who made this possible (parents, school, organizations and society).

Recent studies revealed the fact that volunteering generates a high emotional involvement that will drive people to volunteer again in the future, not necessarily in the same project, and not necessarily at the same scale of time allocation.

Also, volunteering goes beyond the beneficiaries' gain and benefits. Volunteering has the ability to give back on other levels. Some psychological studies demonstrate that volunteering can have a direct effect on the chemicals of the brain. Being socially engaged in cognitive activities - such as volunteering- in midlife and early late life may avoid risks for Alzheimer disease and dementia. Experience Corps organization (<http://www.aarp.org/experience-corps/>) has identified the characteristics of volunteering and how they work at the brain level too. The conclusion posted on their website is that: "giving back to your community may slow the ageing process in ways that lead to a higher quality of life in older adults".

Fostering the culture of volunteering among the young generation is important for individuals in their future older age as well as for society, so reasons for becoming a volunteer were listed, and the most relevant are : make new friends, explore careers and personal interests, earn recommendations for future employment applications, develop job skills, build a strong résumé in early stage of personal development, learn in a non formal manner, discover hidden skills and talents, build self-confidence, and make a difference.

2.3. Personal development as a result of volunteering

In order to demonstrate the close relationship between personal development and volunteering, the UK National Youth Agency has conducted a research on young people's volunteering and skills development. The research report examines the relationship between skills development and volunteering as an informal learning process. Looking at the key findings of this report, it is clear that young people identify a wide range of personal and social skills developed just because they involved actively in volunteering. What is missing in some EU countries is a system that allows the flexible recognition of these learning outcomes. The field research confirmed the literature review evidences on the improved self-confidence and self-esteem of the volunteers and also the enhancement of their communication skills and their ability to work with people with various cultural backgrounds.

Moreover, volunteering acts "*as a catalyst for young people to engage more effectively with other learning, or in some cases re-engage with formal learning or training, putting them in a position where they can develop skills and potentially gain qualifications*"[5]. Many young people also develop practical skills related to their specific experiences of volunteering.

3. Case study - Young Volunteering for Social Entrepreneurship (YVSE)

Currently, social entrepreneurship becomes more and more a viable alternative for entrepreneurs and society mostly due to the economic crisis and its consequences. Encouraging young people to get involved in social entrepreneurship is desirable but one needs to think to develop social entrepreneurial

skills to young people, and to train them to become real social entrepreneurs in the future starting from volunteering in this sector first.

The idea of a training seminar on the above-mentioned topic arose from a brainstorming session held in 2011, at the Pro Global Science Association, Bucharest, Romania. The idea was brought to the light drafting a project proposal for Youth in Action grant competition. The project proposal won and in March 2013, the implementation of the project RO-43-E080-2012-R3 started. The participants - young volunteers and students from Romania, Italy and Turkey joined together in April 2013 for a three-day workshop in Bucharest, aiming to share their volunteering experience, to discuss the issue of social entrepreneurship, to learn in a multicultural environment how to start their own social business.

Specialists from Pro Global Science Association taught them the basics of social entrepreneurship and help them to identify and to analyze successful social business initiatives in their own countries.

During the workshop a wide range of teaching/learning methods were used as well as different assessment methods just to make sure that the learning process on social entrepreneurship produced viable outcomes. Methods such as: lecturing, interactive discussion, role playing, presentation of case studies, multilingual communication, brainstorming were employed and each young participant got involved constantly in various activities.

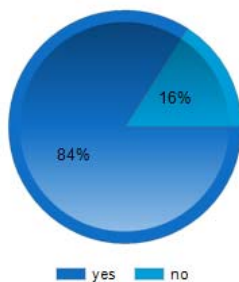
In order to measure the seminar's outcomes, a survey was conducted among all participants, a series of targeted questions were formulated. Mainly, the questions referred to: experience as volunteers, awareness on the seminar's topic, perception of the learning process and how much they acquired, perception on the role of volunteering as informal learning experience, multicultural experience, and shaped in socio-demographic portrait of participants.

Looking at the results, and doing some analytics, the main conclusions are (Fig. 1):

- over 85% of the participants attended a seminar having the topic Social Entrepreneurship;
- participants were experienced volunteers (only 16% did not have relevant experience as volunteers);
- the majority of participants had 1-2 years and more experience as a volunteer (76%);

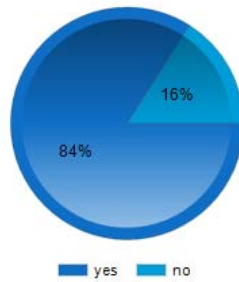
1. Are you participating for the first time in a seminar on this topic?

Response rate: 100.0%



1. Are you participating for the first time in a seminar on this topic?

Response rate: 100.0%



3. Your experience as a volunteer is:

Response rate: 100.0%

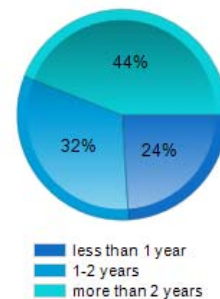


Fig. 1: Setting up the framework

Main variables included in this study were:

- a) *What is the role of a volunteer?*

The survey aims to reveal the role of a volunteer as it is perceived by the participants. The results are presented in Fig.2 , it seems that the study confirmed the fact that volunteering *enhance active participation*

(68% of the citations), *promote solidarity* in a significant way (40% of the citations) and is also *fostering social cohesion* (only 32% of the citations). The number of citations is greater than number of responses due to multiple responses, subjects choose 1 or more options.

b) Opportunity to learn

The majority (see Fig.2 56% very good opportunity + 40% good opportunity) of the questioned persons agreed that volunteering is a very good opportunity to learn, a useful informal learning form that helps those involved to register a real progress in personal development and skills and competencies building. Participants gave us a reliable feedback regarding the effectiveness of the seminar in terms of share knowledge and building skills.

c) Share experience

Volunteering means to share experience with your peers and the study results are clear in this sense: 64% of the respondents agree upon the fact that the seminar did give them the opportunity to share experience under very good conditions, 24% appreciated as good. A small but interested group (12%) declared that the seminar was OK in terms of sharing experience. We may ask ourselves why did they got this opinion? One cause may be the 24% of participants with less than 1 year experience; half of them did have much to share with the others.

d) Share good practices: (Fig. 3)

Looking at the results, one can easily see that the majority (60%) agreed upon the fact that the seminar gave them a very good chance to share good practices. This result also confirmed the achievement of one of the main project’s objectives: to share good practices in the field of volunteering and to identify the ways to use them in developing new social entrepreneurial initiatives based on them.

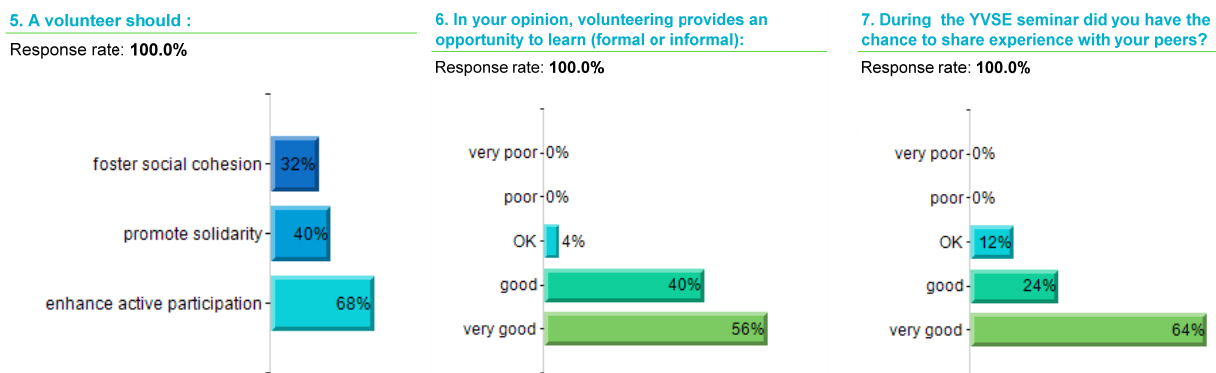
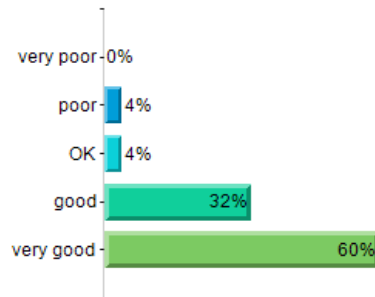


Fig. 2: What do the participants think about their experience in the project?

e) Enhance expertise: the figures are the same with those from the previous variable, and that means participants equally agree upon the enhancement of their expertise as much as sharing good practices.

8. Did you have the chance to share your good practices with your seminar's peers?

Response rate: 100.0%



9. Do you appreciate that your expertise enhanced by participating in YVSE seminar ?

Response rate: 100.0%

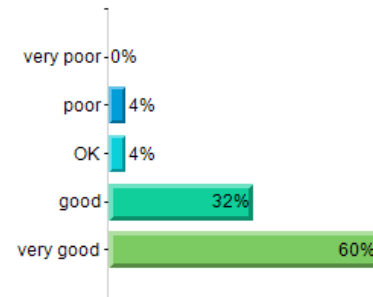


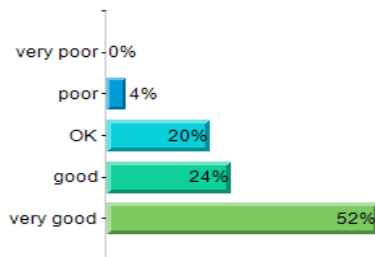
Fig. 3: What do the participants think about their acquired experience?

f) *Skills acquired* – One of the project objectives was to develop a set of basic social entrepreneurial skills that will enable the participants to build , in the near future, their own social enterprise. At the end of the project, only half of the participants (52%) were confident enough to declare that their new skills are exactly what they need in order to consider a social entrepreneurial initiative. Coming from different cultural backgrounds, and their young age (21-25 years old) may affect their opinion, based on the fact that they are engaged in a formal learning process (60% of them are students). The Romanian participants (48%) may influence the overall opinion mainly due to the fact that social entrepreneurship is not well spread and not yet legally regulated, so they did not have landmarks to refer to just in case they consider to start a social business.

g) *Overall opinion*(Fig.4) – 64% of participants found the seminar very good, 24% appreciated the seminar as being good and 8% just OK, only 4% of the respondents were dissatisfied and were identified being those over 30 years old, that could be considered as more demanding due to their past working and learning experience. There is always room for improvement and the organisers have understood this and they were asked to formulate suggestions and proposals for the next similar events.

11. Do you appreciate that your social entrepreneurial skills has developed during YVSE seminar?

Response rate: 100.0%



12. What is your overall opinion about how YVSE was organised?

Response rate: 100.0%

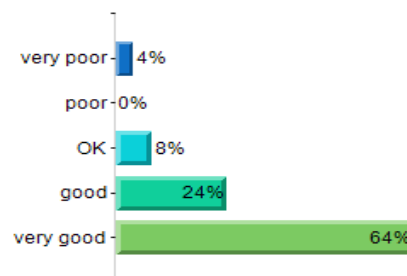
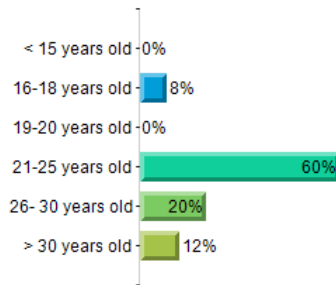


Fig. 4: What do the participants believe about their social entrepreneurial skills developed during the seminar?

The survey results should be analysed and interpreted in the light of demographical profile of the respondents (Fig.5)

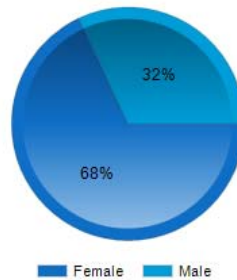
13. Indicate your age group

Response rate: 100.0%



14. Are you?

Response rate: 100.0%



15. Indicate your country of origin?

Response rate: 100.0%

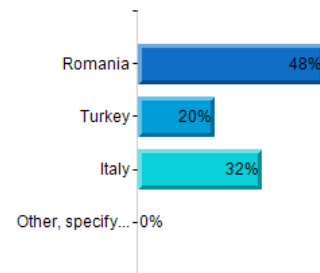


Fig. 5: Socio-demographic coordinates

We may say that Italy has a wider experience in developing social enterprises, and the participants from Italy played an important role in sharing experiences and presenting interesting case studies. Turkey was less represented, but the participants were very active in observing the cultural differences and how they may affect the impact of the social entrepreneurial initiatives.

4. Conclusion

The survey results help me to demonstrate that volunteering enhances active participation, stimulates the learning process, even that it is an informal one. Participants perceived a real upgrade of their skills and they agreed upon the fact that it was a useful experience that may boost their personal development.

Sometimes the photos are more convincing when one tries to demonstrate that volunteering means also new friends, having fun and discovering one hidden talent and skills. I strongly advise readers to visit the YVSE website (www.reaser.eu/yvse) in support to my conclusions.

5. Acknowledgements

The article was possible due to the Tineret in Actiune (Youth in Action) Program – Romania funding scheme, and which has run a fair competition and the project RO-43-E080-2012-R3.

Also, I would like to thank my close collaborators: Cristina Barna, Ruxandra Vasilescu and Raluca Niculae who worked hard to develop the project proposal, to implement the YVSE project and to make this article possible due to their commitment to professionalism.

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EU regional policy and the opportunities for socio-economic development of municipalities in Bulgaria

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Abstract. *The Structural Funds (SF) are the main instrument of the European Union for conducting its regional policy. Through funding the European Regional Policy by EU funds, the Union complements and supports national activities. It has an impact on development planning at regional and local level. In recent years, the municipal administrations in Bulgaria have been relying heavily on project activities in the implementation of municipal goals and priorities. The preparation of municipal projects and their management both require a highly professional staff of experts. Most municipalities in Bulgaria, including those with greater success in the preparation and application of projects under the Operational Programs have difficulties and problems in project implementation. Most of them are summarized and discussed in this research.*

Keywords: regional policy, structural funds, design work, Operative Programs, municipalities.

JEL Codes: R11, O18, O19.

1. Introduction

The Regional Policy of the European Union aims at eliminating differences in the status and development of over 250 regions in the Community and providing EU citizens equal access to quality education, proper job, clean environment, an enabling business environment. This policy is based on the principle of solidarity. About one third of the EU budget is directed to less developed regions and social groups. In art. 158 of the Treaty establishing the European Community it is stated that in order to strengthen its economic and social cohesion, the Community aims at reducing disparities between the levels of development of the various regions and the backwardness of the least favored regions or areas, including rural areas . These actions will be supported by: the Structural Funds (SF), the European Investment Bank (EIB) and other existing financial instruments (Article 159 TEC).

Structural Funds (SF) are the main EU instrument for implementation of its regional policy. These financial instruments for the period 2007-2013 are: the European Regional Development Fund (ERDF) and European Social Fund (ESF).

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Through funding from the European Regional Policy of EU funds, the Union complements and supports national activities. It has an impact on development planning at regional and local level. The Commission and the states ensure coordination and avoid duplication of funding from various funds and assistance from other financial instruments.

According to the principle of decentralization the delegation of the rights to manage the Structural Funds and the Cohesion Fund of the State Commission are assured. Financing from EU should complement local sources the level of which is fixed by the state.

2. Absorption of structural funds in Bulgaria

In 2011 Bulgaria absorbed 8% of all funds allocated to it for the period 2007-2014 from the three funds - the Regional Development Fund (ERDF), social (ESF) and the Cohesion Fund (CF). Earlier that year, the percentage of funds disbursed to Bulgaria by the European Commission (EC) was 15.46% and at the end of the year it reached 23.54%. For the first nine months the rate was only 3 percent, and only at the end of 2011 more money were approved and paid.

Overall, in 2011 the country absorbed less money than in 2010. The final result of 8% is far from being the highest achievement, given that the rate of absorption from the period remains low - less than 24% and that half of the programming period has elapsed.

Payments to beneficiaries are also increased by 8%, from 10.20% at the end of 2010 to 18.83% at the end of 2011. There is a steady trend to maintain a gap of at least 5% smaller rate of payments to beneficiaries than the volume of funds disbursed to Bulgaria by the European Commission. This means that payments to beneficiaries are made more slowly, although the state has transferred funds from the European Commission for this. The reason could be either in the absence of costs reported by the beneficiaries or the slow process of checking (verification) of these costs by the managing authorities of the operational programs.

The absorption of operational programs (OP) at the beginning of 2012:

- 2008 with 100% level of utilized money for all operational programs;
- The 2009 funds are divided between six programs. The highest percentages is for OP "Competitiveness" - 81.55%, followed by OP "Administrative Capacity" - 79.07%, but in figures it is a small amount compared to the other programs, and the OP "Transport" - 74.93%. In the other three programs less than 20% were utilized: OP "Human Resources" - 4.61% OP "Regional Development" - 15.49%, and "Technical Assistance" - 18.31%. Unsatisfactory is the situation in the OP "Environment", with no money spent whatsoever.
- The 2010 only program, which disbursed funds, is OP "Transport" - 22.75%. The funds came from the ERDF and funded the technical assistance projects for the subway;
- In 2011 the only disbursed program is OP "Transport" - 4.35%, whereas the percentage is zero for all the other programs.

It is clear that the total priority of the Bulgarian government's use of funds is under the Operational Program "Transport", which is mainly for large infrastructure projects. The lagging behind the other programs shows that they are not given enough attention. Ignoring their purpose and potential is unacceptable in times of crisis when it is essential to feel the impact of their implementation on economic growth and employment. In this connection, there is a worrying slowdown in the OP "Human Resources", That still does not provide the expected results and is not actively used when Bulgaria has high unemployment and a drastically increasing number of illiterates with social services far behind the European standards.

Bulgaria's place in the absorption of EU structural funds:

- In the ERDF up to January 1, 2012 Bulgaria (25.55%) maintained the 25th place right in front of Italy (19.25%) and Romania (16.50%). At the front comes – Estonia with 49.88% and Lithuania with 49.09%. Bulgaria remains below the average utilization for the EU, which is 33.16% for this Fund;
- In ESF Bulgaria has fallen down with one position from the previous three months (until October 1, 2011) and is on the 26th position with 19.91%. After Bulgaria comes only Romania with 18.70%. On the first place is Latvia - 63.64%, then comes Ireland - 59.68% and Portugal - 51.97%;
- In CF Bulgaria has made progress in learning how to assimilate funds compared to the previous period before and is on the 12th place out of 15 countries receiving money from the fund. Bulgaria has 22.56% rate of fund-assimilation. Leading here is Spain with 57.37% and Lithuania with 46.56%.

The data analysis for the absorption of EU structural funds helps us trace what has been achieved in Bulgaria and what remains as a challenge for the coming months and years. Our country has committed to expend funds within certain periods, the observation of which binds us to receiving EU funds. The issue of risk in losing money is always up to date, until these means are not absorbed.¹

3. Project activities in the municipalities

In recent years, the municipal administrations in Bulgaria have been relying heavily on project activities in the implementation of municipal goals and priorities. The preparation and management of municipal projects require a highly professional staff of experts. Due to the lack of experience, local experts learn in the process of working and mainly through their own mistakes. Therefore, the exchange of experience and practice is the basis for formulating an expert municipal vision for the priorities for each program period. The National Association of Municipalities in Bulgaria (NAMRB) is committed to organizing the annual meetings of national experts on programs and projects of municipalities hosting the "fair debate between municipalities and the managing authorities of operational programs".² The reasons for organizing this event are:

- A major investment resource for building basic municipal infrastructure is obtained mainly through EU-funded projects;
- The accumulation of problems and issues whose solution requires the combined efforts of all municipalities in the opening of the OP;
- Successful attraction of investment resources is entrusted to experts in municipal programs and projects;
- The project activity has turned from peripheral into central to the municipal administration for the realization of its general objectives and priorities;
- There is a growing need of human resources for the municipalities and these resources should be concentrated in the preparation and management of projects;

The first national meeting of experts on the programs and projects of municipalities took place in 2009. It involved 117 experts from 63 municipalities. The topics and highlights are: functions and professional competencies, responsibilities and rights of the experts on programs and projects in municipalities – an analysis of the current situation; The presentation of experience and new priorities in the

¹ Analysis of the state of absorption of Structural Funds in Bulgaria based on the quarterly report from the European Commission for the period October to December 2011, <http://www.finance5.bg/analysis/872.html>

² National meeting of experts on programs and projects of municipalities organized on the initiative of "NAMRB - Active" Ltd. and decision of the Board of the Association. <http://www.namrb.org/?act=cms&id=270>

operational programs and RDP, Problems and proposals for changes in the stages "Identifying, planning and preparation of projects" and "Implementation of projects, Procurement and irregularities in public projects - problems and proposals for change.

At the Second National Meeting of Experts on the programs and projects of municipalities conducted in 2010 a group of 134 experts from 79 municipalities took part. The topics, and accents were associated with: Challenges and Opportunities for the use of available resources under operational programs in 2011 and till the end of the program period, the role of local European experts in the preparation of Bulgaria for the next programming period; Best practices and lessons learned from municipalities; Implementation of the Public Procurement Act (PPA) in municipal EU projects - key risks, financial control and audit of municipal projects and more.

At the Third National Meeting of Experts on the programs and projects of Municipalities in 2011, the number of participants increased: 139 experts from 80 municipalities, suggesting the usefulness and necessity of such educational forums.

Topics and highlights of the meeting were: EU funds for Bulgarian municipalities - what happened in 2011 and what lies ahead in 2013, Discussion with Managing Authorities (MA) of OPs and Development Program (RDP) to improve the absorption of EU funds. The introduction of transparent rules for structuring teams for project management and their remuneration, etc...

The need and interest in holding these meetings at national level, and the topics discussed at them only confirm the fact that EU funds are an outstanding resource for any community. The involvement of local administrations is essential in the preparation and implementation of projects. The ability to earn and achieve adequate EU projects clearly distinguishes successful from lagging behind communities.

According to Information system for management and monitoring of EU Structural Instruments in Bulgaria (MIS)³ at 10.08.2012), the project activity is dynamic for all six planning regions (Eurostat level - NUTS 2). When we compare the activity in a well-developed socio-economic planning region - the South-eastern and in a less developed region – the North-western, the data showed no lag or considerable differences in the number of both contracts and beneficiaries:

<i>Planning region (NUTS 2)</i>	<i>Total number of contracts</i>	<i>Total cost</i>	<i>Total of beneficiaries</i>
<i>South-eastern</i>	574	2 087 324 832	348
<i>North-western</i>	597	771 426 100	341

Source: Information System for Management and Monitoring of EU Structural Instruments in Bulgaria (MIS) up to 10.08.2012, <http://umispublic.minfin.bg/prPlanningRegions.aspx?pr=1005>

When comparing the 14 municipalities which are administrative centers of regions (out of 28 districts in Bulgaria, Eurostat level - NUTS 3) and project beneficiaries⁴ the need for project financing of the socio-economic development of the municipalities in the years of crisis are reaffirmed:

³ Information System for Management and Monitoring of EU Structural Instruments in Bulgaria (MIS), <http://umispublic.minfin.bg/prPlanningRegions.aspx?pr=1005>

⁴ Ibid.

Municipality administrative center of the region (NUTS 3)	Population (NSI, Census 2011) ⁵	Total Number of projects	Total sum
Plovdiv	338, 153	11	65,818,218
Varna	334,870	24	249,804,002
Burgas	212,902	27	325,099,081
Ruse	149,642	18	60,297,167
Stara Zagora	138,272	12	99,302,004
Sliven	91,620	12	20,903,540
Haskovo	76,397	10	22,545,431
Yambol	74,132	15	20,236,256
Blagoevgrad	70,881	17	55,609,595
Veliko Tarnovo	68,783	17	78,044,788
Vidin	48,071	14	37,008,255
Lovech	36,600	17	44,033,275
Silistra	35,607	15	11,888,240
Razgrad	33,880	18	62,362,767

Source: Information, management and monitoring of EU Structural Instruments in Bulgaria (MIS) to 10.08.2012, <http://umispublic.minfin.bg/prPlanningRegions.aspx?pr=1005>

Smaller municipalities face more difficulties in project investment and implementation of project activities. The information on the projects and contracts to municipalities as beneficiaries on 10/08/2012 at Operational Programmes (OP)⁶ in Stara Zagora confirms this:

Name of the municipality	Number of the submitted project offers	Number of the rejected project offers	Number of contracts
Brothers Daskalovi	5	1	1
Gurkovo	9	5	3
Gulabuvo	9	5	3
Kazanlak	33	9	10
Maglizh	7	1	4

⁵ <http://www.nsi.bg/otrasal.php?otr=19>

⁶ Information system for management and monitoring of SF in Bulgaria (MIS), <http://eufunds.bg/bg/page/826>

Nikolaevo	5	1	2
Opan	7	3	2
Pavel Banya	15	9	1
Radnevo	12	4	3
Stara Zagora	23	5	12
Chirpan	17	7	6

Source: Information system for management and monitoring of SF in Bulgaria (MIS), <http://eufunds.bg/bg/page/826>

The number of contracts related to the number of submitted proposals is small. The main reason is the lack of competence and expertise involved in project work in smaller communities.

4. Conclusions

Most municipalities in Bulgaria, including those with greater success in the preparation and application of projects under the Operational Programs, difficulties and problems in project implementation. The most important may be summarized as follows:

- Continuous change of instruction to carry out projects of MA;
- Severe tender under the Public Procurement Act (PPA) and their appeal. → Unfair competition and lack of collegiality between the companies involved in the bidding process almost always leads to appeals for ranking and selection of a contractor. This slows down the implementation of project activities and ability to successfully implement projects on time.
- Inconsistency in the position of the Managing Authority (MA) in the process of conducting a preliminary review of tender documents and subsequent checks of tendering procedures.
- A serious problem facing municipalities is the lack of funds for payments under contracts rhythmically with contractors during the design and verification very slow and reimbursement from MA, during and after the reading of the draft. Providing flexible funding for implementation of projects important to their success.⁷

The interest of local and national authorities involved in the management of the OP is to find a rational and workable solution to these problems, because it directly affects the success of Bulgaria in the absorption of EU funds.

⁷ Stara Zagora. Report. Mandate 2007-2011. Stara Zagora, 2011, p.24

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Explicit Nexus between morality and emotion

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Abstract. *Emotions and moral values are deeply intertwined in a single thread of consciousness. The focal point of this research paper is to explore the dynamic interplay between emotions and morality and how they together propel human progress. The methodology used is to essentially evaluate the basis of anthropogenic hazards and further establish strong connections between the human intent and their emotive states. The emotional state of an agent is constantly changing and so is the moral compass within them. The next dimension to analyze is- with this ever evolving definition of morality and with every human having a different moral yardstick is human revolution attainable? The prime idea is to gauge human projections of global disasters and each individual's accountability on the same issue.*

Keywords: emotions, morality, mental representation.

JEL codes: Y80, Z00, Z13

1. Introduction

Human race has invariably experienced a wave of outward changes over centuries, innumerable revolutions ranging from social, political, industrial, cultural, and religious have contributed to sufficient growth and development but the issue of moral decay still remains of prime importance in the contemporary era.

In the words of Jiddu Krishnamurthy: 'We are each one of us responsible for every war because of the aggressiveness of our own lives, because of our nationalism, our selfishness, our gods, our prejudices, our ideals which divide all of us. And only when we realize not only intellectually but actually that we' a part of this monstrous society with its wars, divisions, its ugliness, brutality- are the sole reason for all this existing chaos can we start to act upon it ⁽¹⁾. Thus, we live in a world where society makes an individual; the ideal is to move on to world where individuals make the society. To unravel this construct a small study was conducted

The question that formed the niche of this research piece is: What is the biggest possible threat in 2020?

1.1. Sample collection and test administered

Secondary data was collected from the UN Millennium Development Goal Report ⁽²⁾ aiming to collate global challenges. The primary data was collected taking a sample of 500 people (250 men and 250 women) Age group - 18 to 50, with a help of a self-defined questionnaire across developed cities in India. A self-designed questionnaire was used for sample collection. The questionnaire consisted of 25 items based the

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Kohlberg’s stages of moral development ⁽³⁾ and UN Millennium Development Goals ⁽²⁾. The responses to the questions were to be given with regard to their individual beliefs and perceptions. The purpose was to investigate the moral expectations and review how humans view the source of manmade catastrophes.

2. Data analysis

The responses of the 25-items obtained were first listed in the table with help of tally, and their total was done. After this, four variables were considered which had the maximum score or they were selected by the maximum respondents.

Causes	Responses
Pandemics and natural disasters	170 respondents
Catastrophic nuclear wars	200 respondents
Destruction of mankind	71 respondents
Omnipotent terrorist threat	59 respondents

Figure 1- Study analysis table

Discussion: The biggest futuristic threats according to the survey that poses humanity are natural calamities, pandemics, destruction of mankind and omnipotent terrorist threats.

The source of all calamities, potent dangers, environmental threats, terrorism, and wars- the accountability for most of the ugliness in the world is attributed to man. Even natural disasters, their impact has been worsened by human activities. All manmade catastrophes are thus, a social by-product of misconstrued moral values. In crux, a deluded sense of morality incites social upheaval; all manmade disasters are human creation. The **human mind** which decodes and executes any form of destruction is the real activating, willing and knowing agent. Unfortunately not many people today are acknowledging the same and are focusing on tertiary problems.

Therefore, Human Mind is truly identified as the biggest threat in 2020.

Objectives: The paper delves deeper by presenting a threefold premise to outlay the role emotions in the moral domain .

- a) Can morality be mapped in context to individual emotional wavelength of people?
- B) **Is Social** Desirability= **Moral** Orientation?
- C) What is Social paradigm-You are what you think?

With a help of a table we identified four key areas syncing morality in context to individual emotional wavelength of people .

How can we map morality in context to individual emotional wavelength of people?	
Research findings	Constructive arguments supporting the findings
Emotions can be mapped to morality	Emotional mapping
Individual sub-conscious patterns influence moral values’	Perceptive morality
Your current mental states ascertain the moral compass within you	Mental patterns ascertain human intent
Your every action has an equal and opposite reaction	Cause is effect concealed and Effect is cause revealed

Figure 2- Emotional mapping table

3. Emotional mapping

Research has shown that emotions ranging from joy, ecstasy, and serenity to fear, remorse, disapproval, terror, a permutation and combination of primary emotions and secondary emotions affect the entire dynamics of our mental health⁽⁴⁾.

So how can you map emotions?

In order to map morality on an emotional plane, one needs to focus on a core geographical group- sync its history, anthropology, sociology, psychology, philosophy and all its social counterparts to dissect the state.

For example, dissecting the state of Kashmir: Kashmir is a province in India which has been oppressed since India's independence because of its prime situation in the political context. It has directly affected not only the policy making but also the local people living there. Generations have witnessed violence, bloodshed; there are negative emotions like anger and fear infused in people with respect to displacement. What is the state of emotive being there - antagonistic? What goes on to turn small children into insurgents or terrorists? What are the socio-psychological barriers? How to resolve conflict and break the pattern of years of torture?

How can tracking the mental patterns of people affect moral development?

- a) Data assimilation plus knowledge integration assists in emotional-mapping as by understanding every dimension of humans, we can decode each layer of morality. While studying these mental representations of ethical dilemmas one often questions the integrity of moral judgments and its consecutive emotional repercussions.
- b) By analyzing this data in the form of moods, feelings, emotions, beliefs, perceptions, cultural values, every mental object that we study- can determine the course of human evolution and using the same data to accordingly introduce optimum measures to rectify problems.
- c) Every human has a different yardstick for morality. For example a terrorist is a freedom fighter for someone and a terrorist for another⁽⁵⁾. How can we ascertain the moral quotient? Every human has a different past impression in the sub-conscious mind, each of us have been born in different places, interacted with different people, learnt different moralities pertaining to their own culture. To adapt and rightfully assess moral judgments is essential here.
- d) For example, people of Kashmir- By being aware of their thoughts, actions, emotions, feelings, morale's, lifestyles, we can emotional map their state of being and then accordingly ascertain whether the state needs a particular educational reform or social reform to curb its violent temperament.
- e) Emotional dysfunction leads to digressed moral routes. If we study the psychology of psychopaths their social behavior affects their moral momentum. Hence, emotional intelligence is of utmost importance as to improve moral decisions and judgments one has to ideally perceive, use, understand and manage emotions.

e.g. - Repressed anger leads to rage, repressed envy leads to jealousy, repressed grief leads to depression and so on⁽⁶⁾.

The world thrives on basic emotions like love and fear, there is no other human motivation on an emotional plane and all other ideas are simple derivations of the emotion of love and fear. Worry, hate, anger together with its offshoots anxiety, bitterness, impatience, avarice, unkindness, condemnation, fierce- all attack humans at both a cellular and moral level. While evaluating drivers for human actions emotion plays a fundamental role. For example: emotions like Anger, Envy, Grief, Fear are paralyzing emotive states. They

results in draining emotional energy and acting out in those states. If one is experiencing anger one may act in an aggressive state. Hence, emotions have direct implication on human behavior. Emotions like Joy, ecstasy, optimism, love= are enabling emotive state. They are the desirable state to be in as it is an energy driver.



Figure 3- Flowchart to describe how emotions facilitate moral development.

Every action has an equal and opposite reaction

Newton’s law is the law of karma or the law of cause and effect. Now, how this law does fits into the moral scheme of things. Law of karma expands on the notion of debt. Debt is the kind of thing we give and receive (emotions, feelings, behavior, and materialistic things), is the effect of the cause of the debt of any action. Choice is instrumental in decision making as every situation, at the end of every crossroad there lays a choice and the choices you make define the person’s moral inclination. Man executes the choice depending on his karmic pattern or (sub-conscious patterns). Hence, cause is effect concealed and effect is cause revealed.

The next argument throws light on Social Desirability and its deep analogy with Moral Orientation.

Classic definition of Social Desirability means to be accepted by society when one follows their rules. Yes social desirability is equivalent to moral orientation as morality its by-product. Depending on which side of the coin you are at- morality will be differently viewed and accepted. The argument of self-actualization holds true for moral values as human nature strives look for a cause, a higher purpose in life. Whether it is a religious affiliation or nationalist cause moral actions are the biggest motivations for self-actualization. As the discussion on morality progresses, ethical values are now viewed as a need of the hour-convenient concept. It changes as per time, as per conventions, as per cultures. Thus, models of moral relativism, moral objectivism, and moral absolutism have been debated as in all situations that constitute human life, our ethics form, the very niche of human existence.

Steven Pinker beautifully capsulated the argument of a misguided sense of morality.

“The world has far too much morality, at least in the sense of activity of people’s moral instincts. If you’ll look up at the largest episodes of bloodletting in human history most of them would have moralistic motives: the Nazi Holocaust, Pol Pot, Stalin, the Gulag, Mao, the European war of religions, the Crusades, all of them

were killing people for, not because they wanted to accumulate vast amounts of money, or huge harems of women, but because they thought they were acting out of a moral cause.”⁽⁷⁾.
 Osho said Morality is a subset of our self-ego identities.⁽⁸⁾

e.g When a terrorist/serial killer goes on to do their immoral acts they actually believe that they are morally justified to do so. Adolph Hitler believed that at every step he was acting out of a great sense of morality.

Following this presumption, Steven Pinker and Osho have thrown light on how morality has become a convenient explanation for our miscalculated actions.

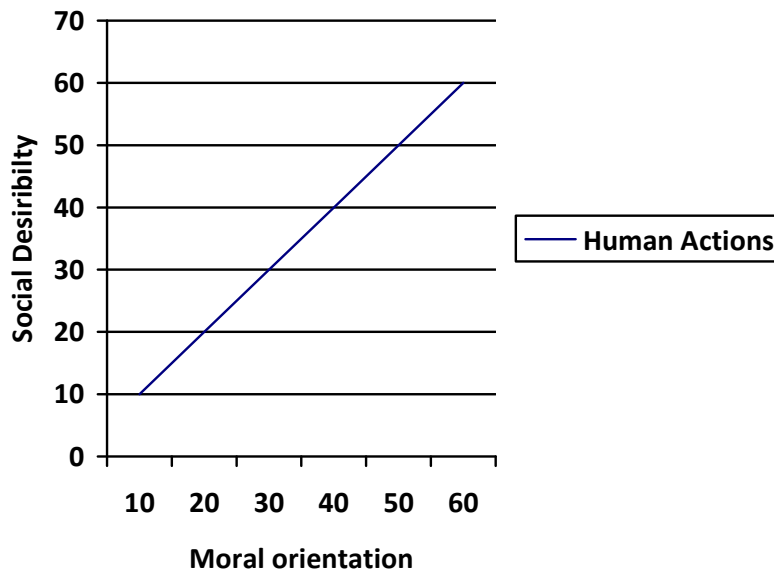


Figure 4- Social Interaction Graph

The above graph explains the relation between social desirability and moral orientation is directly proportional keeping a changing variable as human actions. Each human thought and action leads to social desirability. The more moral one’s actions are the more socially valuable a human is to the society.

You are what you think

Positive and moral psychologists- state that your thoughts, beliefs, opinions, theories manifest into objective reality. Every emotional pattern, traits, every value, attitude, belief, preferences all that constitute mental faculties is expressed on the screen of space as conditions, events and experiences.

To redefine Utopian sense of morality

The most important facet of revolution required today is a human one. What is Human revolution? An inner revolution within a man to transcend to the highest level of humanity and let himself leap beyond conditioning and attain psychological freedom.⁽⁹⁾ This is what I believe the world needs today. No more will mankind be chained in shallow notions of ‘what is’ but will push himself ahead to a river of belief of ‘what actually is’.⁽¹⁾

Complete revolution in the psyche. Humans will move away from miseries and fear of the known or unknown and realize that what is real is the constant will to empower one's inner self and aim at absolute freedom of the psyche. We need energy not only to bring about a total revolution in ourselves but also in order to investigate, to look, to act. ⁽¹⁾.

Morality is not the ultimate process of discovery but a process of creation. Seek therefore not to find 'who you are' but to determine 'who you want to be'. Latent good resides in every human being. Thus, use every moment of your life to think of the highest thought, highest word, and highest action (leading to the highest good). ⁽¹⁰⁾.

Social Interactions and Mental Representation

The mentally represented framework for morality is explained with great precision in the subtle workings of the human mind. Morality forms a major role in social interaction dynamics as its two pillars are the intentions latent in a being and its communication through emotive or linguistic constructs. Morality in a person is guided by his conscience, in other words the intentions. Social Interactions have identified a disconnect in the sense that when there is transmission of sensory information to the brain depending on the circumstance, if there is emotional stimulation within, represented physiologically but when it comes to expressing those emotions through linguistic constraints, one either manipulates or tweaks their communication.

Concept of right and wrong

A child is born into the society and his moral development entails learning the set of rules and regulations of the society. Past studies reveal that if there was no society then a man has higher probability of immorality. What is the concept of right and wrong then? Elaborating on the concept of free choice, free will and conscience, one can ascertain **self-righteousness as the base to moral living**. 'You are your own rule maker; you set your own guidelines' ⁽¹⁾. Every action has consequences and these consequences are the set rules by nature.

4. Conclusion

Today, the question is: can we define morality as applicable to the complete humanity? Maybe No Morality can ever be enforced. A human is always faced with set of choices to act upon in any given situation. What he opts for is a derivative of his environment, mental conditioning and past sub-conscious impressions. The only universal emotional language is Love. The whole world is fearful. Emotions triggered off due to fear will invite unholy actions which is what plagues the world today. Thus, the only solution is that each person has to take responsibility for him and propel towards **self-righteousness and the social welfare of all conscious entities is morality**.

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Financial crisis. Implementation of macro- and micro-prudential regulation

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Abstract :

A.

The financial crisis occurs as a result of a disorder in the financial market. It implies serious problems of unfavorable selection and moral risk, making the financial markets unable to direct efficiently the funding from depositors toward individuals and businesses with potential of productive investments. When the financial markets are not able to function efficiently the economic activity visibly decreases.

If the crises repeat periodically, it is a challenge of policy makers to review and take regulatory measures. They should not just watch the situation, but also react according to the character and the color of the actual crisis. Exchange of thoughts in recent times go through criticism of existing implemented models (almost unpredictable and accompanied with enormous costs to the population) to stabilization policies that hurt the expected profit margins and the control of pressures over prices.

The reason we try to prevent financial crises is that the social costs are invariably high and exceed the private cost to private financial institutions. We regulate to internalize these externalities in the behavior of the financial institutions. One of the most important regulatory tools used is the request for capital adequacy.

B.

*The actual approach to capital adequacy is **micro-prudential**. Micro-prudential regulation deals with a certain bank reaction toward exogenous risks. They do not include endogenous risks and this neglects systemic implications of common behavior. Micro-prudential regulation consisting of such measures as the certification of those who work in the financial sector, regulations of what assets can be held and by whom, how the instruments are listed, traded, sold or reported, assets valuation and riskiness measures, deals with price stability and the protection of the clients of various institutions. Regulators should be careful when implementing micro-prudential regulations, especially those that respond to market value and risk measurements.*

C.

It happens randomly that banks and borrowers underestimate risks in boom periods and overestimate them in crash periods. The essential problem remains risk perception from "low" to "very high".

***Macro-prudential** regulation consists on narrowing this gap, forcing the banks to undertake higher risks during boom periods (i.e. to invest more capital than they evaluate as necessary), so they can support crediting during crises period by letting this capital go. Systemic stability and homogeneity of the financial system is another characteristic of the macro-prudential regulation. Common behavior, when all sell or buy at the same time, is one of the reasons the system crashes. Always the market players intend to be heterogenic, however, as we all know, as a result of a number of factors, regulations and other reasons, market players tend to act homogeneously. In this context, systemic risk is endogenous and macro-prudential regulations have to identify these endogenous processes and reinstate heterogenic behavior.*

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As a conclusion, in order to prevent these crises, well defined micro- and macro-prudential need to be established. They also help on monetary policies.

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Key words: financial crisis, macro-, micro-prudential regulation, risk management, systemic stability, systemic risk.

Key terms:

Micro-prudential regulation deals with the response of a certain bank toward exogenous risks. It doesn't include endogenous risk and it neglects the systemic implications of common behavior.

Macro-prudential regulation deals with systemic stability and the homogeneity of the financial system.

JEL codes: G01, G21.

1. Introduction

The financial crises are major disorders of the financial market, characterized by a significant decrease of assets prices and by companies' bankruptcy. Speaking before the U.S. Congress, Alan Greenspan, former governor of the Federal Reserve, described the mortgage financial crisis as a "*loan tsunami that happens once a century.*"

A financial crisis occurs when an increase in asymmetric information as a result of financial market disorder causes serious problems of adverse selection and moral hazards, making financial markets incapable of channeling funds efficiently from savers to individuals and businesses with opportunities for productive investments. When financial markets fail to function efficiently, then economic activity shrinks significantly.

This is not the first international banking crisis, because the world has already seen similar ones. Some estimations rank it as the 85th. If crises repeat, it is the task of policy-makers to reconsider and undertake regulatory measures and do not just superficially see it, but react to the characters and colors of the current crisis. The last 84th crises occurred without credit default swaps and special investment tools. The reason we try to prevent financial crises, is that the costs to society are always higher and they exceed the private cost to individual financial institutions.

2. Micro-prudential regulation

One of the main regulatory tools is the usage of capital and the current trend of capital adequacy, which is also called micro-prudential. Micro-prudential regulation consists in some measures in the financial sector. The measures to be taken into consideration are:

- What assets can be held and by whom?
- How instruments are listed, traded, sold and reported?
- Measures of the value and riskiness of assets—the stability of prices and the protection of clients of the institutions.

The regulators should be careful concerning how the micro-prudential rules will be applied, especially to those responding to market of the value and riskiness.

Micro-prudential regulation examines the responses of a specific bank to exogenous risks. It does not incorporate endogenous risk and it neglects the systemic implications.

In the traditional approach to micro-prudential regulation, a matrix has been taken into consideration, with the probability of a credit in loss, on one axis, from low to high. Regulators say that financial firms must analyze their assets using this matrix and dispose of those assets where there is a high probability of loss. This is a bit ridiculous. Any bank that is willingly holding assets that will deliver a large loss does not need regulation; it loses its banking license. The real problem is not that banks willingly hold assets that they know will deliver a large loss with a high probability and are simply waiting for the regulator to tell them they cannot, because those assets become "toxic".

However, when this occurs the regulatory matrix is useless. This implies that the bank now has to sell the asset and in fact, these rules have to become standards, every regulated institution has to sell the same asset at the same time, bringing its price to collapse towards zero and making banks short of capital.

This in turn forces banks to sell other assets previously held for their low correlation with the original problem asset, causing asset correlations to rise, giving the impression that risk has raised further and causing banks to sell more assets.

This loss in spiral shape was an attribute of credit markets in 2007-2008 the management crisis, of the long term capital management crisis of 1998, of the East Asian crisis of 1998, of the stock market crash of 1987 and of other modern financial crises.

Paradoxically, the micro-prudential rule can turn a bad situation into a worse one. Responding to the crisis though, some argue that banks were not following micro-prudential rules strongly enough and so these rules must be intensified and made more complete. The spread of micro-prudential rules can weaken the systemic elasticity.

The best solution from a systemic perspective to the problem causing assets to turn 'toxic' is that: the firms that have financed these assets with short-term liabilities should certainly mark them down and the other firms who have approached long-term liabilities should be able to consider if the assets are now fair value at the marked-down price and if they should buy. Instead, the spread of micro-prudential rules (non-banks) like insurance firms and funds have the tendency to lead to everyone being a seller at the same time.

Regulators must be careful about the application of micro-prudential rules, especially those on responding to market measures of value and risk, and ensure that they do not artificially create homogeneous behavior.

It happens often that during the booms of banks, the borrowers underestimate risks and when the crash comes, they overestimate risks. An essential problem is the big alteration in risk perceptions, from "too low" to "too high".

The purpose of macro-prudential regulation is to narrow this gap by forcing banks to commit the highest risks than they think they do in the boom – by putting aside more capital than they think they need and try to support lending.

3. Macro-prudential regulation

After the last financial crisis, the term "macro-prudential" has developed to be very significant and useful in the financial system. Although the term has been used far before the crisis, its meaning remains unknown. The origin of the term dates back to the late 1970s, under the context of international bank lending. International efforts to reinforce the financial system have been focused on the improvement of macro-prudential orientation of regulatory and supervisory framework, explicitly an expanded focus on the financial system as a whole and its connection with the macro-economy.

Supervision of financial and macroeconomic stability in long-term periods requires the adoption of structures of macro-prudential referents which are set up precisely as a helpful element in the adaptation and improvement of the methods of monetary policy that are working well even nowadays.

The impressing thing about this crisis given the commentary is that it was not caused by banks throwing hand grenades of 'toxic' assets into unsuspecting crowds and running as far away from them as possible; it was caused by banks throwing hand grenades of 'toxic' assets into crowds that did not suspect anything and compete as far as possible from them, because they did not think they were 'toxic'. In fact, they compiled complex special purpose tools to get more exposure to them than their capital adequacy requirements would allow. On the contrary, a macro-prudential approach to regulation considers the systemic implications of the collective behavior of financial firms.

An important feature of macro-prudentially regulation and financial stability is the heterogeneity of the financial system; homogeneous behavior, where everyone sells or buys at the same time.

In general the participants of the market were initially supposed to be heterogeneous but due to a various number of factors, regulatory or not, they were leaded to homogeneity. From this point of view, the systemic risk is endogenous and macro-prudential regulation is about identifying those endogenous processes that turn heterogeneity into homogeneity and make the financial system more fragile.

4. The differences of macro- and micro-prudential perspectives

According to Borio (2003)¹ the macro- and micro-prudential perspectives change towards their objectives and their understanding about the nature of risk.

The traditional micro-prudential regulation aims to increase the security and stability of the individual financial institutions compared to macro-prudential regulation that is most focused in the welfare of the financial system as a whole.

Further, the risk has been supposed to be exogenous under the micro-prudential perspective, in the supposed meaning of a "potential shock" causing a financial crisis that originates beyond the financial system behavior.

The macro– and micro-prudential perspectives compared		
	<i>Macroprudential</i>	<i>Microprudential</i>
<i>Proximate objective</i>	Limit financial system-wide distress	Limit distress of individual institutions
<i>Ultimate objective</i>	Avoid output (GDP) cost	Consumer (investitor/depositor) protection
<i>Characterisation of risk</i>	Seen as dependent on collective behavior (“endogenous”)	Seen as independent of individual agents behaviour (“exogenous”)
<i>Correlations and common exposures across institutions</i>	important	irrelevant
<i>Calibration of prudential controls</i>	In terms of system-wide risk; Top-down	In terms of risk of individual institutions; bottom-up

On the other hand, macro-prudential approach admits that the risk factors can be configured and endogenous, in other word with a systemic occurrence.

In accordance with this argumentation, macro-prudential policy is addressed to individual financial institutions, markets and their common exposure to risk economic factors. It is also focused in the "pro-cyclical" behavior of the financial system in the effort to promote its stability.

5. Implementation of counter-cyclical regulation

There is a growing consensus that the most important manifestation of market failure in banking and financial markets through the decades is pro-cyclicality. The credit mistake is made during the boom and this is very obvious. A rapid increase in loan portfolios is tightly associated with an increase in non-performing loans. Loans given during booms have a higher probability of being default than those made in periods of slow credit growth. The collateral requirements are often relaxed in good times as collateral prices rise and tightened in bad periods.

There is an agreement of Basel II and Financial Reporting Standards which consists in an additional pro-cyclical impact over the capital required by banks, reinforcing further the natural tendency of banks for pro-cyclically loans. Counter-cyclical bank regulation can be introduced, through banks’ provisions or through their capital. It is important that this is done through simple rules, so regulators cannot stay calm in boom times, when they can become over-enthusiastic in booms.

¹ Borio, C. (2003). *Towards a macro-prudential framework for financial supervision and regulation?* BIS working Papers No 128, February

Introducing counter-cyclical bank provisions has already been implemented in Spain and Portugal some time ago, and has demonstrated this is feasible and in accordance with Basel rules. The Spanish dynamic provision system requires higher provisions when credit grows more than the historical average, relating provisioning to the credit cycle. According to this system, provisions built up during an improvement accumulated in a fund which is called 'statistical provisions' but can be considered 'macro-prudential provisions' can go up to a slump to cover loan losses.

This opposes the financial cycle as it discourages the excessive lending in booms and strengthens the banks in bad times. Counter-cyclical rules are related to the changes in the credit exposure of financial institutions. In particular, financial institutions could be asked to increase provisions when there is excessive growth of credit compared to a benchmark in lending toward sectors subject to cyclical fluctuations.

In fact India adopted counter-cyclical provisioning requirements for lending in the housing market similarly to the Spanish case. An alternative approach for counter-cyclical bank regulation through provisions is by means of capital. Charles Goodhart and Avinash Persaud have presented a specific proposal: *increasing capital requirements by a ratio linked to recent growth of total banks' assets*.

This provides a clear and simple rule for taking into consideration counter-cyclical regulation and can be easily implemented. In this proposal, each bank should have a basic allowance for asset growth, linked to macro-economic variables, such as inflation and the economic growth rate in long terms. The growth above the basic allowance during the past year would have a 50 percent weight; growth during the year before that would have a 25 percent weight and so on until 100 percent is approximated. Regulatory capital adequacy requirements could be raised by 0.33 percent for each 1 percent growth in bank asset values.

For example, if bank assets grew 21 percent above the growth allowance, the minimum capital requirements would rise from 7 percent to 15 percent. Knowing that credit cycles tend to be national, the application of counter-cyclical regulations needs to be on a host country. This would serve by adding an obvious improvement. The existing framework of macro-prudential banking regulation was insufficient and was recognized as such by commentators for a certain period.

We are not against micro-prudential regulation in itself since we believe supervisors have an important role in consumer protection issue and protecting the tax payer from abuse of the implicit government insurance. Aside from the absence of macro-prudential regulation, we note that zeitgeist on the boom time, 'government bad, markets good', impacted the quality of micro-prudential regulation. Supervisors were sufficiently ambitious in their surveillance of banks. So, the last mentioned should make sure they understood exactly how a bank earns its profits and if they understood that fully, and are aware of the amount and type of risk a bank is taking to earn those profits. It is often said that endogenous risks that destroy the financial system often relate to a badly-considered application of micro-prudential regulation.

6. Regulation of funding and liquidity

Imagine two banks have the same possessions. One finances expensive assets, using deposits from their base deposit and the other finances cheap assets by the daily borrowing. Previously, the bank regulations did not make a difference between these two kinds of banks. The markets did not distinguish between the two banks even when they thought that in the short-term financing the bank was more 'efficient' given that its financing was cheaper.

Northern Rock which financed 120% mortgages with short-term borrowing in capital markets had a higher rating in the stock market than HSBC which relied much more on deposits to finance the assets. The predominant prospect was that risk was natural in the asset, not its financing, however we can see today that these two banks are truly different and that the risk of the asset reflects a combination of the liquidity of the asset and the liquidity of the financing.

The minimum financing liquidity is back on the table for discussions at the Basel Committee on Banking Supervision and at the Financial Stability Board. The U.K. amongst others has already announced

that new liquidity requirements will necessitate banks to clutch more capital. A manner has been set in which capital could be used to disincentive maturity mismatches.

In a financial crisis the liquidity of assets falls as the maturity of financing contracts, which brings a bank to put aside capital for liquidity using existing measures of the liquidity of assets and liabilities. The implication is that for regulatory purposes the liquidity definition of assets could be fixed into two camps (liquid and illiquid) and the capital requirement could be different in different times.

The liquidity based on the capital adequacy requirement can be multiplied by a factor that is reflected in mismatch of the degree of maturity between pools of assets and pools of funding. Assets that the central bank does not consider suitable for posting of liquidity will be supposed to have a fixed 'liquidity maturity' of 2 years. If this amount of assets was financed by a quantity of two-year deposits, there might not be any liquidity risk.

7. Regulation of instruments and markets

The crisis and the dysfunction of wholesale markets in complex instruments have raised the issue that complex instruments have to be faced with regulations. These must be micro-prudential issues. Complexity is often connected to other problems. Products might be complex to try the evasion of regulations or taxes 'mis-sell' to uninformed buyers. The evasion of the regulation and taxes and mis-selling with the complex that simple products are illegal in most juridical cases. These laws must be enforced and implemented. Supervisors should be authorized to look at all instruments of the markets and, if they believe that their use or growth raises systemic issues, require quick regulation. The contracts for instruments that are made complex to cheat consumers should be non-implemented by the authorities. This should push sellers to ensure buyers understand the instruments they use. Regulators should be able to block the implementation of the deceptive instruments before any buyers have any losses.

Nonetheless the fault regulation lines remains with systemic risk for consumer protection. The risk is created by trying to match simple assets to complex liabilities. In some cases, individuals do not have access to assets and instruments of abundant complexity. A retail investor can buy today a simple product and that is an instrument that tracks the capital index. Management charges for these products are minor and transparent. The value of the instrument is transparent and reported regularly.

But this is a highly risky asset for many people, especially elderly people, because the capital index does not counterbalance their financial liabilities: the cost of their mortgage, pension, health care, etc. Certainly, at times of general unemployment, the value of asset falls exactly at the time when a typical individual's net liabilities increase.

We can imagine a product that delivers financial insurance for an aged person alongside the potential expenditures they he may have in the future and rises in value when the individual's liabilities rise. It will be significantly complex, illiquid, a derivative instrument, but it would be low risk for an elderly buyer.

Sometimes complexity may not be bad. Similar issues arise with the idea that we have to define 'safe' and 'risky' products to sanction the first and prohibit the second. This is decent intention, but a wrong one as well. Our key focus should not be instruments, they are fluid, easily created and abandoned.

Most of complex instruments are in fact packages of simple instruments put together to make them cheaper than buying each of them distinctly. The essential problem with the dishonest notion good and bad, safe or risky instruments is that risk is less a function of the instrument and more a function of behavior.

Declaring assets 'risky' or 'safe' will change behavior in an opposing way. The complexity of illiquid instruments can be used in a safe manner and a simple one, liquid instruments like mortgage can be used in an unsafe manner. We need to regulate risky behavior, mostly by limiting through capital requirements or otherwise the incompatibility between risk taking and risk capacity.

8. Starting the implementation of micro- and macro-prudential measures in Albania

Central and Eastern European countries have several common features in their economic and financial structures. They were affected by the same crisis at the same time. Economies of Central and Eastern European countries are characterized by the same pattern of development and share similar hitches. These countries benefited from large inflows of capital, mainly in the form of foreign direct investment, remittances, and external financing. Banks originated from Western Europe penetrated our financial system, subsequently increasing financial intermediation and facilitating capital inflows. This process headed to rapid credit growth and economic growth based on consumer-oriented model. While the inflation generally was kept under control, imbalances and financial weaknesses have been growing in the form of fast growth of real estate prices and balance sheet exposure to foreign currency liquidity.

During the 2008 crisis Albania was confronted with a lack of liquidity as a consequence of the withdrawal of deposits, as well as lower levels of remittances and foreign direct investment. Balance sheets were affected by problems associated with the lack of liquidity and exchange rate depreciation, which was later reflected negatively on consume and investment. Given this retrenchment of the economy, the natural instinct of macroeconomic policies is undertaking countercyclical measures in the form of expansionary monetary and fiscal policies. In fact the countries that experienced lower macroeconomic and financial imbalances were in a better position to undertake countercyclical policies, and in fact they turned out to be the countries that over crossed earlier the effects of the crisis.

Albania was not faced with banks bankruptcy or with capital injections from the government side, also quickly changed the course of the trust crisis and its negative impacts in the financial system.

A minor economic growth has been experienced, even though at a slower pace and the inflationary expectations has been managed to be kept anchored. The apprehension of the banking system in general was that²:

1. Many gaps were being created in a short period and the Albanian economy seemed to be experiencing what would later be called the “risk taking channel”.
2. Observations showed that the banking sector was miscalculating risks. The high concentration in certain sectors or clients indicated the lack of a proper risk analysis and risk management by banks, while lending to uncovered borrowers in a flexible exchange rate regime seemed an issue potentially related with moral hazard.

The first concern was handled by increasing *the exchange of information and facilitating the dialogue between monetary policy, financial stability and bank supervision*. Typically, monetary policy responsibility extends from the lowest point to the highest one of the business cycle. For this reason, the possibility that monetary policy forget about financial stability is tangible.

Hence, it is crucial that supervisors of financial stability should be involved in the monetary policy decision-making process. Thus, the monetary policy of the Bank of Albania is not only focused on the discussion of macro effects, but also in the discussion of the micro effects of decision-making.

The second concern was handled through the establishment of more stringent measures in macro-prudential regulations and by strengthening “at the place-supervision” of second level banks.

Through these regulatory and supervisory interventions it was intended to: improve the governance and transparency of commercial banks, strengthen risk assessment and the strategies for its restraint, improve of capital adequacy and liquidity ratio, and reduce the exposure to credit risk arising from uncovered borrowers in foreign currency or greedy practices followed by the commercial banks.

The concrete measures taken by the Bank of Albania were:

- Establishment of new quantitative limits for calculating, supervising and reporting of large exposures of banks to mother banks and related entities.

² Bank of Albania annual report 2011.

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- Setting lower limits to large exposures of banks in order to better diversify the risk arising from the concentration of banks' investments in international financial markets.
 - Internal control as an integral part of banks' governance should cover every part of the bank, in order to prevent the rise and development of unwelcome risks.
 - Standardization of information that banks and branches of foreign banks should give about the main activity of banks, their organization and management, and their financial performance, risk management and accounting policies.
 - Paying special attention even to transparency regarding banking and financial products and services offered. New legal requirements standardize the manner and form of providing information to customers about products and services offered by them.

Bank of Albania injected abundant liquidity in local currency in the interbank market, simultaneously strengthening banking supervision and cooperation with foreign supervisory authorities of these banks.

A specific development that needs to be mentioned is the increased deposit insurance limit, measure which marked a turning point in the crisis of public trust in the banking system and in the problems associated with liquidity in this system. From a narrow perspective focused on the principal objective of prices stability, obviously, the focus of the monetary policy was undertaking expansionary measures.

Nevertheless, the Albanian economy benefited macroeconomic stimulus in the form of fiscal expansion. This countercyclical policy became possible as a result of the previous work to consolidate the fiscal position and anchor macroeconomic policies and public expectations. So the first lesson to be learned from the supervisory authorities' of getting out of crisis was following counter-cyclical policy, which would allow for braver measures in times of crisis. In the short term, central banks possess the necessary tools to achieve two objectives: the base interest rate over refinancing operations; macro-prudential policy at system level; and micro-prudential supervision of commercial banks.

The availability of two objectives and at least two instruments should allow an optimal mix of policies. Each time we face significant economic problems with potential adverse impacts on the system, and then the focus moves towards financial stability. It is presumed that the first and foremost task of a central bank is to ensure the integrity of the currency and of the banking system.

9. Conclusions

The last financial crisis has affected the importance of effective systemic risk measurement, which remains a key factor in macro-prudential and regulatory policies. For this reason, the measurement of systemic risk can touch the identification and evaluation of threats to financial stability.

The term "macro-prudential" has risen from virtual obscurity to an astonishing importance, especially after the recent financial crisis. Since its origins in the late 1970s, the term has always defined apprehensions about the stability of the financial system and its connection with macro-economy.

At the same time, the specific focus of these concerns has changed over time. Concerns have been successfully interconnected to excessive lending to developing countries, as well as the impact of financial innovation and the development of capital markets, the impact of the regulation on "procyclicality" of the financial system, as well as the implications of the failure of important systemic institutions.

Over time, continuous efforts have been made to clarify the meaning of the term macro-prudentially. This term refers to the use of prudential tools with a clear objective to promote the stability of the financial system as a whole and not necessarily to individual institutions within it. Macro-prudential surveillance policies are strategic instruments to ensure financial stability, "in fact they can reduce" the repetition of systemic risks and structural weaknesses. Macro-prudential instruments include the integral requirements and capital accumulation in a liquidity indicators provisions perspective and careful appraisal of the collateral.

A central bank cannot avoid its responsibility for maintaining financial stability, although it is not defined as a specific term.

The experience of Albania as a country with a developing economy shows that price stability and financial stability are prerequisites for each other.

Regarding macro-prudential policies, the need for the development of specific anchors was argued, which would make the objective of financial stability more reliable, more transparent and therefore more accessible.

Measurement of financial stability or instability can be a hard process, but this should not discourage us from trying to accomplish it.

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Indicators of quality of work as predictors of quality of life

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Abstract. *The paper aims to analyze the extent to which the indicators of the quality of work can be seen as good predictors of the quality of life. To describe the various aspects of the quality of work and employment, data on answers to 12 questions covering 7 dimensions of quality of work were extracted from the European Working Conditions Survey (EWCS) database available on Eurofound website. Four well-known composite indicators were considered for the assessment of the quality of life: Economist Intelligence Unit (EIU) Quality of Life Index, Satisfaction With Life Scale (SWLS), OECD Life Satisfaction indicator and Human Development Index (HDI). A series of multiple linear regressions were run in order to select the most relevant predictors of quality of life indicators. Results show that the percentage of those who are “very satisfied or satisfied with working conditions in their main paid job” is the main predictor both of EIU Quality of Life Index (R square = 0.429), of HDI 2005 (R square = 0.619) and of SWLS (R square = 0.61). Percentage of those who agree that their “job offers them good prospects for career advancement” explains 68.4% of the total variance in OECD Life Satisfaction indicator, while together with “working hours - family/ social commitments outside work fit” and proportion of those “usually working less than 30 hours per week in their main paid job” account for 79.5% of the total variance in the predicted variable. HDI 2010 values are the best predicted by the percentage of those who “agree that they might lose their job in the next 6 months” (R square = 0.624).*

Keywords: quality of work, quality of life, quality of life indicators, quality of life predictors.

JEL Codes: I31, I32, J81

1. Introduction

The paper relies on the idea that one component of the quality of life is individuals' quality of work. Practically, work represents an important part of people's life.

The issue of the quality of work and employment has been officially put on the agenda of European policies since the European Council in March 2000 when the so-called Lisbon Strategy was launched. As the Social Policy Agenda states, “quality of work includes better jobs and more balanced ways of combining working life with personal life” (Commission of the European Communities, 2001, pp. 3-4).

Although work is often experienced as having a negative impact on life, (Terkel, 1972, p. xiii; Pocock, 2003, p 153, cited in Eikhof et al., 2007, p.326) which rules and ruins people's lives (Bunting, 2004, cited in Eikhof et al., 2007, p. 326), there are research studies that find also positive consequences of work on life, such as: work is a place of intellectual expression and personal fulfilment (Behr, 2007), can represent escape and self-expression, may be experienced as a means of escaping family stress (Cowling, 2005, p. 30; Hochschild, 1997; Trinca & Fox, 2004), or can be a source of satisfaction and self-fulfilment (Isles, 2004, p. 23, Eikhof et al., 2007, p. 327). Moreover, the long working hours are not always an obstacle in achieving work-life balance since it might be the worker's choice to work more so as to earn more money (Cowling, 2005, p. 35) or to assert herself / himself.

According to Rice et al. (1980, p. 57), general hypotheses concerning work - non-work relations are: spillover, compensation, and segmentation. The formulation of these three hypotheses is generally credited to Wilensky (1960), but other researchers have proposed similar ideas. The *spillover hypothesis* proposes direct coloration of non-work domains by experience at work, and vice versa (Rice et al., 1980, p. 57). This hypothesis argues that the activity, involvement and attitudes of one sphere of life (e.g., work) are positively related to the activity, involvement and attitudes in other life spheres (Rice et al., 1980; Champoux, 1981; Rain et al., 1991, cited in Riley, 2000, p. 4). The spillover hypothesis also indicates that one's level of job satisfaction can spillover and influence behavior in other spheres of life, which in return, can impact general life satisfaction (Rice et al., 1980; Rain et al., 1991, cited in Riley, 2000, p.1). The implication is that the quality of work life and job satisfaction is important to the overall quality of life. The *compensation hypothesis* proposes an inverse relationship between work and non-work spheres of life, considering that workers seek experiences and rewards in extra-work activities that are denied to them in work, and vice versa (Rice et al., 1980, p. 57). The *segmentation hypothesis* proposes that work and non-work domains of life are sharply separated from one another without significant mutual influence (Rice et al., 1980, p. 57).

While the relationship between the quality of work and the quality of life may possibly be reciprocal, most research conceptualizes the quality of work as affecting the quality of life (Rain et al., 1991). The relationship between job satisfaction and life satisfaction has best been supported by the spillover hypothesis.

Following a large review of literature, Rice et al. (1980) found it to be, on the whole, most consistent with the spillover model. The data indicate that people who are satisfied with work also tend to be satisfied with other specific domains of life and with life overall (Rice et al., 1980, p. 58). On the other hand, people who are dissatisfied with work also tend to be dissatisfied with other domains of life and with life overall. Research on the social psychology of work suggests that the quality of work life can have pervasive consequences on one's sense of worth and one's personal sense of control (Mortimer, 1979; Mortimer and Lorence, 1989; Gecas and Schwalbe, 1983, cited in Riley, 2000, p. 1).

Several studies have suggested the relationship between working conditions and worker's QOL (Lerner et al., 1994; Stansfeld et al., 1998; Nasermoaddeli et al., 2003; Kudielka et al., 2005 cited in Rusli et al., 2008). For example, Nasermoaddeli et al. (2003) have shown that low job demand is significantly associated with a higher perception of physical health, psychological status, and social relationship domains; whilst low job control (decision option) is related to the lower perception of the physical health domain of QOL. Meanwhile, Kudielka et al. (2005) suggested that high job demand, low job control and lack of social support at work exert a significant impact on the self-reported health-related QOL.

Using data on a sub-sample of workers in dual-earner families (from the 1992 National Study of the Changing Workforce), Moen and Yu (2000) found conditions at work serving as key predictors of life quality indicators for both men and women. Specifically, having a demanding job and job insecurity are associated with low life quality, while having a supportive supervisor is positively linked to life quality outcomes. Work hours and work-hour preferences matter as well. Men and women in couples where both spouses work regular (39-45) full-time hours, tend to score high on indicators of life quality, while those working long hours and those preferring to work less, are less likely to do so.

Following the broad interest manifested in the research literature for the study of the relationship between work and the quality of life, the paper aims to analyze the extent to which the indicators of the quality of work can be seen as good predictors of the quality of life. The research is structured in three sections as follows. First section provides a short description of the indicators of the quality of work and of the quality of life and presents the method of analysis. The second section highlights research results, while the third section presents the concluding remarks.

2. Material and method

The data source used to describe the various aspects of the quality of work and employment is the *European Working Conditions Survey* (EWCS). EWCS was launched in 1990, when workers in the EC12 were surveyed, and has taken place every five years since then. Its geographical coverage was extended over

time. The fifth EWCS covered EU27 member states, Norway, Croatia, the Former Yugoslav Republic of Macedonia, Turkey, Albania, Montenegro and Kosovo (www.eurofound.europa.eu). The survey questionnaire comprises now 13 topics, each topic being assigned between 5 and 12 questions. Within this paper, data on answers to 12 questions covering 7 dimensions of the quality of work were extracted, both for 2005 and 2010, from EWCS database available on *Eurofound* website. Extracted data cover EU27 countries, plus Norway, Croatia, Turkey and Switzerland in 2005 and EU27, Norway, Croatia, the Former Yugoslav Republic of Macedonia, Turkey, Albania, and Montenegro in 2010. Table 1 presents selected themes and questions and response categories.

Table 1 Dimensions of the quality of work and their indicators

Dimension	Indicator
Job context	I might lose my job in the next 6 months (Agree) (%)
Working time	How many hours do you usually work per week in your main paid job? (less than 30) (%)
Working time	How many hours do you usually work per week in your main paid job? (more than 40) (%)
Working time	How many times a month do you work in the evening, for at least 2 hours between 6.00 pm and 10.00 pm? (once or more) (%)
Working time	Normally, how many times a month do you work at night, for at least 2 hours between 10.00 pm and 05.00 am? (once or more) (%)
Working time	How many times a month do you work in the weekend? (index) (once or more) (%)
Work intensity	Job involves working to tight deadlines (At least a quarter of the time) (%)
Health and well-being	Do you think your health or safety is at risk because of your work? (yes) (%)
Career prospects	My job offers good prospects for career advancement (agree) (%)
Job fulfilment	Very satisfied or satisfied with working conditions in your main paid job? (%)
Job fulfilment	I am well paid for the work I do (agree) (%)
Work-life balance	In general, working hours fit in with family or social commitments outside work very well or well (%)

Four well-known composite indicators were considered for the assessment of the quality of life: *Economist Intelligence Unit (EIU) Quality of Life Index* (calculated for 2005), *Satisfaction With Life Scale* (SWLS, available for 2006), *OECD Life Satisfaction indicator* (extracted for 2009 from OECD database) and *Human Development Index* (HDI, available both for 2005 and 2010). Apart from OECD Life Satisfaction Indicator, which misses data for 10 countries, all other three indicators of the quality of life totally cover the samples.

- *Economist Intelligence Unit (EIU) Quality of Life Index*

The Economist Intelligence Unit has developed, in 2005, a “quality of life” index based on a methodology that links the results of subjective life-satisfaction surveys to the objective determinants of the quality of life across 111 countries (EIU, p. 1). The index is determined on the basis of 9 factors corresponding to nine groups of indicators, as follows: *healthiness* – life expectancy at birth (in years); *family life* – divorce rate (per 1000 population), converted into index of 1 (lowest divorce rates) to 5 (highest); *community life* – variable taking value 1 if country has either high rate of church attendance or trade-union membership, zero otherwise; *material well being* – GDP per person, at PPP in \$; *political stability and security* – political stability and security ratings; *climate and geography* – latitude, to distinguish between warmer and colder climates; *job security* – unemployment rate (%); *political freedom* – average of indexes of political and civil liberties, scale of 1 (completely free) to 7 (unfree); *gender equality* – measured using ratio of average male and female earnings (EIU, 2006, p. 2).

- *Satisfaction With Life Scale (SWLS)*

In 2006 Adrian G. White, an analytic social psychologist at the University of Leicester, analyzed data published by UNESCO, the CIA, the New Economics Foundation, the WHO, the Veenhoven Database, the Latinbarometer, the Afrobarometer, and the UNHDR, to create a global projection of subjective well-being:

the first world map of happiness (University of Leicester, 2006). White (2007) says that in the literature the underlying state of happiness is conceptualized as a sense of satisfaction with one's life, both in general and in specific areas of one's life such as relationships, health and work. It is this underlying state of happiness, a measure of subjective well-being (SWB) that is the focus of most current research. A good example of this is the Satisfaction With Life Scale (Pavot and Diener, 1993), a popular measure of SWB. The paper of White (2007) presents a table that gives the SWLS score for 178 countries. These data on SWLS are extracted by White from Marks et al. (2006). I selected the SWLS scores used in the paper from White's table (2007).

- *OECD Life Satisfaction Indicator*

Life satisfaction measures how people evaluate their life as a whole rather than their current feelings. It captures a reflective assessment of which life circumstances and conditions are important for subjective well-being. I used the data for Life satisfaction topic of OECD Better Life Index, provided by OECD on their site www.oecdbetterlifeindex.org. OECD Life Satisfaction Indicator is calculated as average self-evaluation of life satisfaction, on a scale from 0 to 10.

- *Human Development Index (HDI)*

The Human Development Index (HDI) is a summary measure of human development which is based on the assumption that economic development does not necessarily equate to human development or improvement in well-being. It was created and developed through the combined work of the economists Mahbub ul Haq and Amartya Sen in 1990, being published by the United Nations Development Programme since then and having the explicit purpose "to shift the focus of development economics from national income accounting to people centered policies" (www.undp.org). Starting with the 2011 Human Development Report, the HDI combines three dimensions using a geometric mean of three indices (http://en.wikipedia.org/wiki/Human_Development_Index): a long and healthy life (using a life expectancy at birth index), access to knowledge (through an education index calculated using mean years of schooling and expected years of schooling), and a decent standard of living (through an income index calculated using GNI per capita (PPP US\$)). Until the UNDP 2011 report, the HDI combined three dimensions (http://en.wikipedia.org/wiki/Human_Development_Index): life expectancy at birth, as an index of population health and longevity; knowledge and education, as measured by the adult literacy rate (with two-thirds weighting) and the combined primary, secondary, and tertiary gross enrollment ratio (with one-third weighting); and standard of living, as indicated by the natural logarithm of gross domestic product per capita at purchasing power parity. In the paper I considered values of HDI from 2005 and 2010, which are calculated using the old method.

In order to select the most relevant predictors of the quality of life indicators, a series of multiple linear regressions were run within each set of quality of work indicators. I used the *stepwise* method available in SPSS for Windows as it helps to include only the most useful variables in the model. This method implies the introduction of the variables in the model or their exclusion from the model in successive stages until its optimal combination is achieved.

3. Results

Multiple regression using stepwise algorithm identifies the percentage of those who are *very satisfied or satisfied with working conditions in their main paid job* as being the best predictor of EIU Quality of Life Index, as it explains 42.9% of the variance in EIU index (fig. 1). If this variable is not included in the dataset, then the best predictor of EIU Quality of Life Index would be the percentage of those who agree they *are well paid for the work they do*. This indicator explains 41.6% of the variance in EIU index. In case this second variable is also not included in the dataset, then a third model could be constructed, using *stepwise* algorithm, with 3 indicators: percentage of those who agree they *might lose their job in the next 6 months*; percentage of those who *once or more times a month use to work in the evening, for at least 2 hours between 6.00 pm and 10.00 pm*; and percentage of those who agree that their *job offers good prospects for career advancement*. The capacity of the new model of explaining quality of life as defined by EIU is of 56.1%.

Using the same dataset and the same procedure also for SWLS and for HDI 2005, the following aspects can be noticed.

The percentage of those who feel *very satisfied or satisfied with working conditions in their main paid job* is the best predictor also for SWLS, explaining 61% of this indicator variability (fig. 2). The next most correlated predictors with SWLS are: *job involves working to tight deadlines at least a quarter of the time (%)* and the percentage of those who agree they *are well paid for the work they do*. The first two variables could predict the SWLS in a proportion of 73.8%, while all the three together explain 79.1% of the variance in SWLS.

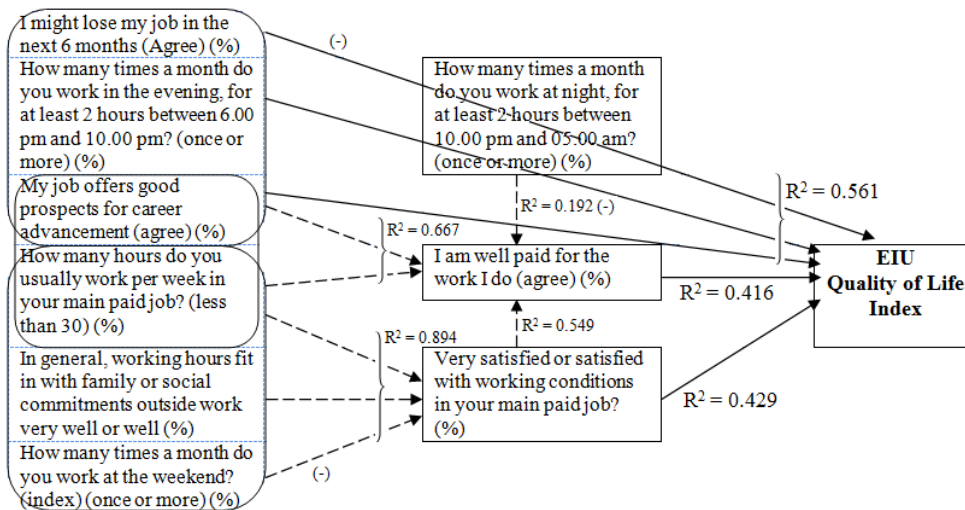


Fig. 1: Quality of work indicators as predictors of EIU Quality of Life Index.

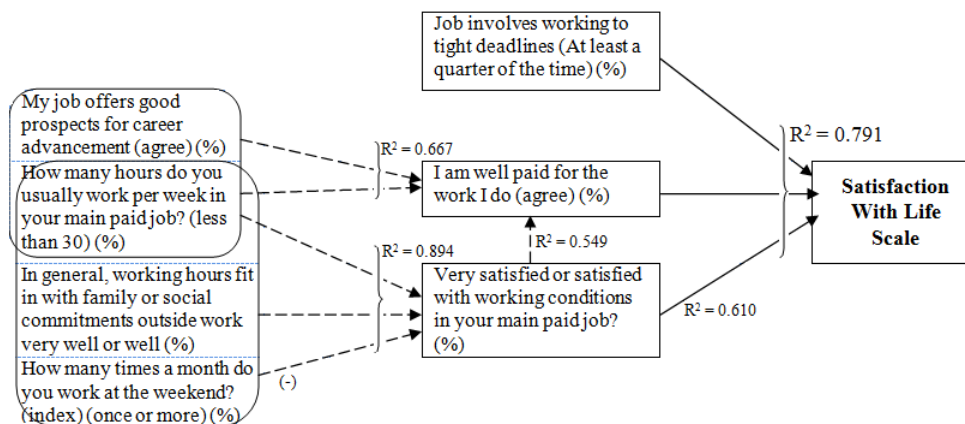


Fig. 2: Quality of work indicators as predictors of Satisfaction With Life Scale.

The percentage of those who feel *very satisfied or satisfied with working conditions in their main paid job* remains the best predictor also for HDI 2005, accounting for 61.9% of its total variance (fig. 3). A second model could be constructed including a new variable: the percentage of those who *once or several times a month use to work in the evening, for at least 2 hours between 6.00 pm and 10.00 pm*. The new model could predict HDI 2005 in a proportion of almost 80%.

According to the sign of corresponding regression coefficients, working at night or in the weekend, as well as the perceived insecurity of job would negatively affect the value of the EIU quality of life index.

In the case of OECD Life Satisfaction indicator, the percentage of those who agree that their job offers them good prospects for career advancement explains 68.4% of its total variance (fig. 4). Two other models can be constructed including successively the percentage of those for whom working hours fit in with family or social commitments outside work very well or well and the proportion of those usually working less than 30 hours per week in their main paid job. These new models account for 74.1% and, respectively, 79.5% of the total variance in the predicted variable.

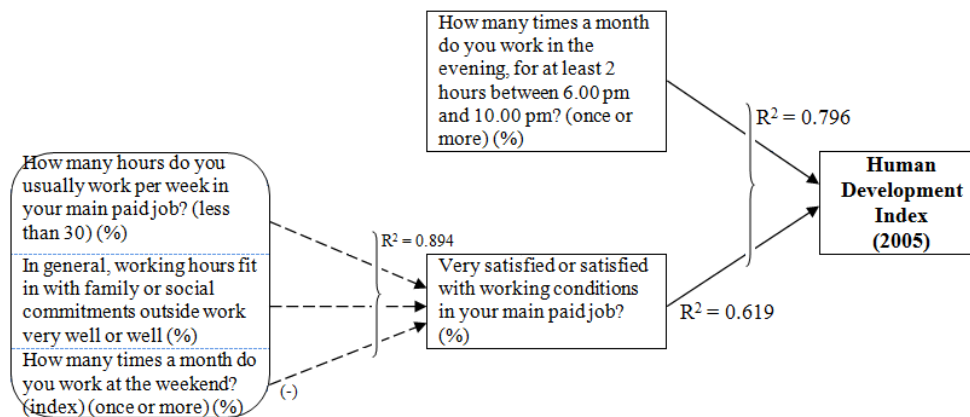


Fig. 3: Quality of work indicators as predictors of Human Development Index (2005)

HDI 2010 values are the best predicted by the percentage of those who agree that they might lose their job in the next 6 months ($R^2 = 0.624$). Two alternative models can be achieved if successively adding in the equation the percentage of those who once or several times a month work at night, for at least 2 hours between 10.00 pm and 05.00 am and the percentage of those who agree they are well paid for the work they do, explaining 73.7% and, respectively, 81.3% of the total variance in HDI 2010 values (fig. 5).

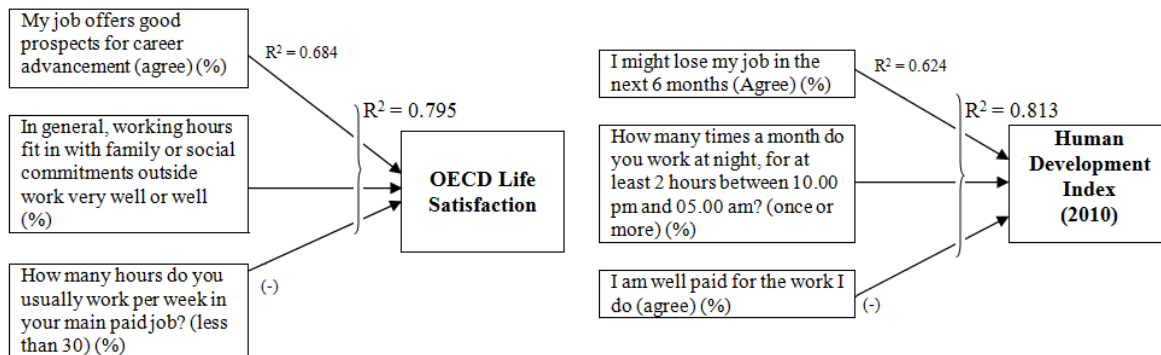


Fig. 4: Quality of work indicators as predictors of OECD Life Satisfaction

Fig. 5: Quality of work indicators as predictors of Human Development Index (2010)

4. Conclusions

Starting from the idea that work represents an important dimension of individuals' life, the paper tried to explore the extent to which one can identify good predictors of the quality of life among the indicators of the quality of work.

Results of a series of multiple regressions with different indicators of quality of life as dependent variables and a set of indicators of quality of work as explicative variables show the following:

- Percentage of those who are *very satisfied or satisfied with working conditions in their main paid job* is the main predictor both of EIU Quality of Life Index (R square = 0.429), of HDI 2005 (R square = 0.619) and of SWLS (R square = 0.61).
- Percentage of those who agree that their job *offers them good prospects for career advancement* explains 68.4% of the total variance in OECD Life Satisfaction indicator, while together with *working hours - family/ social commitments outside work fit* and proportion of those *usually working less than 30 hours per week in their main paid job* account for 79.5% of the total variance in the predicted variable.
- HDI 2010 values are the best predicted by the percentage of those who *agree that they might lose their job in the next 6 months* (R square = 0.624).

If the dataset for 2005 shows the percentage of those who are *very satisfied or satisfied with working conditions in their main paid job* as the main predictor of all the three composite indicators of quality of life, the second dataset identifies substantial differences for different indicators of quality of life, as well as for the same indicator (HDI) at different moments (2005 and 2010).

It can be concluded that although there are indicators of quality of work which could explain high proportions of the variance in quality of life indicators, results do not allow identifying a predictor that is stable both in time and among different measures of quality of life.

5. Acknowledgements

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Cooperation is essential for 2⁰ Target: a new perspective from the Dynamic Game Model

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Abstract. *A theoretical country-level dynamic game model involving both the particularity of climate change investment and individual's subjective initiatives is put forward. Positive, negative, spillover effects of climate change investment and the individual's dynamic strategies are distinguished and involved into the theoretical model. With numerical simulation and sensitivity analyses, the essentiality of cooperation for 2 °C target is then proved. The lack of self-driven force for cooperation in climate negotiation is further explained from the perspective of game theory. In addition, the feasibilities to realize generalized Pareto improvement with effective compensation and benefit transfer mechanisms are also confirmed.*

Keywords: climate change negotiation, Game model, Cooperation, 2 centigrade degrees.

JEL codes: C70.

1. Introduction

Climate change has been one of the most serious threats influencing the living environments of human beings in the future. As a result of deforestation and massive discharge of GHG (Green House Gas) from fossil fuel combustion, the stock of GHG has been rising, along with higher risks of global warming. Limiting global warming to 2°C above pre-industrial global mean temperature has become a widely endorsed goal^[1]. AGGG (The WMO/ICSU/UNEP Advisory Group on Greenhouse Gases) claimed that a 2°C increment was “an upper limit beyond which the risks of grave damage to ecosystems, and of non-linear responses, are expected to increase rapidly”^[2]. However, neither the Kyoto Protocol nor the Copenhagen Accord is sufficient to coordinate each country's responses to the 2°C target. For the Kyoto Protocol, only a group of countries have agreed to legally binding reductions in the first commitment period (2008~2012), which is too tiny to make a difference globally. Moreover, the negotiation about the binding targets in the second commitment period has stalled due to the disagreements about the rights and responsibilities.

Then what would happen to the 2°C target given the serious negotiation situation? Up to now, some theoretical analyses have been made to reveal the essence of climate change negotiation with public goods theory^[3-5], and externality of public goods leads to the failure of cooperation in climate negotiation. Although it's intuitively acceptable that there might be a connection between the cooperation failure and the 2°C target, few researches can effectively prove the relationship. Taking into account the particularity of global warming and each country's subjective initiative, the relationship is far more complicated than expected. This article attempts to figure out the relationship with utility and game theory by involving both the particularity and individual initiatives. Firstly, a theoretical model is introduced in Section 2. The particularity of abatement is implemented by distinguishing the three different effects of climate change

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investment (CCI) on each country's utility and the subjective initiatives by dynamic game theory. Secondly, numerical simulation and sensitivity analyses are carried out in Section 3. Finally, this article ends up with discussions and conclusions in Section 4.

2. Theoretical Dynamic Game Model

2.1. Individual utility

For country i at time t , its utility $U_{i,t}$ meets the CRRA (Constant Relative Risk Aversion) form where η_i and $C_{i,t}$ donate the index of relative risk aversion and consumption at time t respectively. Each country's rational target is maximizing its total net utility, i.e. $Utility_i = \int_0^{+\infty} e^{\delta t} \times U_{i,t} dt$. where δ is discounting rate.

$$U_{i,t} = \frac{C_{i,t}^{1-\eta_i}}{1-\eta_i}. \quad (1)$$

Consumption at time t can also be expressed with real GDP growth $g_{i,t}$ by normalizing the initial consumption at 1:

$$C_{i,t} = \exp\left(\int_0^t g_{i,s} ds\right). \quad (2)$$

Assuming that in the absence of global warming, real GDP and consumption may grow at a constant rate $g_{i,0}$, and global warming will influence the growth rate with a simple linear relation estimated by Dell et al^[6]. T_t means the temperature increment at time t and γ_i is the marginal effect of temperature increment on GDP growth for country i .

$$g_{i,t} = g_{i,0} - \gamma_i T_t. \quad (3)$$

Given temperature increment T_H at horizon year H , temperature increment at time t , i.e. T_t follows the trajectory which has been proposed by Weitzman^[7] and applied by Pindyck^[8].

$$T_t = 2T_H \times [1 - (1/2)^{t/H}]. \quad (4)$$

For the uncertainty of T_H , probability method based on massive IAMs (Integrated Assessment Models) is introduced and applied by Pindyck^[8], which will also be adopted in our theoretical model. Three-parameter Gamma distribution is chosen to fit the uncertainty for its effectiveness with probability density function:

$$f_T(x; r_T, \lambda_T, \theta_T) = \frac{\lambda_T^{r_T}}{\Gamma(r_T)} (x - \theta_T)^{r_T-1} e^{-\lambda_T(x-\theta_T)}, x \geq \theta_T. \quad (5)$$

Owing to the uncertainty of γ_i , i.e. the marginal effect of temperature increment on GDP growth, probability method with Gamma distribution is suggested by Pindyck^[8] based on other researches¹.

2.2. Effects of CCI

Figure 1 shows the three effects of CCI on utility for each country. For the negative effect, increased CCI leads to less affordable percentage of consumption, which means the adjusted consumption $C^*_{i,t}$ is reduced by CCI where inv_i donates the percentage of CCI to GDP:

$$C^*_{i,t} = C_{i,t} \times (1 - inv_i). \quad (6)$$

¹ More information about the theoretical calculation process can be found in Pindyck's research^[8].

On the contrary, the positive effect refers to the promoting effect of CCI on initial GDP growth as it's carried out as extra investments in technology, construction and equipments consumption for adaption, all of which will boost the GDP growth with a marginal effect coefficient ξ_i :

$$g_{i,t}^* = g_{i,0} \times (1 + \xi_i \times inv_i) - \gamma_i T_t. \quad (7)$$

Furthermore, the public goods feature of global temperature increment leads to the spillover effect of CCI. Assume that global CCI and upper bound of temperature increment (UBTI) can be captured by Eq. (8) where w_i is the GDP related weighting factor, then the ultimate temperature increment T_{Up} determined by gross CCI may further influence each individual's utility.

$$T_{Up} = \Phi(inv_{world}) = \Phi(\sum_i w_i \times inv_i). \quad (8)$$

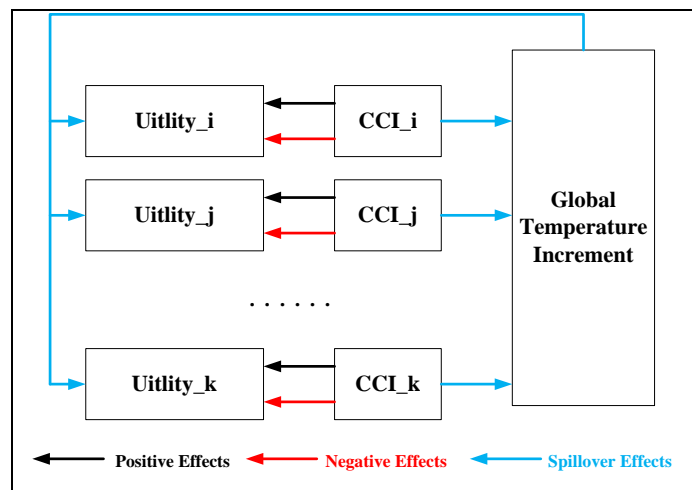


Fig. 1: Three effects of CCI on utility

2.3. Non-cooperative and cooperative dynamic game equilibriums

Taking all the three effects of CCI into consideration, the optimal negotiation strategy for each country under non-cooperative scenario can be resolved with the 'Backward Induction' method designed by Aumann [9]. To simplify the model and scenarios, two-country dynamic game equilibrium is designed with the fundamental hypothesis that each country is rational. For non-cooperative scenario, each country attempts to maximize its own net utility whatever others' dynamic strategies. And for cooperative scenario, the objective is adjusted to maximizing the gross utility of both countries. Table 1 shows the structure of theoretical results where $OptInv_i$ and $Utility_i$ represent the CCI percentage and net present utility for different scenarios respectively.

Table 1. Theoretical Results for Two-country Game Model

	Non-cooperative Scenario			Cooperative Scenario
	A moves firstly	B moves firstly	Simultaneously	
CCI of country A	$OptInv_A^{first}$	$OptInv_A^{second}$	$OptInv_A^{simul}$	$OptInv_A^{coop}$
CCI of country B	$OptInv_B^{second}$	$OptInv_B^{first}$	$OptInv_B^{simul}$	$OptInv_B^{coop}$
Country A's utility	$Utility_A^{first}$	$Utility_A^{second}$	$Utility_A^{simul}$	$Utility_A^{coop}$
Country B's utility	$Utility_B^{second}$	$Utility_B^{first}$	$Utility_B^{simul}$	$Utility_B^{coop}$

3. Simulation and sensitivity analyses

Table 2 gives the initial parameters for simulation which is based on two real countries.² With higher initial GDP growth, country A is faced with more severe risks of temperature increment on GDP than country B. According to the simulation results, the CCI of country A and B under non-cooperative dynamic game equilibriums are too tiny to reach the 2°C target globally,. In others words, dynamic game results reveals the essentiality of cooperation to deal with climate change effectively.

However, Figure 3 also reveals the lack of initiatives for countries to cooperate. Under cooperative scenario, country A should carry out more CCI for whole utility maximizing purpose. However, because of the three different effects, country A's utility under cooperative scenario is smaller than that under non-cooperative scenario without compensation. On the contrary, country B can benefit from cooperation owing to the improvement of global warming in spite of more CCI than that in non-cooperative ones. Hence, cooperation can hardly be self-driven without win-win outcome. In addition, the gross utility of country A and B benefit from cooperation, which means it's possible and feasible for the implementation of cooperation by involving compensation and benefit transfer mechanisms.

In order to make the conclusions more reliable, sensitivity analyses for different parameter assumptions are carried out. Table 3 shows that the main results of what we are concerned about are stable and reliable.

Table 2. Initial Parameters for Simulation

	Country A	Country B
g_0	4.5%	1.5%
w	13.26%	19.02%
$(r_\gamma, \lambda_\gamma, \theta_\gamma)$	(11.141, 22329, -2.8505e-4)	(103.8, 411600, -1.745e-4)
(η, δ, ξ, H)	(2, 0, 1, 100)	
$(r_\tau, \lambda_\tau, \theta_\tau)$	(3.8, 0.92, -1.13)	

Notes: The temperature parameters are in accord with Pindyck's^[8] and the individuals' are based on massive literatures.

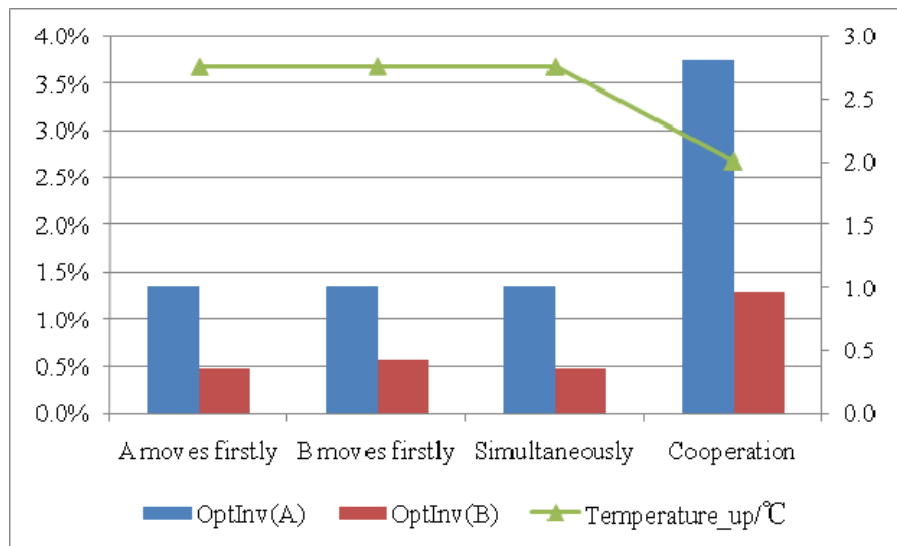


Fig. 2: CCI and temperature increment under different game scenarios

² In order to avoid potential political issues, we use anonymous names which can be offered under request if necessary.

Table 3. Sensitivity Analyses and Results

	Base Model	Higher g_0	Lower g_0	Larger η	Smaller η	More risky γ	Less risky γ	Larger δ
Q1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Q2	No	No	No	No	No	No	No	No
Q3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Q1: Is cooperation essential for 2°C target? Q2: Is it self-driven for cooperation? Q3: Is it possible and feasible for the implementation of cooperation?

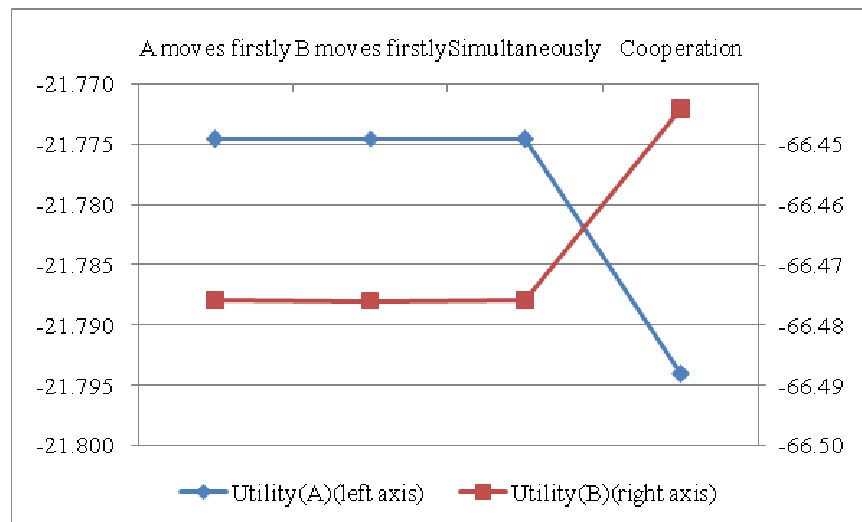


Fig. 3: Utility of country A and B under different game scenarios

4. Conclusions

By distinguishing the three different effects of CCI on utility, this article puts forward a dynamic game model simulating the strategies of different countries in climate change negotiations. Game equilibrium results together with sensitivity analyses support the three conclusions: firstly, it is essential for cooperation among countries to deal with global warming and to reach the 2⁰ target. Secondly, without effective compensations and benefit transfer mechanisms, cooperation can hardly be realized automatically. In other words, global climate negotiation should put enough attention to the institutional design to avoid the collapse of cooperation. Finally, our research also gives a good signal that there's still room for generalized Pareto improvement to carry out cooperation, which means all countries' utilities will be better than any situation under non-cooperative scenario if compensation and benefit transfer mechanisms are available and effective.

5. Acknowledgement

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Affiliate marketing in the context of online marketing

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Abstract. *This paper deals with affiliate marketing, in which the seller or service provider is a financially rewarding agent so-called affiliate for each visitor, which through its website to attract a dealer there, who made some activity, either directly purchase products, register to subscribe to a newsletter, or just browsing the site. In this paper, the author tries to define affiliate marketing, the individual entities of affiliate marketing such as merchant, affiliate, network owner, affiliate network, briefly describe the history of affiliate marketing and illustrate its use for example a social network Pinterest.*

Keywords: affiliate marketing, merchant, affiliate, network owner, affiliate network, referral link, affiliate lists, post affiliate pro, Pinterest.

JEL codes: M13, M31.

1. Introduction

In today's marketing we are recording condensed advertising information flow. Advertisement recipient perceives from all sides. Marketing communication follows the trend of the closest contact with the recipients. This is doubly true in online marketing. With social networks people provide the most personal information that today's technology can process in their favor. It is still, however, communication between the company and customers. Affiliate marketing is basically transmitting personal selling to online environment. Globally it can be considered a type of marketing that was already in the nineties, but in its essence it brings something that nowadays has become a trend again. To the relation of the company - customer it brings another man who has nothing to do with the company, and therefore the recipient considers him a better reference to classic advertising.

2. History and definition of affiliate marketing

Affiliate marketing combines the value of personal sales and technology solutions offered by online marketing. To companies with lower budget it provides an opportunity to increase profits and raise awareness of its brand.

Affiliate marketing can be described as one of the online distribution tools, thus one of the four elements of the marketing mix. Many authors label it as commission affiliate marketing of sales, which

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is not accurate, because the commission in affiliate marketing do not arise from the mere sale. Affiliate marketing itself must be seen as one of the most effective ways of distributing and selling the product in the online environment.

History of affiliate marketing goes back to 1994 when the company CD Now launched its commission program. Company CD Now has been offering to various websites that are dedicated to writing reviews of music albums, possibility of selling a particular album. In practice, it worked out so that the visitor can read reviews on the music server and underneath the review, there was a hyperlink to redirect if interested visitors to a company website CD Now. If the purchase is made, a certain commission appertained to the server on which the visitor read the review.

In 1996, a program Amazon Associates Program was developed, which is now one of the largest affiliate programs in the world.

3. Entities in affiliate marketing

Many affiliate marketing experts claim that this type of affiliate marketing works on the relationship between two entities, namely:

1. Merchant = merchant, sponsor, who created the affiliate program.
2. The actual affiliate = intermediary, the person who accepts the conditions of the affiliate program and promotes the product on the internet.

With the growing popularity and effectiveness of affiliate marketing to the said two entities joined the third - the owner of the affiliate network (network owner). This entity monetizes its position in this relationship by providing space to create affiliate programs for merchants. In the hierarchy of these entities it is going to the highest point.

For the proper understanding of the financial flow of commissions it is necessary to explain theoretically and define the individual entities.

- **Affiliate Network** is a web server on which take place and run affiliate programs that are generated by merchants (traders). Affiliate Network brings together not only merchants but affiliates themselves as well. The value of affiliate network is expressed by the number of active affiliate programs and the number of available affiliates. Some networks require a fee for access to the network. Other work on the principle of sales commission. Apart from the space for creation program they offer affiliate know-how as well. Networks are able to develop a detailed analysis of the target audience, how to communicate or make judgment on the affinity of the product for affiliate marketing.
- **Merchant** is a trader who enters into affiliate networks in order to increase profits and expand its product among Internet users at relatively low cost. The merchant therefore offers its products through an affiliate program. He creates the conditions under which the affiliate receives a commission claim. Affiliate must then perform some type of action. This is usually about the sale, but there are programs that have a commission for registration, for filling in the form and so on.
- **Affiliate** (mediator) is a person who can register to a particular affiliate program and promote the product in the online environment. The forms of promotion are diverse, but it consists mostly of banners and simple text ads. Every registered affiliate acquires its special link - referral link, which becomes the identification in the system, with which the system can detect and record activity of affiliate.

To record visits except referral line also serves cookies. A cookie is a file stored on your hard disk created by the browser, that contains a list of all cookies from all Web sites. This information is important when setting cookies in the affiliate program. In the context of affiliate marketing the cookies allows the system to remember, from which referral line customer came to the page with the product and when.



Figure 1: Affiliate entities and commission flow

4. Affiliate network

If the company wants to sell its product through affiliate marketing, it is necessary to choose the correct network. There are many affiliate networks, but not all are suitable for it. Some networks focus on all countries, while others deal only with some. Some networks operate on the principle of an entry fee and then provide their services. In others, on the contrary there is no entry fee. Such networks can have determined in their terms the amount of commission from each event that has been done. The current trend is that the network does not accept any candidate. First, they invite the applicant to contact them and describe their product. After considering the affiliate network will eventually decide to accept or not accept the company. This step is a very good choice, because in recent years the affiliate program involved companies that offered fraudulent services or even harmful products.

Under the affiliate network, even if only marginally includes lists of so-called affiliate programs - affiliate lists. Most are lists of free affiliate programs where they can add anyone who has an active affiliate program. The disadvantage, however, is often out of date and for the potential affiliate, lists are a mix of active and inactive networks.

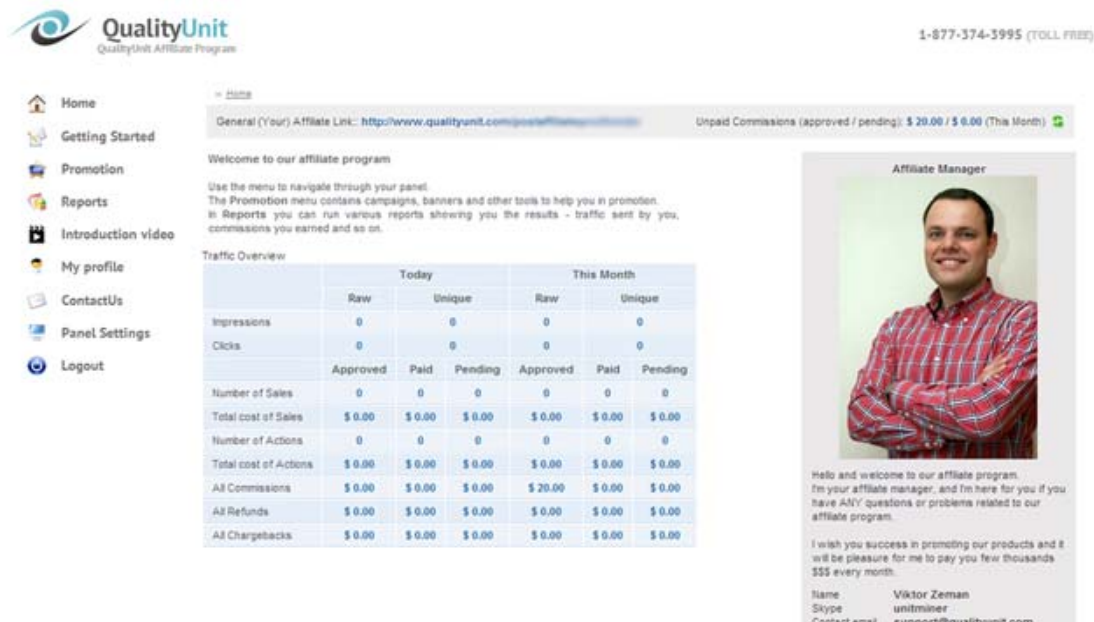


Figure 2: User Interface Post Affiliate Pro - merchant panel

There are plenty of quality assessment networks. The following are among the top rated networks for 2012:

1. LinkShare
2. Commission Junction
3. ShareASale
4. Amazon
5. oneNetworkDirect
6. ClickBank
7. AvantLink
8. Google Affiliate Network
9. Affiliate Window
10. RevenueWire
11. eBay Partner Network
12. Pepperjam
13. AdCommunal/AdCanadian
14. LinkConnector
15. TradeDoubler
16. zanox
17. PeerFly
18. Millionaire Network
19. Affiliate Future
20. AffiliateNetwork.com

5. Innovative use of affiliate marketing

The promotion process of each product is individual and each affiliate chooses it himself. A good example of the use of affiliate marketing is a social networking site, Pinterest. Pinterest is a social

network that works on the principle of the so-called boards. Each user of this social network has the ability to add pictures to the wall, which are related to his interests. The interests may be different, from interior design, via photos of nature to clothes. Each user can create his/her own profile just by these pictures. Pinterest is built on affiliate marketing. Every picture that is on this social network, is hyperlinked to the Eshop for example. So if the user will add to the wall image of shoes, after clicking the image it will redirect him to the site shop, where he can find the shoes. If you buy them, so the network itself automatically receives a commission on the sale. Innovative use of affiliate marketing can be at the social network Pinterest noticed the way that a given social network essentially acts as a tweaked affiliate network to which merchants add their product in the form of images. The user of this social network becomes part in two tasks simultaneously:

1. First, as the recipient, which is exposed to a non-standard form of advertising.
2. Second, as a customer, which is directed from the network to buy the product.

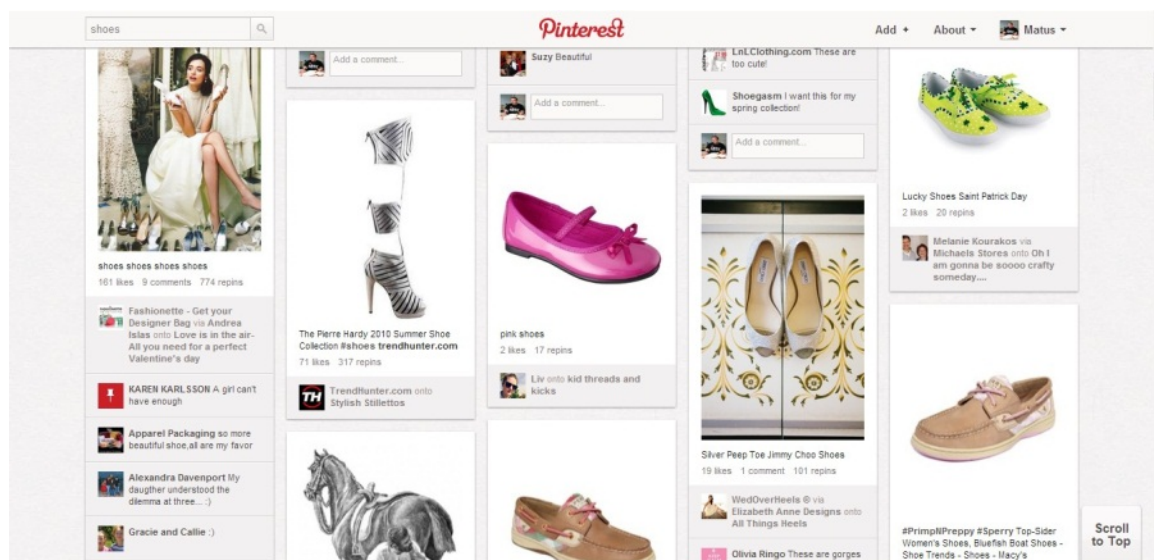


Figure 3: Social Network Pinterest

6. Conclusion

Affiliate marketing offers many companies a relatively inexpensive option to start marketing communications in an online environment. Through the affiliate program and affiliates themselves, the company can reach people and markets that would normally not reach with using conventional communication tactics at all or would have to make high finance. The added value of the affiliate marketing business is just an input of an objective person who has no relationship with that company, thus is becoming for a potential customer more objective reference. Since it is an affiliate marketing, financing costs are easy because a commission will be granted only after certain scheduled events will have been done. For global thinking companies affiliate marketing should become the most important communication and sales channel.

7. Acknowledgements

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Quality in schools

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Abstract. *Ballast on public and private finance connected with fast growth of academic education increases interest in assurance of quality and standards of academic education. A school needs to show that quality of its curricula and academic degrees is of importance and that it is willing to implement means to assure and demonstrate this quality. Current theoretical outcomes of the study are devoted to the definition of the content of quality under the conditions of a college. In the results of the paper and in the discussion we interpret the project of FMK UCM in Trnava focused on creation of a cyclically directed system of evaluation, whose result will be concrete measures for increasing quality of academic education in the curriculum of marketing communication.*

Keywords: quality, measuring quality at a College, project, FMK UCM v Trnave.

JEL Codes: M31, I 21.

1. Introduction

The term “quality” “ is often used in various contexts and meanings, therefore it is necessary first of all to define its content in the conditions of a school. Quality of the system is a feature of the object with a given structure to reach at given conditions optimal meeting of the requirements, resulting from satisfying needs of the involved partners. Quality of the system at accomplishing desired targets may be ensured only by quality of its components and their mutual relationships, thus quality of the structure of the system and quality of its management. Quality of a school is the optimal functioning of the processes at schools, mainly the process of education, with which partners of the school are satisfied, which is objectively measured and evaluated [6].

Management of quality in schools as coordinated activities focused on quality management, on permanent improvement, is related to the following:

- Educational system in the state – its targets, philosophy, content, structure of the system, principles of management, funding and its other characteristics.
- School (educational institution) – each school should elaborate its own system of quality management, which would be related to all processes in the school and all school employees. For the

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processes, with which the school maintains and develops quality, we use the term „quality management of school“ (assurance of school quality).

- Process of education – as the most important of all the processes in the school, whose quality is decisive for the quality of the schools. If the quality management of school has not been realized yet, the quality of education of the subject may also be improved by an individual teacher (or group of teachers).
- Self-management of studying by each learner – as the culmination of the efforts to reach quality in school. The result should be the student, who takes responsibility for the management of their studying and self-development, they acquire own studying competences, they know their preferred studying style, meta cognition and meta studying; they implement an in-depth approach to the studying, self-motivation for life-long studying.

Thus, the quality in school is related to the quality in the system of:

- The school (as educational institution), quality manager is the headmaster;
- The education (as the most important process in the school), quality manager is the teacher;
- Self-studying of the learner (self-development of their personalities, as the culmination of the impact of the school and teachers on the students), quality manager is the student.

Quality of the school is the rate of:

- Satisfaction of the partners, who are the students, teachers, council of the school, other personnel of the school, parents, founder, future employers, pedagogical institutions, school inspection, public and state authorities, sponsors, foundations, cooperating organizations.
- Ability to create values. If the school curriculum is in harmony with the targets, there comes to full development of the personality of the student.
- Usefulness. If the curriculum of the school is meaningful, usable in practice for the employment, or further study.
- Perfection. If the school programme is appropriate to the possibilities of the pupils, „tailored“.

The accomplishment of the above-mentioned criteria requires from the school to continuously follow its own ways of reaching the set, optimized targets and to try to best meet the needs and expectations of their pupils, to strive to improve their results. [1].

2. Measuring quality at a college

In the Berlin Communiqué of the 11th September 2003, ministers of signatory states of the Bologna Declaration called the European net to assure quality in academic education, to create the conventional set of standards, procedures and guidelines to assure quality by means of its members and to seek for the ways to assure the system of mutual evaluation for the agencies for quality assurance and/or accreditation agencies or authorities. The result is the report Standards and guidelines for quality assurance in European environment of academic education. [7]. In the sense of requirements involved in the report, the Faculty of Mass Media Communication University of SS. Cyril and Methodius in Trnava (FMK UCM) performs the project for internal quality assurance of academic institutions.

By carrying out the project Implementation of innovative models of evaluation, monitoring and quality assurance under the conditions of FMK UCM in Trnava, FMK UCM in Trnava will prepare the place for direct measuring of quality of the curriculum of marketing communication on the basis of pre-set criteria and

implementation of measures to increase the quality of the curriculum. The project is focused on creation and implementation of the complex system of direct quality measurement of academic education in the curriculum of marketing communication, whose outcome will be increased in the quality of education. On the basis of requirements resulting from the intentions of the University of SS. Cyril and Methodius in Trnava, it is necessary to create a system which will generate a system of evaluation on the internal, as well as external level. The model of system of evaluation is based on requirements resulting from the strategic document *Standards and guidelines for quality assurance in the European environment of academic education*, elaborated by ENQA in cooperation with EUA, ESIB and EURASHE (approved by ministers of education of signatory states of Bologna Declaration, Bergen 2005). In the sense of requirements, the project reflects European standards and guidelines for internal assurance of quality at universities [5].

FMK UCM in Trnava carries out the project on the basis of submitted financial contribution from the Operational Programme Education from the sources of European Union.

3. Aims of the project

The strategic aim of the project Implementation of innovative models of evaluation, monitoring and quality assurance under the conditions of FMK UCM in Trnava is to support the increase in the quality of education with the aim of adaptation to topical perspective needs of knowledge-based economy. A specific aim of the project is to adjust academic education to the needs of knowledge-based economy. The strategic target of the project will be accomplished by:

- Implementing the system of direct quality measuring in the curriculum of marketing communication.
- Implementing the complex set of measures to increase the quality of education in the curriculum of marketing communication.
- Eliminating information inequality in the relationship university – public.
- Creating cyclic rating system of quality while using external evaluation tools.

The main principles of the project are as follows:

- Universities should have at their disposal strategies and procedures for quality assurance and standard of their curricula and award of the academic degrees.
- Principles and procedures of quality assurance should have a form of official documents and strategies (publicly available, covering co-participation of students and external authorities).
- Universities should have formal mechanisms for approvals, regular revisions and controls of the curricula.
- Students should be evaluated on the basis on pre- set and publicly available criteria, regulations and procedures.
- Decision-making within a university should be based on explicit and previous public-made criteria.
- Universities should regularly publish topical, impersonal and unbiased information about the curricula, their graduates and quality standards.

The principles of quality assurance of the project:

- Explicit formulation of expected outcomes from the process of studying.
- Focusing on composition, structure and content of the curricula.
- Emphasis on new forms and methods of teaching.
- Following the progress of the students and their study outcomes.
- Regular evaluation of the curricula (including also external evaluators).
- Regularly obtained feedback from employers and the work market [2].

4. Target groups

The direct target group are students in the full time and distance forms of the curriculum of marketing communication and PhD students in the full time and distance forms of the curriculum of marketing communication.

TABLE I. Target groups. Source: own processing. [3]

Followed criteria	Bachelor, Master level of the study	PhD. level of the study
Size of target group	1360 students	48 PhD students
Age structure	18-26 years	23-31 years
Geographic position (level of districts of the mentioned regions)	Regions of Trnava, Nitra, Banská Bystrica and Žilina	Regions of Trnava, Nitra, Banská Bystrica and Žilina
Education	secondary, bachelor	Graduate of academic education, II. level
Gender	female: 75%, male: 25 %.	female: 60%, male: 40 %.
ethnicity	Slovak nationality, Hungarian nationality, others	Slovak nationality, Hungarian nationality,
socio-economic status	University students	PhD students

5. Project activities

The project is based on four fundamental activities:

- Proposal and verification of the direct measuring system of the quality of academic education in the curriculum of marketing communication. The activity was carried out from January 2012 to December 2012.
- Proposal and verification of measures for increasing the quality of academic education in the curriculum of marketing communication. The activity has been carried out from October 2012 to December 2013.
- Proposal and verification of measures for elimination of information inequalities in the relationship between university and the public regarding academic education in the study of marketing communication. The activity has been carried out from January 2013 to December 2013.
- Proposal and verification of evaluation of the results of measures for increasing the quality of academic education in the curriculum of marketing communication based on the system of direct measurement of the quality of academic education in the study of marketing communication. The activity has been carried out from January 2013 to December 2013 [3].

5.1 Proposal and verification of the system of direct quality measuring of the academic education in the curriculum of marketing communication

The aim of the first activity was to create and to verify a complex system of direct quality measuring of the academic education in the curriculum of marketing communication, while using external evaluation tools and innovative software solution, which would contribute to the increase of quality of educational process at FMK UCM in Trnava.

In the introduction phase of the activity realization, a complex analysis of the curriculum was carried out, which became the background for follow-up development of a conception of system of direct quality measurement of education in the curriculum. The conception will serve for developing a complex model of the system for direct quality measurement. Consequently, the model will be elaborated into electronic informational system, to which a user guideline will be created. Next, training will be carried out for the evaluators, who will be involved into the system. After the training, the evaluation system will be verified within the cycle of evaluation of the curriculum of marketing communication.

The first activity demanded following:

- Analysis of the current state and needs of education under the conditions of the curriculum of marketing communication.
- Elaboration of the conception and creation of the model of the system of direct quality measurement of education in the curriculum, system of evaluation of the results and comparison of level of notions, skills and key competences of students and graduates of the curriculum of marketing communication.
- Development of software solution for internal and external systems of evaluation, elaboration of user guideline and methodical procedures.
- Training of lecturers and evaluators to the system of direct quality measurement of academic education in the curriculum of marketing communication.
- Elaboration of assessment reports of the curriculum, subject of assessment reports, assessment reports on the outputs from the lecturing in the curriculum of marketing communication.

Feedback was ensured directly by setting the system for quality measurement and its pilot verification for the curriculum of marketing communication. Feedback is the main tool for obtaining the desired information for the system of evaluation. A multi-level external-internal system for obtaining feedback from all relevant participants was developed and by: inputs and outputs of IS, statistic information, assessment reports.

The outputs of the first activity are as follows:

- Analysis of the curriculum of marketing communication.
- Development and model of the system of direct quality measurement.
- Informational system for direct quality measuring.
- User guideline.
- Training of evaluators.
- Cycle of evaluation of the curriculum [2].

5.2 Proposal and verification of measures for increasing the quality of academic education in the curriculum of marketing communication

The aim of the second activity is development and verification of a complex proposal of measures for increasing the quality of academic education in the curriculum of marketing communication while using the transfer know-how from external environment. One of the important parts will be a co-working centre, which will become a renowned platform for the transfer of the needs of the practice with the university.

In the introduction phase of the performance of the activity a complex proposal of measures for increasing the quality of education in the curriculum will be elaborated, which will be consequently implemented into the study programme, what will cause their verification. A platform of the co-working centre will be created, for intense exchanges and discussions, which will lead to further outputs to increase the quality of education. After establishing the proposal of measures, these will be integrated into the programme marketing communication on the level of subjects (elaboration of adjusted methods of teaching, syllabuses, outputs from the lecturing, pilot verification). Consequently, training for the PhD students at FMK UCM in Trnava will take place, as one of the main participants of the future increase of the quality of

the study programmes, whereas a direct interconnection of current outcomes and outputs into the future work of lectures will be ensured.

The second activity will require following activities:

- Elaboration of a complex proposal of measures to increase the quality of academic education in the curriculum of marketing communication. On the basis of the established system of direct quality measurement of academic education in the study programme and its practical verification – implementation, outputs out of this system will be provided, which will lead to proposals of measures to increase the quality of academic education in the curriculum of marketing communication. The proposal of measures will be based on recommendations of internal employees within the first phase of evaluation, as well as from recommendations of external evaluators within the second phase of evaluation.
- Establishing the co-working centre. Co-working is an innovative trend developing in the academic as well as entrepreneurial environments, especially in Western Europe and North America. It is a centre, where on the one spot independent people from external environment are concentrated (for example graphic designers, marketers, copywriters, experts on internet marketing, on production of web sites, visual communication etc.). There is necessary technical equipment and creative background at hand. In the academic environment, it is a kind of creative „business incubator“. Within it, the students can develop their abilities, skills and competences by means of practical activity focused on real business doing. Students working in the co-working centre will be able to lay the basis of their future business and to verify their entrepreneurial ideas and concepts in practice. A valuable asset is also the relationship with real entrepreneurial environment, obtaining new contacts and transfer of requirements directly into the conception of the study programme. By means of the centre, it will be possible to directly measure acquired notions of the students in the surrounding of the incubator (very similar to real experience out of practice). Simultaneously, in this way important data for the feedback and verification of the system of quality evaluation and proposals of measures for increasing quality will be provided.
- Integration of the measures for the increase of quality of the educational programme marketing communication, elaboration of adjusted teaching methods, syllabuses, outputs from the study, pilot verification. Internal experts – on the basis of outputs of the evaluation system and conclusions of the work groups – will incorporate them into the curricula (at the level of subjects) individual requirements and proposals, whereas there will come to adjustments of individual attributes of the study programme. This will lead to the increase in quality of the study programme, which will be repeatedly cyclically verified within the system of direct measurement of the quality of the study programme. Consequently, there will be all elaborated materials and created documents assessed in the work groups and objected by external experts.
- Development of key competences and generic skills of the graduated from the study programme marketing communication. Trainings are designed for internal and external PhD students at FMK UCM in Trnava – in the size of 40 people. Trainings will be focused on development of the following skills:
 - Research and analytic skills (qualitative and quantitative methods of research, work with statistic software designed to process sociological data, work with informational sources etc.).
 - System of direct quality measurement of the study programmes and evaluation of the study programmes [2].

Outcomes of the second activity are, or may be until the end of 2013, as follows:

- Training of PhD students. The training took place in February 2013, in the following terms: February 4th – 8th 2013, and February 11th – 15th, 2013.
- Co-working centre. Students at FMK UCM in Trnava had the opportunity, in the term until February 24th 2013, to apply for the co-working centre PoinTT. FMK UCM in Trnava – by means of this project – offers a chance for 15 of them. It required only writing a cover letter, in which the students described, why they wanted to become a member of PoinTT and what they expected from the

membership. In case a student has already had any idea or started a project, it is necessary to describe, where they would like to move by using PoinTT. Within its activities, it organizes for its members lectures of Slovak start-up-ists, workshops focused on business and mentoring from successful Slovak entrepreneurs.

- A complex proposal of measures for the increase of the quality in education in the study programme.
- Adjusted curriculum of marketing communication – on the basis of proposals [8].

5.3 Proposal and verification of measures to eliminate information inequalities in the relationship university – public regarding academic education in the curriculum of marketing communication

The aim of the third activity is to eliminate information inequalities in the relationship between the university and the public regarding academic education in the curriculum of marketing communication.

In the introduction phase of the achievement of the activity, materials will be provided for an informational campaign in the environment of secondary schools. Materials will be elaborated by internal experts working at FMK UCM in Trnava, an on-line game for students will be created and an informational campaign will be launched, which will be provided by internal experts working at FMK UCM in Trnava. Simultaneously, a complex proposal of measures for decreasing information inequalities will be outlined. Consequently, an informational Internet portal will be developed about the study programme with digital content. There will also be outlined a set of presentations under interactive form about the study programme. Internal specialists will ensure active e-informing, an e-library will be created. After implementation of the informational tools, an analysis will be worked out, a research, which will be carried out by internal experts working at FMK, where the impact of measures on elimination of information inequalities in the relationship between university and the public will be analysed, regarding academic education in the study programme marketing communication.

The second activity will require the following activities:

- Informational campaign in the secondary schools environment with the focus on the explanation of advantages, requirements and character of the study of marketing communication at FMK UCM in Trnava and training of career advisors. Informational campaign will include the following components:
 - Preparation, elaboration and distribution of informational brochures for students.
 - Creation of promotional ON-line game focused on development of creative activities in the field of marketing communication.
 - Contest for the students of secondary schools focused on, for example production of posters, photographs, websites, arrangement and promotion of school events, etc.
 - Informational campaign in the environment of social networks (Facebook, Twitter...).
 - Outlining proposal of measures for elimination of information inequalities. The activity will be provided by internal experts, who on the basis of the analysis will work out a complex proposal containing measures for the elimination of information inequalities in the relationship between the university and the public within the study programme marketing communication.
 - Creating informational Internet portal on the study programme with digital content – a set of presentations under interactive form and active e-informing, e-library.
 - Verification of measures, research of targeting of informational tools.

After informational campaign there will be worked out an analysis – internal research of FMK UCM in Trnava, where there will be elaborated the analysis of the impact and targeting of used informational tools. Simultaneously, there will be worked out a proposal of further informational tools.

The outputs of the second activity are, or until the end of 2013, will be as follows:

- Promotional materials to promote the study programme.
- Informational campaign.

-
- Proposal containing measures for elimination of information inequalities.
 - Web portal with digital content.
 - Analysis of targeting of informational tools [2].

5.4 Proposal and verification of evaluation of results of measures for increasing the quality in academic education in the curriculum of marketing communication based on the system of direct quality measurement in academic education in the marketing communication study programme

The aim of the last activity is a proposal and verification of evaluation of the results of measures for increasing quality in academic education based on the system of direct quality measurement in academic education in the marketing communication study programme.

A system of cyclic evaluation and elaboration and integration of measurements for increase of quality will be developed, which will be provided by internal experts of UCM. Consequently, the whole system will be analysed and a complex analysis will be created (by external experts), who will also work out proposals for system improvement. The last activity will require the following activities:

- Creating cyclic system of measurements and feedback. After complex implementation of the system of direct quality measurement of academic education in the study programme and implementation of the system of periodical measurements to increase the quality of academic education in the study programme functionality of the implemented cyclic system will be verified on the basis of cyclic system and feedback. A conception of cyclic evaluation of the study programmes and integration of measures to increase quality in the study programmes will be created, which will be consequently implemented.
- Elaboration of a complex analysis, whose output will be the evaluation of the implemented systems and their benefit. A complex analysis will be worked out, whose output will be the evaluation of implemented systems and their benefit. Analysis will be provided by external experts, who will at the same time prepare proposals for improvement of the system and its functionality on the basis of recommendations of created work group. These proposals will consequently be incorporated and the system will be developed and subsequently extended for other study programmes at the university.

Outputs of the second activity are, or until the end of the year 2013 will be as follows:

- Conception of cyclic evaluation of the study programmes and integration of measures to increase quality in the study programmes
- Complex analysis of implemented systems and their benefit [2].

6. Conclusion

The term 'quality' is often used in different contexts and meanings. At schools, the quality relates to the quality of the school, the teaching and the self-studying of students. Accomplishing criteria of quality requires from the school to permanently follow its own ways of reaching the set, optimized targets and to try improving its results. The efforts to implement the system of direct quality measuring at FMK UCM in Trnava for the curriculum of marketing communication is supported by the sources of the European Union, the Education operational programme. In case of the success of the project, FMK UCM in Trnava intends to spread the system of quality measurement into other curricula and later on into the whole university.

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Industrial dynamics in Bulgaria – the connection between past and future: The Case of Food and Beverage Industry

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Abstract. *Defining the industrial dynamics the important prerequisites that support achievement of a sustainable industrial and economic growth need to be identified. The industrial dynamics could be used as an instrument to analyze future economic behavior. In this paper we step on the basis of existing state of the art. In Section 1 the methodology is presented: designed and used industrial dynamics function and its components. Section 2 focuses on one of the traditional industrial sectors in Bulgaria - Food and beverage production, its state and key characteristics. In Section 3 the implementation of the industrial dynamics function to forecast the future development of the Food and Beverage production sector in Bulgaria is illustrated. On the basis of dataset perspectives for future development of food and beverage development in Bulgaria are analyzed and recommendations for concrete measures are provided.*

Keywords: industrial dynamic, food and beverage, dynamic analysis, perspective analysis.

JEL codes: C15, L66, O47.

1. State of the art

There are many theoretical studies that define the industrial dynamics. As we stated (Kopeva, Blagoev and Sterev 2010a, 2010b, 2011a, 2011b and 2011c) we accept the Forrester (1961) definition stating that industrial dynamics is a result of the increasing ability to enforce the industry evolution for long-term periods (Forrester, 1988 and 1999).

In addition, the analyses of the industrial dynamics changes are pointed to the main forces and their directions of changes that lead to the market evolution (Mattig, 2009). But we need to set that the industrial dynamics does not just describe and analyze the current industrial structure, but analyzes these market-driven factors that can change economic structures over time (e.g. Krafft, 2006; Dietrich, 2006).

So, industrial dynamics is a result of the interaction between forces of demand and supply and the pricing signals that they generate. Therefore industrial dynamics is based on two basic functions:

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(1) the production function as a result of change of all of the receivable accounts such as: capital, delays, inventories, etc., and

(2) the turnover function as a result of change of all of the competition accounts such as: consumption, deliveries, expenses, production, etc.

Both functions form cause-and-effect loops that show how economy has been developing over time. According to these statements, we can define a basic methodological scheme (mathematical model) for evaluating and analyzing industrial dynamics (Id): (Equation 1).

Equation 1.

$I_d = f(P, T_o) = a_1 \cdot \frac{P}{T_o} + a_0 + \varepsilon$, where: I_d – industrial dynamic; P – production function; T_o – sale's function; a_1 – function parameter (express the degree of influence of variables P and T_o on function result I_d); a_0 – free article (express the influence unreported factors in the model); ε – random variable (express the influence of changing production and sale conditions over time)

The knowledge of industrial dynamics could be used for the analysis of change at the national as well as at industry level. Therefore, the analysis of industrial dynamics turns back how the national resources are used in comparison with other nations or industry sectors.

To demonstrate how to use the tools of industrial dynamics we use data from one of the Bulgarian traditional industry sectors as the production of food and beverages.

2. Food and beverage development – Bulgarian case

To analyze the state of the food and beverage production in Bulgaria we need to set some basic points of view as follows:

- Period 1939 – 1944 – It's characterized by the free market conditions. The national economy development is under the World War II conditions;
- Period 1944 – 1989 – It's characterized by the central planning economic conditions. But Bulgaria is specialized in food production and exported food for the former Union of Mutual Economic Assistance and respectively for the CEE countries;
- Period 1989 – 2009 – It's characterized by restoring the free market conditions. Bulgaria became a EU member in 2007. But the overall economy conditions have been changing since 2008-2009 when the economic and financial crisis started.

The analysis is done at constant prices (prices in 1952) to prevent the influence of the money value change during the whole period. The main results are given by Fig. 1 and Fig. 2.

Some basic conclusion could be drawn as follows:

- The food production and turnover are changing and it's easy to find some basic periods.
- The food production is growing function for a long-term period but there are some changes in point of the production dynamics as well as the development direction.
- The picture shows that the food production development has started a new life cycle from 2009.

The picture helps to find the following basic conclusions (Fig. 1):

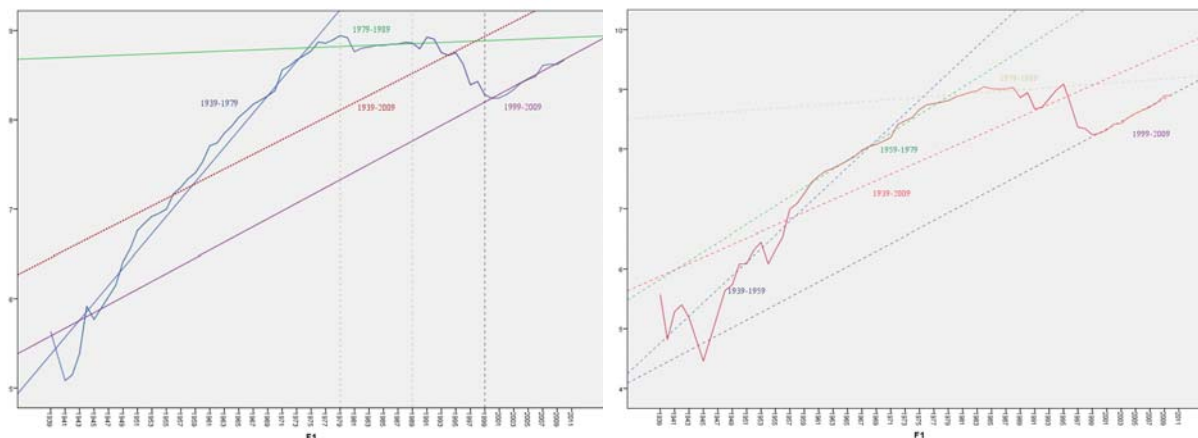


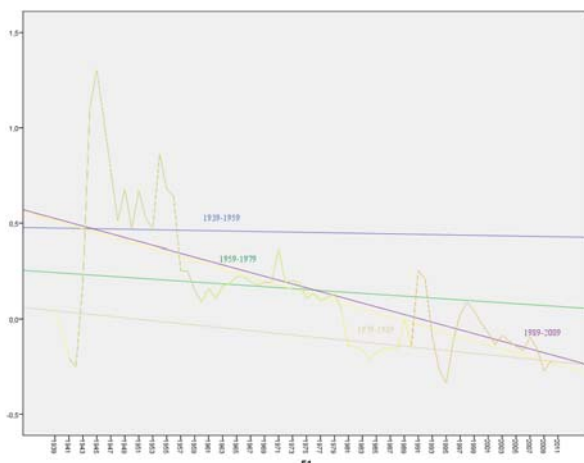
Fig. 1. Food and beverage production (left) and turnover (right) for 1939-2010

Three periods of food production development could be found as follows:

- Production growth – food production and turnover sustainably had been grown since the beginning of the 1970s. This is as a result of enlargement of food needs as well as the process of industrialization of the Bulgarian economy. We find a production and technological changes as the product restructuring of the food production.
- Production stagnation – the growth had been slowed down its development pace for the 1970s and 1980s. This is a result of the saturation of food needs as well as lack of food production changes.
- Production level change – the food production changed its level as a result of the economic and political changes in the beginning of the 1990s. After that we find out technological changes of food production that reflected on production growth for the first decade of 21st century. The free food market at EU level after 2000 has enlarged food exports as well as food imports.

The current pace of the production is comparable to the rate of change for the entire period. But the food production and turnover is at lower growth position compared to the previous (1939-1989) growth.

The current level of food production is estimated as the production level at the beginning of 1970s. The food sales are estimated as the sells level at the beginning of 1980s.



But **How has the dynamics of food industry been changed?** The picture (Fig. 2) shows that the industrial dynamics of food industry has been changing negatively:

- There is a steady decrease of the ratio of food production and turnover. This situation is characterized by relatively high loss of competitive advantage for a long-term period.
- There is a confirmation of the identified three periods of development of production and sales of food and beverages

Fig. 2. Industry dynamics of food and beverage production for 1939-2010

This knowledge could help us to do a forecast of food and beverage production and sales development for the next 30 years, respectively for the years 2011-2045.

3. Perspective analysis of food and beverage development

On the basis of the perspective analysis we do two different forecasts:

- Pessimistic forecast is grounded on the perception that the economic cycle has two main stages – economic growth and economic recession. Therefore, the pessimistic forecast includes two periods with one and the same duration as follows: 10 years economic growth and 10 years economic turn-down.
- Optimistic forecast is based on the anticipation that the economic recession periods are shorter than the economic growth ones. So, the real economic development is achieved by 7 years economic recession vice versa 13 years economic upgrowth.

The forecast construction is made by analysis of the previous economic development as follows:

- The forecast is done by usage of natural logarithm function (Equation 2) (see Cramer J, 2003.)

Equation 2.

$$\log(t/Y) = \frac{\log Y}{1 - Y}, \text{ where } Y \text{ is the estimated function;}$$

- The food and beverage development is found on the industry production and industry turnover for 1939-2010. The analysis excludes the period for 1939-1989 as a period of central planning economy system in Bulgaria. Therefore, the forecast anticipates economic recession period (1989-1999) as well as the economic growth period (1999-2009). So, it's obvious that the new downgrowth period started in 2009.
- Six stages process is used for the recent forecast as follows (Fig. 3):

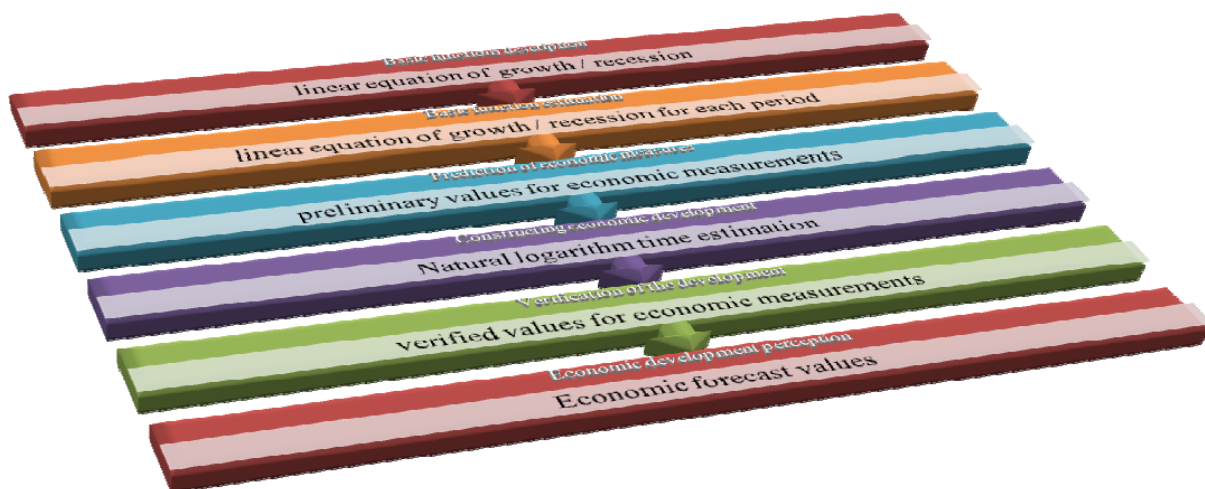


Fig. 3. Forecast process's stages and basic results at each stage

a. Basic function description – The equation of the growth is returned at this stage. We use a linear function equation (Equation 3) as the economic change has just one way direction.
Equation 3.

$Y = a \cdot X + b$, where Y is the estimated function; X is the number of the year at growth / recession; a, b are the function parameters.

- b.** Basic function estimation – The forecast needs to construct growth / recession function for each period. The value of the parameter b gives the value of the economic measurements just before the estimated period, and the ratio b/a gives the rate of measurements' changes.
- c.** Prediction of economic measurements – The preliminary value of economic function is turned back at this stage.
- d.** Constructing economic development – natural log values for each economic measurement are calculated. These values give the basic economic development picture.
- e.** Verification of the development functions – The time fit estimation is done at this stage. We confirmed the development function if the time fit is one and the same for each growth / recession period. If this condition is not fulfilled the stages from c. to e. are repeated.
- f.** Economic development perception – finally, the values of the economic function are set up. So, the forecast is finally done.

4. Food and beverage dynamics forecast

Food and beverage dynamics change in Bulgaria is done by doing all stages at Figure 4. The database is from the Bulgarian National Statistical Office (<http://www.nsi.bg>).

Some basic preconditions are set as follows:

- Two basic economic functions are studied:
 - a.** Production function of food and beverages
 - b.** Turnover function of food and beverages.
- The basic scenarios are perceived:
 - a.** Pessimistic one – economic turndowns periods between 2009-2019 and 2029-2039 as well as the economic growth periods between 2019-2029 and 2039-2045.
 - b.** Optimistic one – economic turndowns periods between 2009-2016 and 2029-2036 as well as the economic growth periods between 2016-2029 and 2036-2045
 - c.** Expected scenario – it is set as 35 % probability of optimistic scenario and 65 % probability of pessimistic scenario.
- We use all of the economic measures at basic value. The basic year is 1952 for the production function as well as the turnover function.
- The process at Figure 4 is fulfilled just for illustration.
 - a.** Basic function description – the function estimation is done for the food production function (Fig. 4.)



Fig. 4. Basic production function for recession period 1989-1999 (left) and perspective period 1999-2009 (right)

b. Basic function estimation – the construction of the production function in Fig.4 has turned back the production time-fit as follows (Equation 4. And Equation 5):

Equation 4. Recession period (1989-1999) $Y = -325.X + 7988$

Equation 5. Growth period (1999-2009) $Y = 200.X + 3355$

c. Prediction of economic measurements – for example the preliminary value of production function of food and beverage is given at Table 1. The preliminary functions for pessimistic forecast are set as follows (Equation 6. to Equation 9)

Equation 6. Recession period (2009-2019) $Y = -233.X + 5630$

Equation 7. Growth period (2019-2029) $Y = 165.X + 5595$

Equation 8. Recession period (2029-2039) $Y = -180.X + 5570$

Equation 9. Growth period (2039-2045) $Y = 175.X + 3400$

Table 1. Preliminary values of production function (pessimistic forecast)

Year		2011	2012	2013	2014	2015	2016	2017	2018	2019
Value		4 945	4 710	4 475	4 240	4 005	3 770	3 535	3 300	3 725
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Value	3 890	4 055	4 220	4 385	4 550	4 715	4 880	5 045	5 210	5 375
Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Value	5 210	5 030	4 850	4 670	4 490	4 310	4 130	3 950	3 770	3 590
Year	2040	2041	2042	2043	2044	2045				
Value	3 750	3 925	4 100	4 275	4 450	4 625				

d. Constructing economic development – natural log values give the basic economic productions' development picture (Fig. 5 – left).

e. Verification of the development functions – gives the confirmation of the productions' development function (Fig. 5 – right).

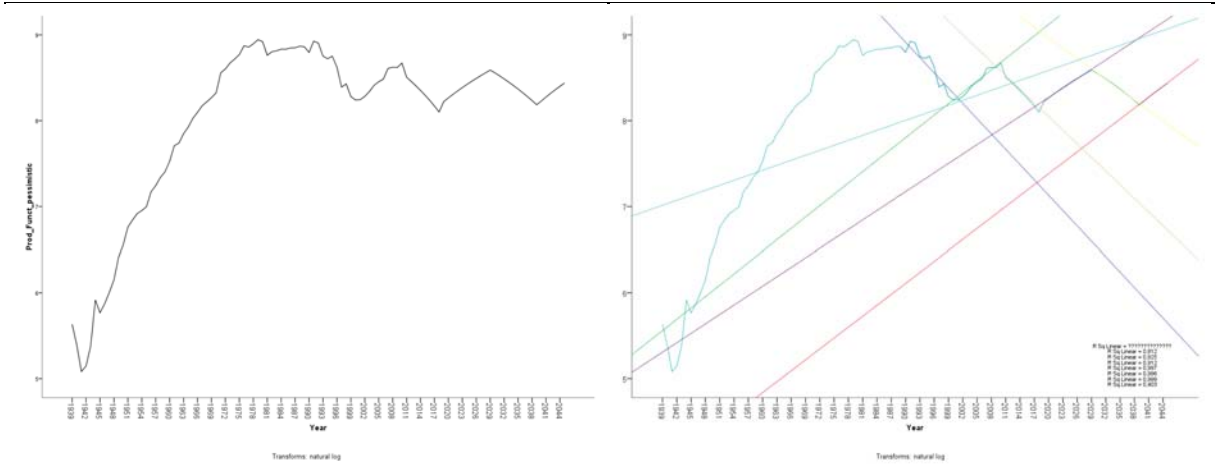


Fig. 5. Constructing the production development for period 1939-2045 (left) and verifying the development construction for period 2011-2045 (right)

f. Economic development perception – finally, the values of the production and turnover functions are set up as follows (Fig. 6. and Fig. 7.)

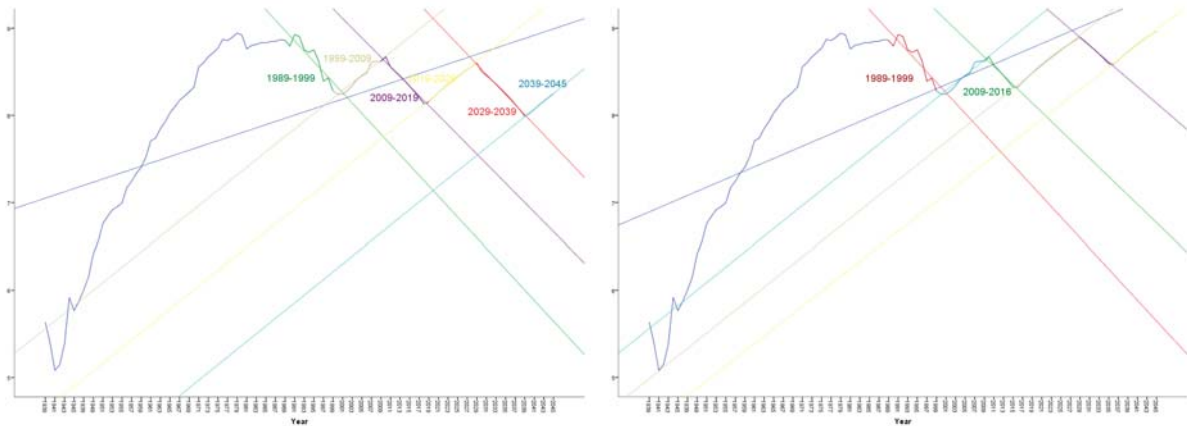


Fig. 6. Production function pessimistic forecast (left) and optimistic forecast (right)

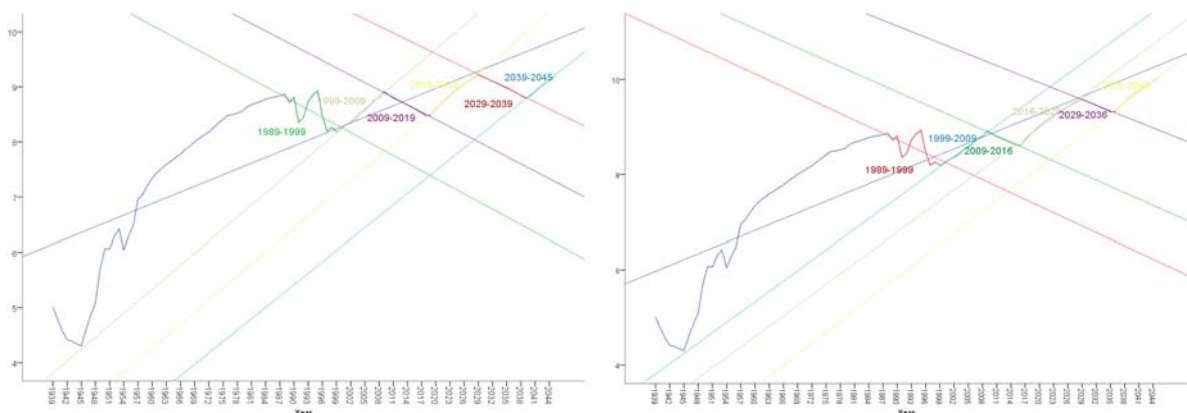


Fig. 7. Turnover function pessimistic forecast (left) and optimistic forecast (right)

- The industrial dynamics function of producing food and beverages in Bulgaria is done as well as pessimistic and optimistic scenarios (Fig. 8 – left) as the expected scenario (Fig. 8 – right).

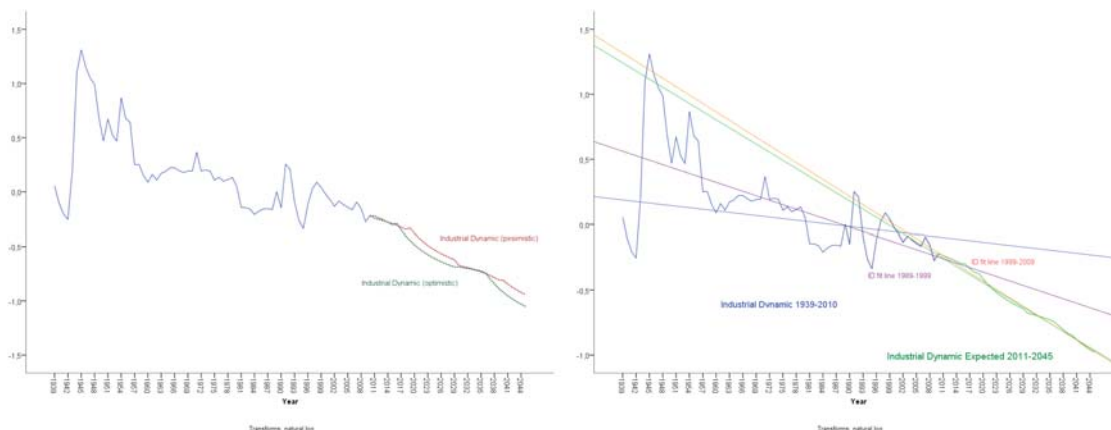


Fig. 8. Industrial dynamics function as pessimistic and optimistic forecast (left) and expected forecast (right)

Some conclusions could be drawn as follows:

- The industry dynamic picture shows continuing the trend of the Bulgarian food production losses for the next 30 years. Therefore, the food turnover had to exceed the food production in Bulgaria.
 - There is a significant differentiation in industry dynamics value for pessimistic and for optimistic forecast. Even though, the Bulgarian food industry will lose more of $\frac{1}{2}$ of its industrial competitive advantage.
 - The expected value of the industrial dynamics had to change with a trend that is very close to the trend of dynamic for 1999-2009. This result is a continuation of the opening of the food market at the EU level. Therefore the Bulgarian food industry had to keep its loss over the EU food producers.
 - By the middle of the 2040s the industrial dynamics of food production has to be stabilized at the level of 0.300 as a result of the fact that $\frac{1}{3}$ rd of consumed food shall be produced in Bulgaria.
- The shown picture has to become true if the food industry continues to refuse product and technological restructuring in the near future. So we need to set that there are some basic economic conditions that could change the forecast as follows:
 - Some changes of the economy development of the country. This will change the economic cycle and could be a beginning of new recession stage irrespective of the stage before.
 - Some changes of common European policy especially directly connected to the food production and its quality level. This will change the quantity of export and import of the food trade.
 - Some changes of transport infrastructure. This will allow increasing the level of exported food at national recession periods as an anti-crises instrument. So the variation during the economic stages had to depend on food production added value.

5. Conclusions

The analysis outcomes of the industrial growth of food and beverages sector are an illustration of the policy measures that have an influence on industrial development. The dynamics of the Bulgarian food and beverage industry shows continuing trend of production losses for the next 30 years. This means that

Bulgarian food industry is losing competitive advantages and has little perspectives for growth in a near future. Policy makers have to prioritize the importance of the food industry, as a traditional industrial sector. Regaining the positions of the past requires involvement of business in sectorial strategy development. A key factor for sectorial growth is the increase of investments, differentiation of product mix and implementation of innovations. Policy makers have to create favorable conditions for establishment of technological and trade alliances, networks and partnerships. This will help to divide the whole risk of investments in innovations and market efforts. There is a potential in the sector, but it needs specific exogenous conditions to flourish.

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Disability as a risk factor on the access to labor market

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Abstract. *The study is focused on studying the issue of people with disabilities and their access on the labor market. The research attempts to highlight the experiences of people with disabilities regarding employment, coping with discrimination and how the Romanian labor market is ready to receive these people.*

For conducting the research we used the questionnaire and focus group methods. We interviewed a total of 60 people with disabilities of various types (sensorial, mental, and physical) and 60 employers from different sectors of the economy.

Results showed that despite the many social policies launched in the last years, the percentage of people with disabilities on the labor market in Romania is still very small. There are many reasons both from employers and people with disabilities. There are also still huge degrees of discrimination and indifference.

Keywords: disability, employment, labor market, social policies

JEL codes: J7.

1. Introduction

Social integration of disabled persons still remains one of the greatest challenges that Romania is confronting at present, while the policy promoted in this field is expected to regard both the disabled persons' rights and the assurance of a certain life quality degree.

The social protection measures are meant to compensate the physical, sensory or mental deficit, in order to achieve equal chances for every individual. Lacking such measures, the deficient persons' situation would generate some major social gaps and a visibly decreasing degree in terms of social cohesion, social integration, as well as related to their physical and economic independence.

On 20th of June 2012, the overall number of registered disabled persons was declared – 686,551 persons of which only 27,109 employed. Of the total recorded, 669,334 disabled persons (97,49%) are in family's care (non-institutionalized) and/or live independently, while 17,217 individuals (2,51%) are institutionalized in public residential units of social assistance for adults with disability, under the coordination of the Ministry of Labor, Family and Social Protection – General Directorate Protection of Persons with Handicap (ANPH).

However, though during the late years a relatively increasing rate of employed people with disability in Romania, the statistics provided by ANPH show that the active people with disabilities employed are represented at a very small scale.

2. Purpose of the study

The present study is meant to identify the main obstacles preventing the people with disabilities in finding a job, by tracking the impediments of professional integration as well as revealing the drawbacks opposed by employers.

3. Methods

This study analyzes the disabled persons' opinions on finding a job and employment, as well as the employers' attitude and regards toward the applicants with disability, subsequently following the identification of elements that can influence the employment of a disabled person.

The targets of the further research were oriented to:

- Identification of the factors explaining the small number of persons with disabilities integrated on the free labor market;
- Identification of the barriers confronted by disabled people while trying to get employed;
- Outlining the general opinion of disabled persons in terms of factors and conditions that may lead to increase the amount of employed people with disabilities

In pursuit of achieving this study we had in view the following hypotheses:

- We presume that employers' attitude and regard towards people with disabilities are generally positive, but they are not especially inclined to actively involve in the social and professional integration process because they lack some successful models mostly offered by the public employers;
- We presume that the decision of employing a person with disabilities depends at great extent on the type and handicap degree;
- We presume that employers' decision to employ a disabled person relies mostly on the indirect financial costs and on the other employees'/collaborators' opinions;
- We presume that interaction or knowledge of disabled people's challenges influence the employers' decision to recruit such an applicant.

The study lot consisted of 60 subjects, 39 with locomotor disability, 12 with visual impairment and 9 with hearing impairment.

We processed interviews for each subcategory of disabled persons. Gender distribution is heterogeneous – the present study was attended by 36 male subjects and 24 female subjects. All interviewed persons were looking for a job opportunity. The choice of subjects considered their educational level (graduates of faculty or vocational school prevailed), handicap type and handicap severity.

The scarce amount of subjects interviewed is due to a serial of difficulties encountered during the identification and contact establishment of the people affected by various deficiencies still searching a job. Considering the low rate of disabled persons active on the free labor market, in order to interview a consistent number of subjects looking for a job, we would have been meaningfully helped by some support from authorized institutions, not only from the special NGOs contacted.

The questionnaires were distributed both physically and electronically to the employers. Out of 123 questionnaires, 60 were selected because they coped certain criteria: they were completely filled in, they contained answer argumentations, the companies were located in Bucharest, the activity field of the companies allowed employing persons with visual impairment, hearing impairment or locomotor disability. The employers who filled in the questionnaires are managers, Human Resources experts or appointed as decision-makers in labor recruiting.

All employers are active in the private sector and only 22 are under legal liability of either recruiting disabled persons (according to the present legislation, these employers must have more than 50 employees). We were not enabled to include in our study also employers from the public labor field that are under the legal liability of employing more than 4% disabled persons, because of various reasons (human resources employees invoked lack of time or even lack of information on this matter).

Research methodology for this study comprises two parts – the qualitative personnel requirement analysis applied to the persons with disability and quantitative personnel requirements analysis applied to the employers.

During the process of identifying the obstacles preventing labor integration of the disabled people, we used two questionnaires and we organized a focus group attended by impaired subjects willing to find a job. Unfortunately, we were not able to achieve a focus group of the employers, because of the lack of time or unavailability invoked by the latter ones.

A 13 questions-questionnaire was filled in by disabled persons looking for a job, while an 8 questions-questionnaire was filled in by the employers or their representatives. The questionnaires were filled in both physically (on paper) and electronically. The questionnaires meant for the persons with disabilities were purposely sent to the associations oriented to promoting the disabled persons' rights (Associations of Visually Impaired Persons-Bucharest branch, Associations of Hearing Impaired Persons-Bucharest branch, "Queen Elisabeth" Educational Centre, Associations of Physically Disabled Persons). The employers filled in the questionnaires mostly online, while identification of the companies in search of employees at the research time was accomplished with data from specialized sites.

The questionnaires for the two groups of subjects were anonymous and consisted in open questions, in order to detect the strongest opinions of those involved. The questionnaires were distributed between 5th of November 2012 and 20th of November 2012.

Focus groups organized with disabled persons focused on items as the following:

- employment discrimination;
- difficulties encountered while searching and finding a job;
- knowledge of legislation and institutions undertaking projects that aim social and professional integration of the disabled persons (ANOFM, ANPH, etc.);
- active measures of encouraging employment of people with disabilities;
- educational system and qualifications offered by the Ministry of Education to the graduates affected by various types of deficiencies.

The focus groups were organized between 21st of November 2012 and 28th of November 2012.

4. Findings

The experience of persons with disabilities related to employment on the free labor market reduces to the periods either when they have to file their unemployment records and ANOFM finds some jobs for them (generally they are offered with positions for people without disabilities, because there are no special

jobs for impaired persons on the labor market) or when they are compulsorily required to attend some professional training classes, more or less accessible to them.

74% of the persons with disabilities inquired have no knowledge of their personal abilities, therefore they cannot precisely know they are eligible to apply, neither regarding the field nor the job.

As for the recruiting process, most of the inquired persons stated that the employers reject them after they find out about their disability.

Another matter debated by the disabled persons is the lack of information about prospective employment – there are few jobs offered to impaired persons and the information updated by vacant jobs lists is poorly disseminated.

Most of the interviewed subjects stated that, in the past, they found a job due to their friends or acquaintances, while the help they could get from state bodies of specialized NGOs was definitely scarce.

A significant part of the subjects declare that they had to accept a work environment that proved extremely challenging for them (consistent overtime – significantly more than their medical state allows them -, intense physical work, although they are recommended to avoid physical effort, unskilled work, because they could not find anything else adequate either to their qualification or to their desire to professionally reconvert).

The interviewed subjects with disabilities identified several categories of impediments: cultural challenges like educational lapse (low educational level or difficulty in using an international language) or even using the Romanian language (communication means limited by certain intellect or hearing impairments), environment challenges – lack of an adapted transportation vehicle or economic challenges – money scarcity and financial restrains (most of them stated that their salary generally amounts to the minimum legal wage and it covers only the utilities and daily expenses).

Regarding the legislation for people with special needs, 57% of the subjects declared that they are not accurately informed about the national and international laws providing their rights, while most of the respondents know the institutions they need to address for finding a job.

The study subjects' opinions on the active measures meant to stimulate the employment of people with disabilities concentrated on (1) the keen necessity of more extensive facilities granted by the state to the potential employers, so that they may become more interested in creating jobs for persons with special needs, (2) more efficient ways of informing the public audience about the importance of employing a disabled person (thus there occurs the possible transition from assisted person status to payer of taxes and duties) and (3) facilitating the proper active environment, so that reaching the job place in due time should not become a challenge.

The interviewed persons with special needs consider that Romanian educational system does not offer qualifications according to the job market requirements and the courses organized by ANOFM (National Employment Agency) for qualifying workers are neither adequate for the abilities they are endowed with. This is the reason why most of them either could find jobs in entirely different fields than those they had been trained for or they had to accept jobs as unskilled workers.

Employers' general opinion about recruiting disabled people complies with their previous experience. Although they did not know the matters related to persons with disabilities (some of them had disability cases in their family or knew the problems confronted by disabled acquaintances), most of the employers that answered the questionnaire stated that they would prefer the state or NGOs to assist these impaired persons by creating some special jobs.

Interacting with disabled people also influence the employers' opinions in terms of the reasons why so few persons with disabilities actively work. Those not knowing personally people with special needs think that the environment access challenges fully substantiate the high rate of unemployment within this social category.

22% of the interviewed employers stated that they had or had had disabled employees. Most of them declared they had only one employee with disabilities or at most three. No employer declared more than three employees with special needs.

All responsive employers revealed the fact that they had never been contacted by any state institution with regard to recruit people with disabilities, while 24% of them recognized they did not know about the fiscal relief they could benefit from in case they employed a disabled person.

The employers also identified the high costs of employment for people with special needs as one of the obstacles preventing the latter ones' integration within the free labor market. The employers sustain that companies are tax exempted only for duties, while the investment requested by the employment process is completely at the employers' expenses and not charged to state. The employers' discontent related to the disabled workers was pointing the low productivity, the more frequent medical care needed (more sick leaves), the limited work experience as well as the fact that the fiscal facilities offered by the state are hard to be accessed, while the labor investment is difficult to recover.

Extensive support in accessing the jobs and offering more profitable fiscal relief are the main leverages to motivate employers toward recruitment of people with special needs.

"Would you rather prefer persons with a certain disability type when you have to proceed to recruitment?" At this question most of the employers answered that they prefer persons with locomotor deficiency, while as the lowest chance of being chosen they mentioned those affected by intellect deficiency.

As a conclusion: the employers avoid to recruit persons with disabilities and only a small percentage of the inquired ones recruited disabled workers, while regarding the way they mean to integrate people with special needs within the work environment, most of them declared they prefer to pay taxes, charity contributions or purchase products and services from protected companies instead of hiring from this category.

5. Conclusions and recommendations

A very restrictive number of employers may be open to offer jobs to persons with disabilities, while an even smaller amount agrees to pay the special needs workers as to their performance. Few employers are available to recruit disabled people, in spite of the fact that they consider the latter "normal individuals".

By this investigative study, we paid keen attention to the Romanian legislation regarding the protection and work recruitment of persons with disabilities. On analyzing all legislative documents issued in Romania in compliance with disabled persons' protection as well as studying the official provisions related to their integration within the labor market, we further concluded:

- Romanian laws are mainly oriented not toward stimulating the integration of persons with disabilities within the labor market, but toward preventing their discrimination by means of increasing the taxes or fiscal contributions taken from the employers who refuse to recruit disabled workers;

-
- Romanian legislation generally stipulates more interdictions and less sanctions for the cases when official provisions are infringed, therefore we can plainly state that a consistent part of the legislative clauses are meant to become mere recommendations. A law that provides the frame for a serial of liabilities, while it does not issue the adequate sanctions, is not practically applicable, thus it reaches the status of recommendation, which is prone not to be observed even by state institutions that are supposed to be the most open to disable persons recruitment.
 - There is an urgent need for generating some legal stipulations meant to stimulate the employers to create jobs for people with special needs as well as for compensating the lack of stimulents that could help employers enhancing the access to work location (access platforms for the locomotor disabled persons, computers adapted for visually impaired workers, etc.). At present, the state grants just some financial incentives as tax exemptions for disabled persons' assistance.

Romanian legislation is overdue regarding the promotion and implementation of effective social policy in order to achieve the professional and social integration of persons with disabilities. Therefore, by the obsolete measures comprised, Romanian legislation pertaining to this field is rather a frame of passive social assistance (accomplished by means of subsidies and allowances) than an active one that should create the necessary premises for work integration of the disabled persons as well as for facilitation of their full access to the free labor market.

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A mathematical model for consumers based on aspiration adaptation theory and bounded rationality

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Abstract. *This paper describes characteristics of a discrete - time model for a consumers group through bounded rationality theory, where the basis of decision-making is the Aspiration Adaptation Theory (Selten, 1998). Each consumer try to imitate the decision of others related to them based in last time period observation, as long as they are connected by no directed and no weight graph. The models consist of some algorithms for imitation process, income raise through education and the extreme cases. Finally, the paper shows conclusions and extensions.*

Keywords: aspiration adaptation theory, bounded rationality, imitation, consumer's theory.

JEL codes: C63, D03, D71, D81, D85.

1. Introduction

Having unlimited cognitive capacity suggests the ability to process information faster or equal to a computer and all mathematical processes are perfect to make the best decision among a set of infinity time-limitless possibilities. In consumer's theory it means that the consumer maximizes his utility function restricted to his budget constraint. This perspective is in conventional microeconomic textbooks and it leads to fundamental results in the study of consumer's behavior.

From a different approach, the consumers behave like human beings and have cognitive limitations. The *bounded rationality theory* can explain such limitation in an environment. The concept of bounded rationality starts in Simon (1955) who stated the importance of replacing a global rationality in economics for a rational behavioral concept compatible to access information and computational constraints. Later studies like Simon (1957); Simon, Edgi, Viale and Marris (1992); Rubinstein (1998); Gigerenzer & Selten (2002) and Selten (2002) have helped to bounded rational concept. Simon et al. (1992) state the importance of relatives to complex environment, human brain computing capacity limited by time, generating behavioral characteristics suggesting the necessity to build economic models based on human thinking.

The Aspiration Adaptation Theory (AAT) (Sauermaann & Selten, 1962; Selten, 1998) offers a different alternative to the optimization process, which goes against bounded rationality theories (Gigerenzer & Selten, 2002). According to AAT, there is no utility or benefit function to quantify consumer's satisfaction. Instead there are different incomparable goals to define what the economic agent wants. AAT was developed to

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explain a unique firm behavior, but it is extensible to a consumer theory. It is a bounded rational theory example which is non-optimizing but not irrational (Selten, 1998).

There are consumer behavioral models like Özak (2009) based on the optimization process, but in this article, the model supposes no function utility of consumption function to serve to an individual decision making tool. There are some models based on AAT like Rosenfeld & Sarit (2011), but in this case it takes incomparable goals and there are many consumers in a community.

2. The theoretical model

2.1. Definitions and notation

It's a time – discrete model. The variable $t \in \mathbb{N}$ designates time. There is a finite set of consumers denoted by X , and each consumer is denoted by x_i , $1 \leq i \leq n$, and they can be ordered with no generality loss. The community of consumers by a no directed and no weight graph¹ $C = (X, E)$ is defined, where $E \subseteq [X]^2$ represents the relations among consumers. An element $e \in E, e = \{x_i, x_j\}$ means consumer x_i is related to consumer x_j , therefore they can share information, it can be understood as friendship between people (it is unrealistic that a person should share information with himself, which implies $i \neq j$).

Every consumer has an income m at every time t , generating the possibility to save and have monetary wealth. Income on the model allows purchasing available goods in the market, and wealth allows reaching those who cannot buy in a certain time period based on his/her budget constraints. Consumption on an individual depends on his/her actual income and his wealth on the last period of time. There is no financial system or government (no indebtedness or tax on the model).

Each consumer can choose among set of r goods available on the market. Suppose that individual has two kinds of needs. The first related to their physiological needs as a living being, which can be called *food or alimentary good*. The second related to their emotional well-being to which we can call *non food or non alimentary good*. Each good satisfies one or both needs, and has a price that cannot be modified by a consumer.

Since there are r goods, and every single one with three characteristics, the price in the market and levels that each good contributes to the satisfaction of its alimentary and no alimentary need, respectively in a period of time, it can build a *good matrix* $B = (b_{ij}), 1 \leq i \leq r + 1; 1 \leq j \leq 3$, where b_{ij} corresponds to characteristic j of good i . These characteristics, for simplicity of the model, are invariant through time and common to all the consumers. Therefore, the contribution of one good for alimentary and no alimentary needs is the same for all. Goods split in turn in α alimentary goods and $r - \alpha$ not alimentary goods. Each group must order upwardly to the price.

Additionally the model gives capability of varying consumers' income by consuming a special kind of good called *education*, it has an invariant price and can generate an increment δ over the income when it is consumed. Education properties are located in the last row of matrix goods, for this reason it has $r + 1$ row.

2.2. Instrumental variables and goals

Based on AAT (Selten,1998), each individual has variables that determine his/her goals. The consumer goals correspond to the satisfaction of their needs as well as quest of wealth. Let g_1 and g_2 denotescorrespondent goals to the satisfaction of alimentary and no alimentary needs. The monetary wealth is denoted by g_3 .

¹ Following the notation used on Diestel (2000)

The instrumental variables of every individual Y_k , $1 \leq k \leq r + 1$ represent goods that each individual consumes and y_k consumed quantities of each good, taking into account education at position $r + 1$. A plan $y = (y_1, \dots, y_{r+1})$ is a combination of values for instrumental variables, in this case, represents a number of units consumed by a person in a period of time, this plan varies through time. It will be supposed for simplicity in the model that a person consumes one unit of each good at the most. As each person follows a different plan, the notation to keep is $x_i \cdot y(t)$.

2.3. Actions

An action $y' = A_i(y)$ is a function that indicates the variation in a consumption pattern. Each variation consumption pattern has an effect on the goals. The actions proposed in the model are:

- A_1 : Imitation on alimentary goods.
- A_2 : Imitation on non - alimentary goods.
- A_3 : Increment on person education.
- A_4 : Saving.

Each of these actions seeks to generate an increment at least in one goal, e the last one (reserved for some extreme cases).

2.4. Construction of the influence scheme

The influence scheme corresponds to a 4×3 matrix, it will denote by Q , contains what really happens to a consumer after having consumed goods in certain period of time.

The choice of elements of matrix depends on values of variables $g_k(t)$ and $g_k(t - 1)$. When $t = 0$, scheme of influences does not exist, meantime the individual does not begin his process of consumption, it will not be able to evidence variations that generate actions. Therefore the influence scheme must be modified for every $t \geq 1$.

In actions A_1 and A_4 , correspondent to consumption of alimentary goods, it lacks of sense of consumption if it has reached maximum satisfaction level, equivalent to 100 units. Verification for this level of aspiration can be seen in these algorithms. When executing these actions (whichever it had been taken) if $g_1(t) \geq 100$, it should be assigned at the position q_{11} or q_{14} the value of 1, in case that it has not been assigned previously.

It is evident that consumption of alimentary or non - alimentary goods will generate an increase in any one of the variables g_1 and g_2 , however it is the variation $\Delta g_k = g_k(t) - g_k(t - 1)$ which will give counts if actions (particularly on imitation in non - alimentary goods) have produced improvement on the goal, and that way, look for a different order in actions that the individual should follow in the next period of time, otherwise, dynamics of model would go away. This is a substantial difference with Selten's original model (Selten, 1998) where influences scheme adds a sign if the goal increases in accordance with a given action, but do not give account of whether you had a positive or negative increment in time.

3. Algorithms for actions and others considerations

3.1. Imitation on consumption of alimentary and non-alimentary goods

In order to generate the imitation in consumption, rule will be: **First, you will consume the goods that had bigger consumption inside your social circle in the immediately previous time.** This rule contains three processes and they are the following:

1. Build an alimentary (or non – alimentary) goods demand matrix I to their social circle, to every consumer, because every individual have their own social circle and it is different from another (it can be seen on adjacency matrix of graph). The following algorithm allows building a matrix that contains an index on each good on first row, and number of people in social circle who have consumed these goods in the last period of time. Given a consumer x_i it follows this sequence of steps:

For k from 1 to α do:

$$I_{1k} = k$$

$$I_{2k} = 0$$

For every x_j such that exist $e = \{x_i, x_j\} \in E$ do:

For k from 1 to α do:

$$\text{If } x_j \cdot y_k(t-1) \neq 0$$

$$I_{2k} = I_{2k} + 1$$

2. Sort the columns in demand matrix based in second row downwardly. It is very important that the elements on the first row should change in accordance with changes made on the second row. This allows to know which goods they have consumed more than others. Consumption through observation would implicate that the consumer sees people close to him consuming a good and he will consume it also depending on the people's number that they had consumed it in a previous time.
3. Consume goods based on his budget constraint and the permuted index in the first row of demand matrix. There are few differences on alimentary and non-alimentary consumption algorithms. For alimentary goods:

Begin consumption algorithm

$$Income = x_i \cdot m$$

$$C1 = 0.$$

For k from 1 to α do:

$$\text{If } Income - b_{I_{1k},1} \geq 0 \wedge x_i \cdot g_1(t) < 100$$

$$x_i \cdot y_{I_{1k}} = 1$$

$$Income = Income - b_{I_{1k},1}$$

$$x_i \cdot g_1(t) = x_i \cdot g_1(t) + b_{I_{1k},2}$$

$$x_i \cdot g_2(t) = x_i \cdot g_2(t) + b_{I_{1k},3}$$

$$C1 = C1 + 1$$

$$x_i \cdot g_3(t) = x_i \cdot g_3(t) + Income$$

End consumption algorithm.

For non-alimentary goods:

Begin consumption algorithm

$$Wealth = x_i \cdot g_3(t-1).$$

$$C2 = 0.$$

For k from $\alpha + 1$ to r do:
 If $Wealth - b_{I_{1k},1} \geq 0$
 $x_i \cdot y_{I_{1k}} = 1$
 $Wealth = Wealth - b_{I_{1k},1}$
 $x_i \cdot g_1(t) = x_i \cdot g_1(t) + b_{I_{1k},2}$
 $x_i \cdot g_2(t) = x_i \cdot g_2(t) + b_{I_{1k},3}$
 $C2 = C2 + 1$
 $x_i \cdot g_3(t) = x_i \cdot g_3(t) + Wealth$
 End consumption algorithm.

The main difference between these algorithms is that people consume alimentary goods based on their income restriction, but when they consume non-alimentary goods, they use monetary wealth in the immediately previous time period.

3.2. Increasing education levels

It is an action to generate dynamic model through income. An increment in the study will generate a raise in the individual's income. The instrumental variable related to education is $x_i \cdot y_{r+1}(t)$, and price of education is $b_{(r+1),1}$. Education does not affect g_1 or g_2 directly. It is possible due to high cost of education, that individual should not always be able to consume it, therefore the algorithm should have provision option of knowing if it is consumed or not by a counter (**C3**).

Begin education algorithm
 $C3 = 0$.
 If $g_3(t) \geq b_{(r+1),1}$
 $x_i \cdot y_{r+1}(t) = x_i \cdot y_{r+1}(t) + 1$.
 $C3 = 1$
 $x_i \cdot g_3(t) = x_i \cdot g_3(t) - b_{(r+1),1}$
 $x_i \cdot m = (1 + \delta)x_i \cdot m$
 End education algorithm

3.3. The action of saving

In this model, the individual saves based on consuming alimentary goods of minor price exclusively. For that reason, the goods matrix ordered to upwardly in first column. Three alternatives for this action are presented by the model (See section 3.4) and a marginal propensity to saving, s .

The proposed algorithm for saving is the following:

Begin saving algorithm. Input: s
 $Income = (1 - s)x_i \cdot m$.
 For k from 1 to α do:
 If $Income - b_{k1} \geq 0$
 $x_i \cdot y_k = 1$.
 $Income = Income - b_{k1}$.
 $g_3(t) = g_3(t) + Income$.
 End saving algorithm.

Notice that there is no counter in the algorithm because a person must consume alimentary goods in order to survive. There is no permutation over the matrix good index since prices are sorted upwardly, and he consumes starting with the smallest price good as long as he can.

3.4. Counters on the algorithms and extreme cases

Under ideal conditions, you would execute always imitation actions if the individual's income is enough for acquiring the goods that others in their social circle have acquired. However, there is no motive that guarantees these actions are taken.

Some algorithms have a counter that allows knowing if these actions actually have made differences in a plan. The two first counters, $C1$ and $C2$ allow knowing how many goods have been consumed (alimentary and no alimentary respectively) for imitation process. The counter $C3$ allows knowing if education has consumed or not in a given time (only you can take zero or one). There are three counters and eight possibilities.

Case	$C1$	$C2$	$C3$	Conditions and changing order in the actions
1	a	b	1	Best case scenario. Three actions take place and proceed checking the influence scheme.
2	a	b	0	Wealth is not enough to buy education. If $\Delta g_2 > 0$ the order should be A_1, A_3, A_2
3	a	0	1	Alimentary goods and education has been consumed. In the next period the order should be A_1, A_2, A_3 if $q_{11} = -1$ and A_2, A_1, A_3 otherwise.
4	0	b	1	Case dismissed alimentary consumption goods must be first before education.
5	a	0	0	Wealth is also low to buy non-alimentary goods by imitation process. The next order should be A_4, A_3, A_2
6	0	b	0	Extreme case only when the order has been A_2, A_1, A_3 . The individual has not consumed alimentary goods in this period of time Action A_4 must be taken immediately.
7	0	0	1	Case dismissed. The price of education must be higher than any other.
8	0	0	0	Worst case scenario. Any imitation action has worked. Must execute action A_4 immediately.

Table 1. Possibilities over counters in the actions

3.5. Steps for complete algorithm construction

The steps for construction with all characteristics previously mentioned are:

1. Define initial conditions: Number of consumers, community of consumer (graph), income and initial consumption for each consumer, marginal propensity to save, rise by education, number of goods (both), goods matrix, permutations, and limit time of execution T .
2. Do the following cycle:
 - For t from 1 to T do:
 - For i from 1 to n do:
 - Execute actions based on the permutation order for consumer x_i .
 - Make modifications on permutation of consumer x_i based on counter cases
 - And the influence scheme.

4. Conclusions

It is a model of bounded rationality that evidences consuming agents' behavior without processes of optimization, based in AAT. It contains simple and computationally economic rulers of decision, (fast and frugal), principal characteristic in theory of bounded rationality (Boyd and Richerson, 2002; Todd, 2002).

The advantage of consumption for imitation is when an individual consumption based on consumption of others instead of his/her consumption in a previous time, uncertainty on the contribution that goods makes to his goals is generated. Uncertainty also is a characteristic of bounded rationality (Simon, Edgi, Viale and Marris, 1992).

When calculating $\sum_{i=1}^n x_i \cdot y_k(t)$, it represents number of consumers who have consumed good k for a t given, that put all goods together, a vector of demand of all goods to time is obtained, ideal for later studies.

In virtue of use, graphs theory (particularly no directed graphs) models a community of consumption (through the nodes) and relations among themselves (edges), a consumers' group like a society can be modeled who share information of consumption. This characteristic is desirable for those models that want to explain consequences that are generated for personal connections between the human beings.

The imitation learning process can complement with variables that have not been taken into account in the model, and they are described in experiments with human beings like described in Rodas (1974). Also a substantial variation in individuals' incomes can be included within the model, constructing social strata. According to Rodas, imitative processes can be influenced by various factors, like gender and social stratum, and so on. This model does not make distinction between men or women, which is a characteristic that can be added as parameter to each individual. Some others learning process can be used instead of imitative learning (Pingle, 1995; Sutton & Barto, 1998; Ghulam, 2010). Also imitative learning and reinforcement learning can combine to improve behavior in decision making modelling.

The model does not explain which ones are the initial values that should have the parameters. The choice of these values can be based on experimentation with real data or simulation processes.

As to initial values of instrumental variables, possibility of electing goods that have been a product of interaction in a particular community can be considered. It is here where social and cultural characteristics can be modeled. People who have grown in different places have different patterns of consumption, but when gathered in a single place, their habits mix to generate a different consumption behavior.

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Evaluation of performance and efficiency of the CRM

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Abstract. *In order to achieve customer satisfaction, enterprises must manage their own value chains together with their complete system of providing customer oriented values. The aim of enterprises is not only customer acquisition, but mainly their retention. It is customer relationship management that deals with this issue. However, the question raised is how to measure the level of customer relationship management (CRM). This issue is addressed in our contribution.*

Keywords: customer, company, customer relationship management, minimum and optimal level of CRM .

JEL codes: M31.

1. Introduction

Nowadays the business environment is in not a very enviable situation, the market is affected by crisis and today's customers have the opportunity to choose from a number of comparable goods and services. Since the sellers' market changed to buyers' market and customers are and competitive advantage for companies, therefore they need to try to keep them. Customers decide whether the company will retain on the market.

Therefore only those who are able to estimate duly and in time the trends and risks in their field and to adjust their activities to current requirements are winners on the market. An effective care for customers, creation and long-term maintenance of close links not only with customers but also with suppliers and other partners is a proven key factor.

For the companies to achieve customers' satisfaction they need to handle their own value chains and the whole system of providing values with orientation on customers. The aim of companies is not only the acquisition of customers but also keeping them. Customer relationship management deals with this issue.

2. CRM – Customer Relationship Management /CRM – philosophy

Customer Relationship Management (CRM) means managing relationships with customers. It is an interactive process which aims at reaching optimal balance between company's resources and satisfying customers' needs. An optimum balance is characterized by maximum profit of both parties. The prerequisite of reaching this optimum is in creation of long-term partner relations with customers. Long-term perspective

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cooperation brings significant value quantifiable in monetary terms to both parties (Chlebovský, 2005, str.23).

According to many authors dealing with the issue of CRM the understanding of this term stabilized in the sense of business strategy of choice and management of the most valuable relationships with customers. „CRM is thus a business philosophy and business culture focused on customer that supports effective marketing, business and servicing processes. CRM is a way how the company deals with its customers, what relations it keeps with them and how it uses these relations to mutual benefit.“ (Storbacka, Lehtinen, 2002, s. 16).

3. Measuring the level and performance of CRM. Introduction

The best way to find out how big the contribution and importance of CRM is for the company is by the measurement of the level and performance of CRM. There are a number of methods used for measurement of the level and performance of CRM and of / for satisfying customer needs. An example of this can be CRM – Body Check, CRM Scorecard, CRM Maturity Model, Method of qualification of development abilities, CRACK Model and others. Most of them are built on the basis of sophisticated questionnaire structures and their subsequent objective assessment.

If we want to create a methodology for measuring the level of CRM, we need to rely on a concept of CRM oriented on the company strategy. It is almost impossible to reach a total generalization while adding specific recommendation valid in optional ideal situation. On the other hand, it is possible to develop a basic design of a measurement system and methodology procedures which could be effectively adjusted to the requirements of a given company.

Chlebovský (2005, s. 135) alleges „number of companies state that they carry the measurement of performance of CRM. In fact their measurement is limited only to monitoring the number of newly acquired contacts on potential customers, sale productivity, performance of call centers or alternatively they rely on customers' profitability. They often forget key factors which influence the financial results“.

Further the author gives a definition „the system of measuring the performance of CRM should connect long-term vision, strategy and goals in CRM with specific short-term tactical, action and evaluation plans creating the moving power of CRM.“

4. Measurement and evaluation of the level of CRM in a chosen furniture company

4.1. Chosen method of measuring the performance and level of CRM

By the analysis of individual methods we came to the conclusion that it is important to define what variables in the sphere of management of customer relations the company wants to examine and according to that it needs to decide what method it will use when measuring the performance of CRM. On the basis of carried out analysis and comparison of single methods we decided to use for the measurement of the level and performance of the CRM the method CRACK which we applied on a chosen company and its key customers.

Evaluation of performance, use of CRM was divided into these main parts as follows:

- determination of monitored variables, criteria,
- calculation of importance of individual variables through Saaty matrix,
- assessment from the point of view of the company,
- calculation of complex indicator of the level of CRM,

- assessment from the point of view of customers,
- confrontation, or comparison of obtained findings from the assessment made by company and customers.

„It is always true that it is not possible to develop the system of assessment or measurement in an absolute general form which would be immediately usable in every company. It needs to be adjusted to specific company, it's structure, environment in which it operates and needs which it's management follows” (Chlebovský a kol., 2005, s. 134).

With regard to the above-stated it was needed to thoroughly consider the choice of specific criteria which will be the subject of monitoring. We had to consider the following factors when making a choice:

- we need to identify mainly what is the overlook of the future in main areas and not only past and present state,
- monitor also internal processes and company activity which are closely connected to subsequent behavior and attitudes of customers and not concentrate just on these behavior and attitudes.

CRACK Model (Customer Relation Analysis Complex Kit) was defined as a basis for the choice of suitable criteria. The choice of criteria was always carried out on the basis of discussion with the representatives of relevant departments and specifically from departments of marketing, business, logistics, production as well as with a director of the company. All criteria stated in the CRACK model were discussed, however only those which are possible to follow and evaluate properly from the point of view of the specific company, were chosen. The following criteria were chosen and evaluated:

1. sphere Marketing – the brand:

- f₁: quality of the brand – on what qualitative level the customers perceive the brand,
- f₂: loyalty to the brand – what is the relationship of the customer to the brand.

sphere Marketing – supply/offer:

- f₃: satisfaction with supply – how satisfied the customers are with the supply,
- f₄: value of supply – how is the acquired value perceived by customers.

2. sphere Customers

- f₅: probability of success – success rate in negotiation,
- f₆: loyalty to customers – relationship of company to key customers,
- f₇: business relation risk – jeopardizing the relationship with key customers,
- f₈: attractiveness of customers – perceiving key customers attractiveness.

3. sphere Service

- f₉: handling of claims – satisfaction of customers with claims handling,
- f₁₀: legitimacy of claims – the percentage of legitimate claims from the total number of claims

4. sphere Logistics

- f₁₁: orders not executed in a set date – the percentage of orders which were not executed in a date set by the company,
- f₁₂: orders executed in required date – the percentage of orders executed in a date required by the company.

5. sphere Complex indicators

- f₁₃: transition to competitors – likability that the customer will transfer to the competition,
- f₁₄: overall satisfaction – rate of overall satisfaction of business partners in business relations.

The next step following the choice of appropriate indicators for measurement and evaluation of level and performance of the CRM lied in the need of setting the weights of these criteria. It is needed because of the fact that not every criterion has the same importance in comparison with others. Before the weights of each criterion were set, preferences between individual spheres were defined. **The method of quantitative comparison of criteria was used for setting the preferences and subsequently calculating the weights.**

In this step the weights of individual criteria from all chosen spheres were set but in the contribution we mention only one – Marketing.

After setting the weights for individual areas and criteria it was necessary to „objectify“ these weights. The point is that it is necessary to recalculate values of weights in a way that their amount would be equal to 1. Only by this it will be possible to use the weights in further evaluation of performance of the CRM. The recalculation of the weights was conducted in a way that each of the criteria weights was multiplied by the value of weight of a given sphere.

4.2. Recalculation of weights and defining the ranking of criteria

		Weight of criteria	Weight of the sphere	Final weight of criterion	Ranking of criteria
Marketing	f ₁	0,40973	0,40857	0,16740	2
	f ₂	0,07075		0,02891	11
	f ₃	0,31133		0,12720	3
	f ₄	0,20820		0,08506	5

Fig. 1: Recalculation of weights and defining the ranking of criteria

The next necessary step for the evaluation of performance of the CRM is to get values for individual criteria. Usually the values are acquired from employees responsible for ensuring the CRM however in our case there is not specific person in the company who would have this responsibility. Thus we decided to get evaluations from more representatives of the company. A questionnaire containing 14 questions linked to individual evaluating criteria in a way that it would be possible to get value for each of them was handed out to every evaluator. In principle it was about defining the importance (0 – 10) or percentage value (0 – 100 %) of a given criterion.

4.3. Evaluation from the point of view of company

Each of the company representatives assessed all criteria regardless the fact that the given sphere falls directly into his competence or not. However to reach objectiveness of final value of indicators we decided to set weights of individual departments when responding to specific questions. By this step we ensured that for example the criteria in the marketing sphere are in main competency of a representative of this department but also the business department and company director have certain share.

From the values acquired by this process we subsequently developed a weighted average and obtained the level of CRM in percentage whilst 100 % is the theoretical ideal state. For the calculation of weighted average the relation below was used:

$$x_p = \frac{h_1 per * v_1 + h_2 per * v_2 + \dots + h_n per * v_n}{v_1 + v_2 + \dots + v_n} = \frac{\sum_{n=1}^k h_n per * v_n}{\sum_{n=1}^k v_n}, \quad n = 1, 2, \dots, k \quad (1)$$

where: x_p – weighted average,
 $h_n per$ – value of criterion in percentage ,
 v_n – weight of individual criteria,
 k – number of criteria.

The calculated value of weighted average is 78.08 which means that the level of the CRM in observed company is 78.08 %, and therefore to achieve theoretical ideal it misses 21.92 percentage points.

On the basis of this process by the obtained value of the level of the CRM we can state that the company fulfills the values of the CRM on 78.08 %, which explains the relatively good level although distance from the „ideal“ is a premise for further improvements mainly by thorough analysis of examined spheres and criteria.

It derives from the already mentioned and partly used CRACK model but also from the consultation with company representatives that to meet the ideal 100 % value is more or less unreal. Thus we decided to set optimal values which would express the level of individual spheres and criteria which is sort of a real maximum for the company. When achieving these values the company would be satisfied because the required planned level would be reached.

On the other hand we consider it essential to set also so called minimal values. These would create some kind of critical limit for the spheres as well as for individual criteria. In case of achieving set minimal values or the values would be even lower, the company would need to adopt quick measures to change the bad situation which could seriously jeopardize especially relations with key customers.

Mentioned optimal and minimal values were set by individual departments, nevertheless each department has different competencies. To reduce the influence of this factor the acquired values were multiplied by weights of individual departments for every criterion.

These values will serve us for fast and simple comparison where the real level of the CRM which we calculated is placed.

On the basis of these results it is obvious that the current level of the CRM is placed in a span between optimal (84.42 %) and minimal (67.58 %) level. While current level is 6.34 percentage points far from the optimal and 10.5 percentage points from the minimal level. From the determination of this distance it results that the current level of the CRM is closer to the optimal however missing percentage shows a space for improvements.

4.4. Evaluation from the point of view of customers

Although the company already set its current level of the CRM, it is assessed only from the inside. Since the goal of the CRM is a dull management of relations with customers we considered it important to find out how the CRM of the company is perceived by its customers. Primarily the CRM is focused on the most important customers and therefore when detecting the perception of the CRM by customers we decided to address only those who were identified as key and thus most important purchasers.

For calculation and determination of the value of the CRM from the point of view of customers we used the same procedure as in the case of the company itself. Therefore only the simplified process will be given in this contribution while we focus mainly on the sphere of Marketing.

To ensure comparability of evaluations the same criteria and individual values obtained from customers by questionnaires were kept. However to ensure „customer view“ all five customers (business partners) were requested to express their preferences in comparison with individual criteria as well as individual spheres containing these criteria.

As well as in the case of the company here the Saaty's matrix was also set based on preferences. Through them we calculated weights of each sphere as well as weights of individual criteria. Final weight of criteria was set as well as in the case of the company based on multiplying their weight by the weight of a sphere in which they belong. Final weights will be used in further calculations leading to definition of the level of the CRM perceived by customers.

For calculation of the level of the CRM from the point of view of the customers we used weighted average in the same way as for calculation from the point of view of the company.

By these calculations we reached a value of the level of the CRM perceived by customers and that is 79.86 %, which is in comparison with the level of the CRM from the point of view of customers (78.08 %) a little bit higher (o 1.78 %), from which we can assume that globally the perception of customers is at the same level or just a little bit better than the point of view of the company on itself.

Based on the fact that we received similar results from both approaches, meaning from the company as well as from customers, we state that the level of the CRM in the company is at a good level because to reach theoretical maximum it misses approximately 20 % which is not much but even this difference creates a space for improvements and mainly not in self-perception but from the point of view of customers.

To be able to define precisely the spheres or specific criteria in which the improvement is needed, it is necessary to carry out further thorough analysis. Determination of minimal and optimal values set by customers that will represent a minimum that customers are willing to accept and optimum, a value that means a maximum expected in given sphere and criterion will serve us in this matter. Achieving lower values that is the customers' minimum can greatly damage mutual relations and lead even to termination of cooperation. Optimal values set the limit achieving which will result in maximal satisfaction of customers and therefore exceeding it is not necessary. If the real values are lower than optimal, however still situated in a span formed by minimal and optimal values, there exist a space for improvement in a given criterion and utilization of which will mean achieving the optimal value.

5. Total evaluation

At this stage we focused on comparing the results from the evaluation of the level of the CRM from the point of view of the company and evaluation from the point of view of key customers.

We decided to do this comparison because we consider it necessary to look for and find mutual points of the evaluation but also the differences which could be incorrectly oriented when applying the CRM and finally they could function in a wrong direction and thus damage or even threaten the relations with key customers.

We decided to carry out the comparison in a simple way meaning that minimal, real and optimal values obtained from the determination of corresponding values of the CRM will be compared and that from the point of view of the company and key customers.

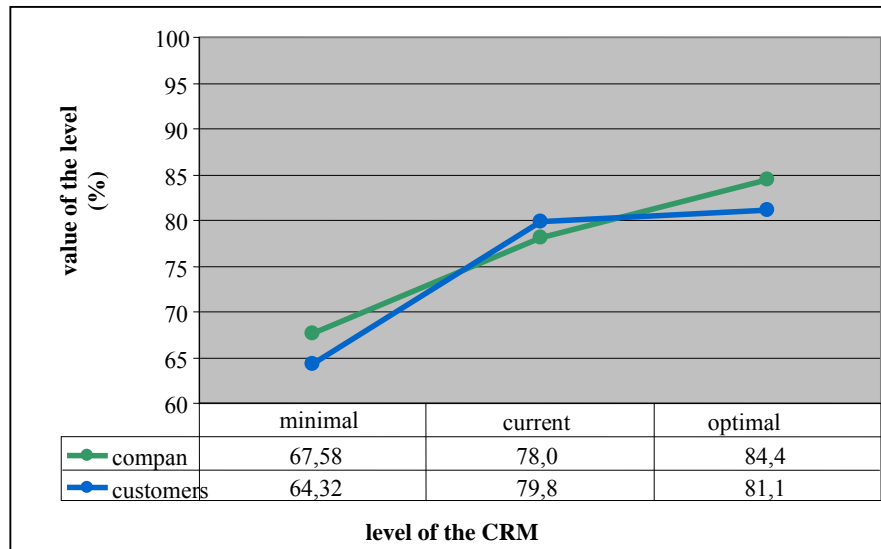


Fig. 2: Comparison of minimal, current and optimal level of the CRM

It is obvious from the comparison that customer values are lower however except the current value. Basically, we can state that this situation is good for the company. In fact, customers' minimum is lower than the minimum set by the company and therefore it is enough for the company to achieve the level of its minimum and it will still be in the zone which is accepted also by the key customers. On the other hand, lower value of customers optimum in comparison with the company means that the company will be more easily able to reach the value expected by customers and in case of reaching the optimum set by itself it will even exceed their expectations. We can say that customers' satisfaction will exceed the level which they consider as a real maximum.

What is positive is that the current value of the level of the CRM is according to customers' perception higher than how the company perceives it. However it is also important that from the current level of the CRM it is needed to increase the level of the CRM by 1.33 % to be able to reach the maximum expected by them. Knowing the importance of individual criteria for customers as well as their expectations while meeting each of them is a great precondition for reaching this optimal level of the CRM and that not only from the point of view of purchasers but also from the point of view of the sole company.

6. Conclusion

The changes to market environment caused by the development of new Technologies, the process of globalization and deregulation bring divergence in the market structure, increase the intensity of competition and significantly change the way of doing business. The growth of competition intensity, the similarity of basic products and lack of loyalty of customers force companies to look for new ways of getting a competitive advantage and thus create a more unique, valuable offer for customers than the competition brings. To keep the competitive advantage in a global economy it is highly important to understand specific needs of each member of a supply chain and also implementation of modern technologies into a business process in a way that it will be possible to effectively manage all the market needs.

This situation forces companies to seek the way to ensure the returns from each investment more quickly and how to reach a great flexibility extent. It requires permanent detection and creation of opportunities for consolidating the relations with customers. Nowadays, companies are set in different phases of development

towards customer-oriented thinking, they try to utilize the CRM for increasing their income and profits, lowering costs and increasing customers satisfaction. The implementation of the CRM into every sector is becoming a strategic necessity for the development and survival of individual business entities.

For the realization of the CRM in the company there should be a system of measuring the level and performance of the CRM ready beforehand as it is important to find out about its effectiveness. The process of measurement which was conducted in the company can be applied also in other companies, other sectors and can serve as a methodical procedure for measuring the level and performance of the CRM however each company needs to adjust the indicators to its own structure, an environment where the company is situated and needs which the management follows.

When adapting the system of measuring the level and performance of the CRM of a certain company it is necessary to consider the stability of competitive environment, forecast of future development, technological and organizational aspects. At the end it is important to emphasize that each system of measuring the level and performance of the CRM is considered to be a unique tool of an individual company.

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Socio-economic justice perception in Lithuania: individualism and collectivism models

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Abstract. *The article is based on the research results which summarize the evaluation of socio-economic justice perception for the citizens of Lithuania. The literature analysis suggests that the main objective of welfare state is a perfect social justice. Social justice is associated with the free market economy and the government's desire to reduce social risk of socially excluded groups: the unemployed, the disabled people, the poor families and so on. Since different social groups have different living conditions in Lithuania, perception and understanding of social justice is different. The authors conducted an empirical study searching for the answer to the following questions: what is the perception of social justice for different social groups and what models of social behaviour: individualism and collectivism are prevalent in Lithuania. The article was prepared by using comparative analysis of scientific literature, summarizing results of empirical study and the authors' insights on this topic.*

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Keywords: social justice, social values, citizens and customers justice perception.

JEL Codes: D63, P46 .

1. Introduction

The problem of perception and assessment of justice is one of the oldest and probably the eternal one in human history. However, the concept of social justice is a relatively recent concept, related to the free market outspread and development of the quality of human life. Since then within the public space, discussions and programs of political parties, social justice is related to human rights, human dignity and fair distribution of goods in the society as well as the quality of life (Social Justice in an Open World. The Role of the United Nations, 2006).

The scientific literature contains various definitions of social justice in dealing with philosophical, moral, psychological, political, economic and legal aspects. This paper presents the definition of social justice from values approach. Social justice may be defined as a cooperation of a person and the state creating and maintaining the unity of rights and duties in the legal status of a person (Vaišvila, 2000).

The framework of social justice is set by perceived value priority of public members. The various social groups are not equally sensitive to social justice that is why the understanding and perception of social

justice varies among them. Society may be divided and stratified in different ways. This paper examines two main social justice perception models: collectivism and individualism.

The purpose of this article is to investigate social justice perception from different points of view: individualism and collectivism in Lithuania. The article was prepared by summarizing the research findings, based on empirical study as well as the authors' study insights on the topic.

The research problem: What are the models of social justice perception in Lithuania? What values are dominant in the society: individualism or collectivism?

2. Social justice perception description and models in society

2.1. Social justice definition

The establishment of market economy and the expansion of market relations created a wide market of work force together with an additional social risk (Putman, 2000). Thus under the conditions of market economy a considerable part of the society, being capable from the legal point of view, may become incapable from the social point of view, and thus they may become eliminated from market relations – and consequently from culture and the society. A threatening situation appears for such individuals as well as for the society, because individuals, who have found themselves beyond the limits of the society, seek to return back to it, destroying social structures that impede their return. So in the paradigm of social justice investments in the return of such individuals back to the society and not the compensation for individuals' unrealised social rights are emphasized more.

Seeking to avoid negative outcomes of social exclusion the society must execute social justice towards such individuals, i.e. to acknowledge that the individuals have certain rights (e.g., a complex right to minimum subsistence) and to relieve the individuals from the performance of duties that create and maintain the rights (the society undertakes to perform the rights). In order for this relief from the duties to be legal and compulsory for the state, it should be consolidated by a law, thus ensuring legality, obligation as well as stability of such help, at the same time separating it from the episodic character of charity. So the concept of social justice is related to the guarantee that each individual will have the same possibilities for self-realisation as all other members of the society (Sen, 2009; Welzel, Inglehart, 2010).

So social justice, as much as it is not subject to the directly comprehensible unity of rights and duties, stems not from an individual's right but only from a legitimate interest, from the society's goodwill, social solidarity (Vaišvila, 2009).

Social justice conception is important for every member of the society. The concept includes ideas of justice and injustice, and everyone interprets them based on their perception of the values and experiences. Social justice generally refers to the perception point of view, the existence of a social security system for all members of the public fairly and impartially. Justice perception often touches on multi-level questions:

- Decision-making power: who makes decisions and who must comply with them?
- Division of labour: who has to make this work, when and how?
- Created goods and services breakdown: how resources, opportunities, awards, position, punishment, and other things that relate to society's economic, social, physical and psychological well-being to be distributed in society?

Every modern society is faced with these problems and possible solutions are offered. In order to solve the problem there is a need for sustainable social coordination. Looking at the different societies implemented the concept of social justice can be seen sweeping the problems of organization, coordination

and range of solutions. In turn, the different solution methods that public moral changes with different perceptions of justice or injustice and assessments. Social justice perception can vary dramatically depending on what is the best and is based on: what moral views, values, existing socio-economic system, historical circumstances. Social justice perception especially amplified changing socio-economic system type and has the potential to cause public conflicts.

2.2. Social justice perception

Justice perception is determined not only by values, but also by other structures: beliefs, experience (experience), opinion, understanding (see Figure 1). All of these terms refer to the cognitive process, the individual's efforts to give meaning, to assess the situation they are dealing with and adapting social norms. People rely on their own values and beliefs to form their own opinions about the situation, they are correct. Thus, opinions (decisions) can be attributed to the normative assessment of justice, which determine what is or should be in the right situation. This is seen as a situation maybe different depending on the people's ideological stereotypes, values and beliefs. Thus, these estimates may not match the reality, but also depend on whether the public is the political spectrum, left or right, and how to separate the way the individual accepts or rejects the ideology. Situation analysis is usually filtered through ideology or social group values. In addition, the appreciation and understanding is influenced by media.

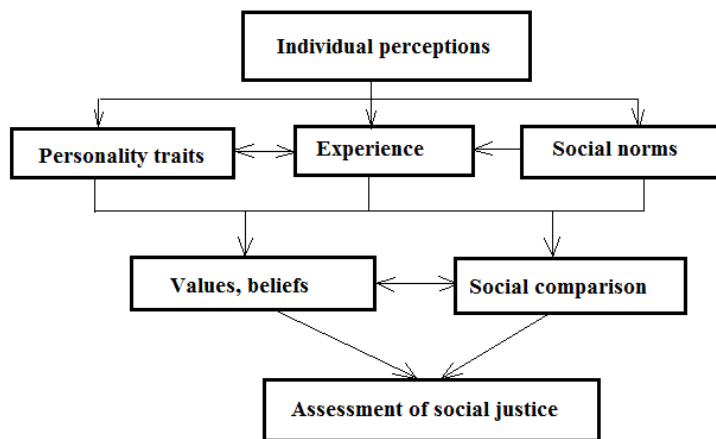


Fig.1. Justice perception conceptual model (created by the authors)

All cognitive justice perception elements (Figure 1.) are related to each other. Existing equity assessment depends on the gap between the perception and values and beliefs in size. The greater the difference between how people perceive and evaluate the correctness of their ideas about justice, the more stringent evaluations of justice become. As experience shows, it is difficult for people to live where their perception of the current world does not match their conception about what it should be. Therefore, they can adapt their normative provisions so that they 'fit' perceptions. In other words, according to what people perceive as "current", they can adjust what "should be" (Marshall et al., 1999). Earlier modern philosophers and economists had unanimous opinion that every individual has his own unique and constant set of priorities.

However, recent studies did not confirm this view, on the contrary, it was revealed that the preferences that individuals express both use some of the aspects of the institutional context function (Frohlich and Openheimer, 1999).

As can be seen from the conclusion of a conceptual understanding of the justice model (Figure 1), Social justice values and beliefs influence is multifaceted and complex. Due to its complexity, the concept of social justice requires the disclosure of people's priorities and choices, which cannot be obtained solely from theoretical considerations. Thus, the set of values and beliefs and their impact on every society can be judged only after extensive empirical research. However, there are areas where only empirical studies cannot reveal the whole picture. This applies to individuals' attitudes and it causes the formation of an informed choice and methods.

One of the well-known social justice perception models was proposed by Caldwell (Caldwell et al., 2002). In this model, the actual behavior is individually and subjectively formed as a private intermediate lenses (filters) (Fig. 2).

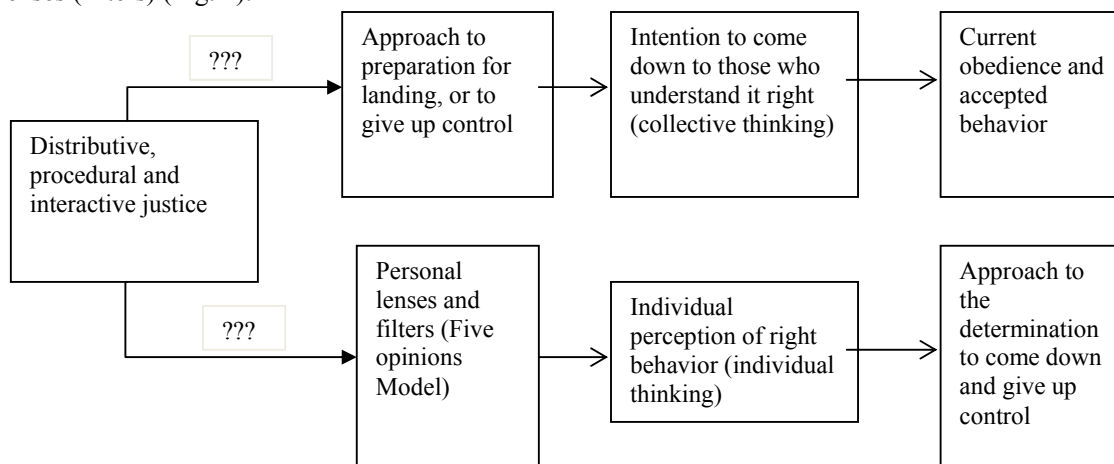


Fig.2. Subjective justice perception model (according Caldwell, 2002 and Fishbein, Ajzen, 1975)

2.3. Individualism and collectivism models

The theoretical level often considered individualistic and community groups (collectivism) social justice perception vision (Sor-Hoon Tan, 2005). For this reason, further examination of the citizen and the consumer perception of social justice will be two distinguished citizens and consumers to meet the concept: individualistic (I) and the collectivist (K). Individualism-collectivism often considered a cultural point of view, these guidelines describe the common values, beliefs, norms and roles (Trianda, 1995). Collectivism is associated with a tendency to unconditionally see themselves as a group, and the recognition of group interests prevail. The collectivists expected that he subjugated the interests of their group interests and collective good. In addition, because the collectivists define themselves as part of their group (Markus, Kitayama, 1991) are seen as the greatest value of interpersonal relationships and group harmony (Trianda, 1995). Collectivists understanding and behavior shaped by their group-related information. In contrast, individualists are most worried about their individual interest. Individualistic paying attention primarily to the personal effects and benefits, not to the group's interests. For example, individualists are characterized by the question "what's in it for me?" Individualists see themselves as independent beings and independence of the group rather than their values or relationships with others (Markus, Kitayama, 1991).

By summarizing, the individualistic motivation of personal benefits and independence. At the same individualistic values, emotions, beliefs, behaviors are formed distinguishing themselves

as relevant information. Studies (for example, Earlye, 1994; Earlye, Gibson 1998) reveal a different individualists and collectivists information perception concept. Analyzing information and evaluating results of the benefits they place different emphases. Social relations, as elsewhere, the individualists' main interest is personal. Thus, a situation they tend to evaluate positively if it satisfies their personal interests, regardless of the fact that it is neutral or harmful to the collective which they belong. Accordingly, for the collectivists it is a favorable outcome if they are useful for a group, even if they are neutral or harmful to themselves. Unlike perceived individualists and collectivists social justice values are conditioned by different cultural values (Choi, 2003).

Table 1. Individualism and collectivism features

Individualism and collectivism		
Type	Collectivist	Individualist
Features	Collectivity	Individualism, private property
	Justice for All	Justice for oneself
	Trust in authority (government)	Trust in market regulation
	Altruism, group interests prevail	Selfishness
	Group (collective) benefits	Personal benefits and independence
	Citizenship as a desired activity	Citizenship as a status
	Public life	Privacy Policy
Rights	Group interests of the proactive	Civil, political, legal and social rights of the individual
	Freedom and the conditions of possible activities	The right to personal benefits
Responsibilities	Act in the interests of the group	To act according to their interests, to develop individuality
	Socially forced civic virtues maintained fraternal responsibility	Respect the rights of others
	Working together to keep the system created	According to your own preference of civil virtue-based personal accountability and the conjuncture

Table No.1 shows that individualists and collectivists properties shows that the personal benefits are more important for individualists than collectivists, as individualists share information directly with you, and collectivists to connect with him through the prism of the interests of the group.

3. Empirical research methodology

A representative survey was conducted in Mykolas Romeris University, Vilnius , Lithuania in the Faculty of Economics and Finance during 25 February- March 1, 2013. A number of 238 graduate students of social sciences were questioned. The questionnaire was made out of 12 individualism/collectivism value questions, 16 (macro/micro-level) social values questions and also 10 distributive, procedural and interactional justice questions measured by a five-point Likert scale.

The aim of the empirical study is to reveal the young people's perception of social justice from the point of view of individualism and collectivism. The following three hypotheses, based on aim of the research, were formulated:

Hypothesis H1: collectivists perceived social justice as the benefits of the whole group over the possible personal benefit.

Hypothesis H2: individualists perceived social justice by focusing on their personal interests and needs.

Hypothesis H3: collectivists enjoy the dependence to the public and they do not want to change it.

Hypotheses have been checked by using dispersion analysis of variance method (ANOVA). This method is a procedure designed to test the hypothesis that K is equal to the sample averages, $K \geq$ second dispersion analysis of variance ANOVA comparing samples or groups of averages in order to deduce the existence of differences in the population averages.

ANOVA procedure includes two types of variables: independent and dependent. The independent variables (ordinal or nominative) selects and controls the investigator (test case statements, 8.4), and the dependent variable (continuous) is the result of manipulation of the independent variable. The main result of ANOVA - F-test, which allows checking the hypothesis that more than two quantities are equal to the population mean (Fisher, 1990):

$$F = \frac{s_A^2}{s_w^2} \quad (1)$$

Here s_A^2 is the deviation of the sample mean, o s_w^2 the observations within the sampling variation.

Statistical hypothesis:

$$H_0: \mu_1 = \mu_2 = \dots \mu_K$$

$$H_A: \mu_i \neq \mu_K, \text{ kur } K - \text{ number of groups.}$$

ANOVA test is based on the assumption that the populations, from which the samples are taken, distributed by the normal law and have the same variances. In practice, ANOVA test is relatively resistant violations of normality assumptions, but sensitive to differences in population variances. Violation of equality of variances assumptions has a significant impact on the reliability criteria.

Assumption of homogeneity was checked by Levene F test. When equality of variance assumption is not met, Brown-Forsythe and Welch criteria should be applied as alternative variants of the F statistic. As Welch criteria is stricter heterogeneous variance, we applied Welch criteria. The study was used in 5 per cent. ($\alpha = 0.05$) level of significance.

4. Empirical research results

The purpose of the study was to determine the relationship between individualists and collectivists. To that end, there were two types of statements: A) the collectivists of nusttaymui Q1: "A man must sacrifice HIS free time and register to participate in social activities for the public welfare and Q2:" If personal goals do not coincide with society's goals, they must be conformed to the goals of society ". The results show (Figure 3.) that only a 12% of respondents give priority to public purposes.

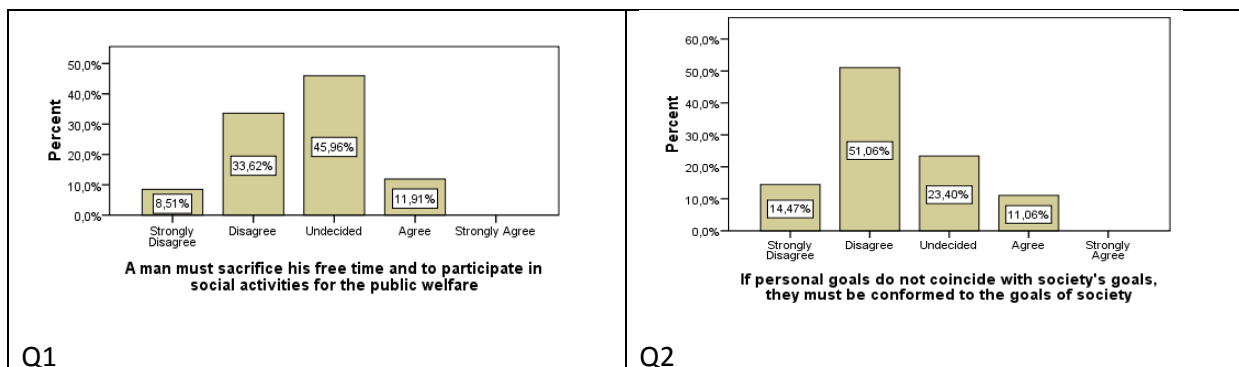


Fig.3. Relationship between individualists and collectivists

The goal of the following examination was to affirm the individualistic approach:

- A) Q7: "The most important thing for a man is to have no restrictions on unfettered personal freedom of action" ir Q8: "The purpose of human freedom is to create the best possible conditions for meeting the personal requirements"

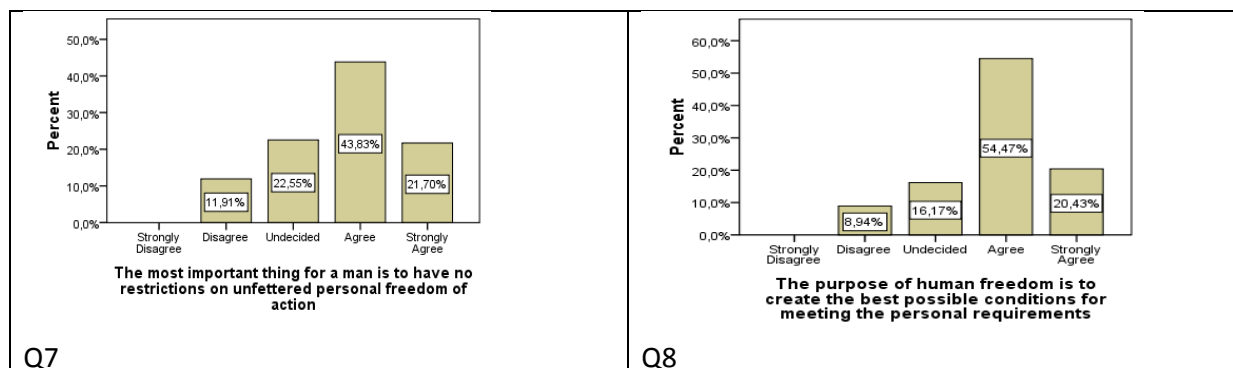


Fig.4. Individualistic values

As shown by Figure 4 as much as 65% bright young people give priority to the individualistic concept. Perhaps the strongest statement of individualism reveals that: "The purpose of human freedom is to create the best possible conditions for meeting the personal requirements, some as much as 75%. This assertion is supported by young people. This confirms earlier results where only about 12 p. respondents chose the collective values. Thus, we can assume that about 30% respondents are completely undecided.

However, further research shows that the respondents, most of which expressed individualism seemingly not consistent. Assessing the distributional and procedural fairness preferences are sometimes given to individualism - sometimes collectivism. This might be influenced by a small volume of the sample (n = 228). However, it may be that respondents apparently formed over the environment or the media than deliberate. An additional statement was made, important collectivists-individualistic values priorities. This statement reveals the relationship with the public, i.e. youngster feel 'I belong to the public': "I do not feel lonely because I am part of the Lithuanian society, my intimate community" (Figure 5).

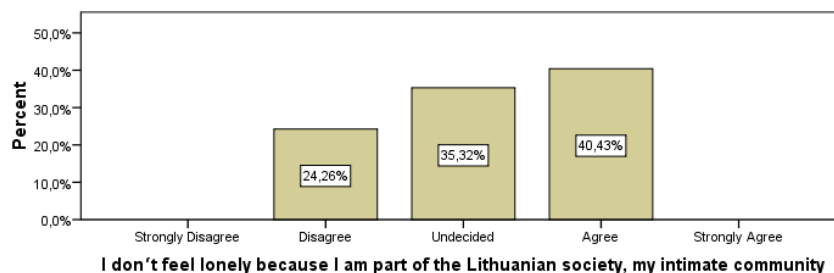


Fig.5 . Dependence to the society value

The study showed that it is the statement "I do not feel lonely because i am part of the Lithuanian society, my intimate community" that best illustrates the differences between individualists and collectivists. Interestingly, although the trend charts can be seen between this statement and prior statements, the statistical analysis does not allow the strictly approved by the (test was used for the chi-square test).

However, analysis of variance showed that it is the sense of belonging to society the best way the views in the distribution of justice. For example, in response to the statement "The most important thing for people is to have what THEY need, even if it would mean That Those who earn more than Should need to give to others (Fig. 6). The study used the ANOVA method of analysis of variance.

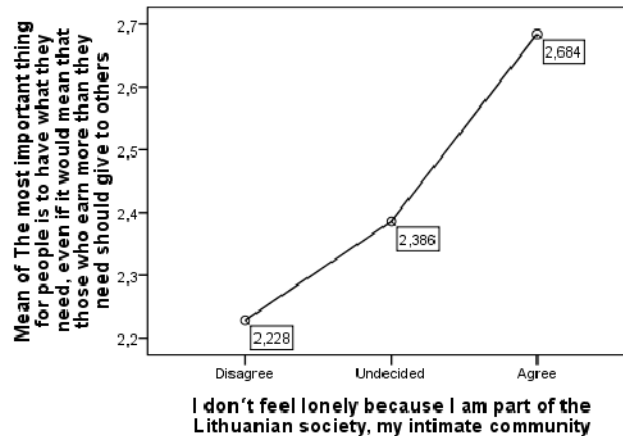


Figure 6. Collectivists-individualists connection with the distribution of justice (ANOVA, $F=4.6$, $p=0.01$)

Is a feeling that the youth of the community have an impact on the satisfaction of living environment? For this purpose we have investigated the relationship between statements: "I do not feel lonely because I am part of the Lithuanian society, my intimate community and satisfaction with the environment I enjoy my everyday living environment" and "I'm not satisfied with the current Lithuanian environment and I would like to leave." Studies have shown that there are differences in the averages: in the first case, $F = 2.9$, $p = 0:05$, the second - $F = 3:35$, $p = 0:04$. Averages chart given in Figure 7.

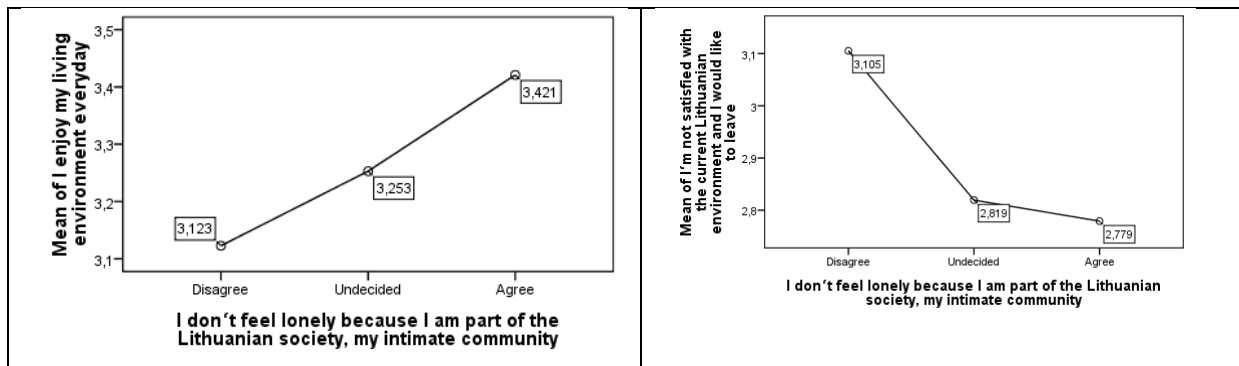


Fig. 7 Relationship between a society, life satisfaction and the desire to change the living environment

Thus, the study showed that the most prominent distinguishing feature of individualistic and collectivists is the sense of belonging. People who feel belong to the public and the environments are more satisfied with life and less willing to change the living environment.

5. Conclusions

The results of the research on social justice perception in Lithuania in collectivism and individualism approach have showed that:

1. The 21st century advancing in technology and with higher urbanization rates began to emerge in Lithuania as for the rest of the world with new features of the society. Individualism and the pursuit of personal wealth is observed increasingly in Lithuania. Development of communication technologies and globalisation processes of economic success leads to information and knowledge society. Therefore social welfare and an egalitarian distribution of social justice ideas are less observed, along with the changing economic and cultural characteristics and social relations.

2. Individualists primarily are seeking the personal benefits, paying less attention to the group's interests. Individualists see themselves as independent beings and independence of the group rather than their values, or relationships with others. Thus, we can say that the main individualistic characteristics are motivation for personal benefits and independence. Individualism encourages consumerism and commercial approach to the social and natural environment. Individualistic self-interest as to the feel greater pressures than collectivists.
3. Collectivism is associated with a tendency to see themselves as a group, and the recognition of group interests is prevailing. The collectivists expected that he their group interests is collective good. In addition, as collectivists define themselves as part of their group, they are seen as the greatest value of interpersonal relationships and group harmony. Collectivists understanding and behaviour of social justice is shaped by their group-related information. Collectivists, on concern the group's performance, often working harder than they work, being alone.
4. The empirical research has showed that only a 12% of our research respondents give priority to public purposes and as much as 65% bright young people give priority to individualistic concept. But still they are not fully consistent of this approach. Thus, the study showed that the most prominent distinguishing feature of individualists and collectivists is the sense of belonging. People who feel belong to the public and the environment are more satisfied with life and less willing to change the living environment.

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Wine tourism, a possible advantage of the Timis County

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Abstract: *Tourism has known along its development multiple types and forms. Their appearance was influenced by the existence of natural and anthropic tourist resources and by the potential tourists' motivation.*

Wine, considered the „Gods' liquor”, has its story, and through wine tourism people can know it. The Timis County has wines well-known at national and international level, and the possibility of visiting a vineyard, a winery and tasting the local wines can attract visitors. Wine tourism can contribute significantly to tourism development in this county, which is why I tried to highlight here the main points of interest.

Key words: tourism, wine tourism, wineries, visitors.

JEL codes: L66, L83.

1. Introduction

Tourism is the activity whose development was influenced by the existence of natural and anthropic tourist resources, but also by the potential tourists' motivation. Motivation is the main element that influences the buying decision of a tourist product and its consumption. It is personal and subjective, determined by a series of endogenous (psychological) and exogenous (environmental) impulses. Tourists' motivations are varied and multiple, from their need to recreation to that of knowledge. All these generate a series of types of tourism:

- leisure;
- recreational;
- cultural;
- sports;
- ethnic;
- business;
- wine;
- technical;
- scientific.

2. Wine tourism

The form of tourism that has as purpose the visit to wine regions and wine tasting is known as wine tourism.

According to Getz, Rawling, Carlsen and Anderson “wine tourism is a form of consumer behaviour based on the attraction of wine and wine regions, a development and marketing strategy of the wine industry and destinations where vineyards and wine experiences or attractions are dominant.”¹

The main elements of wine tourism are the village and the wine, as well as the wine cellars in the vineyards, the accommodation facilities, the tour-operators, and the gift shops.

Wine is defined as “a quality product having a high degree of symbolism and whose consumption means a detailed ritual.”²

Through the Regulation 143 of 1999 the EU assumed the idea of the International Organization of Vine and Wine (founded in 1924) according to which wine is a beverage obtained from the total or partial alcoholic fermentation of crushed grapes and from the grape must whose alcohol content cannot be lower than 8.5% of its volume.

Table 1 Types of wine according to grape variety

Type of wine	Grape varieties
table	mass production;
superior quality (minimum alcoholic strength 10,5% in volume):	with superior technological features;
<ul style="list-style-type: none"> - with controlled origin name; - with well-known geographic indication; 	
<ul style="list-style-type: none"> - special; - sparkling; - champagne; - flavoured; - liqueur. 	obtained from musts or existing wines.

There is also a wine classification that takes into consideration the sugar content, which can be seen in table 2.

Table 2 Types of wine according to the sugar content

Type of wine	Sugar content
dry;	up to 4g/l;
medium dry;	between 4- 12g/l;
medium sweet;	between 12- 50g/l;
sweet	over 50g/l

¹ 1.Getz, Donald, Ross Dowling, Jack Carlsen and Donald Anderson, Critical Success Factors for Wine Tourism, International Journal of Wine Marketing, 1999, 11,3;

² Olsen, Janeen, Thompson, Karen, Clarke, T.K., Consumer Self Confidence in Wine Purchases, International Journal of Wine marketing, 2003, 15,3;

Wine variety makes that wine consumers be female as well as male, more or less connoisseurs. From these consumers we can select those who practice wine tourism, they having multiple motivations.

Table 3 Types of wine consumers and tourists motivations

Types of wine consumers	Tourists motivations
- conservative (has medium knowledge about wines);	- tasting;
- image-oriented (seeks knowledge about wines);	- purchasing wines from the winery;
- basic (purchases sure marks)	- admiring natural and authentic rural landscapes;
- experienced (has great knowledge about wines);	- knowing the local customs and traditions;
- social (fun-oriented consumer)	- meeting their favourite wine producer;
	- knowing the wine processing technologies;
	- recreation;
	- leisure.

Table 4 Categories of tourists that practice wine tourism

No	Category of tourists	Motivations	Activities of interest	Means of transport	Accommodation	Sojourn duration
1.	Connoisseurs	- wine tasting; - wine purchasing; - events celebrating;	- wine tasting; - wine purchasing; - discussions with the producers;	- car (many times rental);	- pension	- between 3 - 7 days
2.	Indulgents	- tourists who seek quality sojourns;	- wine tasting in wine cellars; - local cuisine; - accommodation and health care facilities;	- own car	- pension	- between 2 – 8 days;
3.	Seekers	- new experiences; - knowing the area's history and cultural heritage;	-wine tasting in wine cellars; -visiting art galleries, museums, crafts workshops; -history of	- own car	-camping site, caravan parking places;	- between 4 – 10 days

			gastronomy; - cycling			
4.	Those visiting relatives	- visiting relatives in the area and accompanying them;	- wine tasting in wine cellars; -going in cafes and restaurants;	-own car; -bus;	- hotel; - motel;	- between 2 – 8 days;
5.	Discoverers	- discovering an area; - discovering a wine’s properties.	- wine tasting in wine cellars; - visiting vineyards producing quality wine.	-bus or other means of transport provided by the organizing tourist agency	- hotel; - motel.	- between 2 – 19 days

Adapted after: *South Australian Tourism Commission, Wine Tourism Strategy 2004- 2008, Fresh Opportunities for the Home of Australian Wines*

The development of wine tourism supposes the existence of an infrastructure and means the promotion of the respective area.

Table 5 Elements necessary to wine tourism and its results

Elements necessary for tourism development	Results of wine tourism development
- existence of modern access roads;	- sustainable development of the area;
- construction of spaces meant for wine tasting;	- improving the image of local wines;
- construction of spaces meant for wine selling;	- increasing wine sales;
- opening of public food facilities for serving traditional culinary products;	- attracting new segments of consumers;
- opening accommodation facilities;	- promoting local wine and traditional culinary products;
- construction of spaces for selling crafts and souvenirs.	- maintaining traditions and customs.

Tourists practicing this form of tourism can opt for:

- itineraries like the “wine route”;
- carriage or bike rides through vineyards;
- vineyard sojourns;
- visiting vineyards with wine tasting in the wine cellars;
- visiting viti-vinicultural museums;
- visiting wine houses;

- participating in feasts and festivals;
- participating in wine exhibitions and fairs;
- participating in initiation courses in the secrets of wine.

Wine producers support wine tourism development considering it a niche marketing strategy. Presentation catalogues of wineries and wines in the region, the collaboration with tour-operator tourism agencies, the creation and updating of a webpage, participation in specialized fairs and exhibitions would be welcome for

3. Vineyards in the Timis County and wine tourism

The Timis County is located in the western part of Romania, bordering Serbia and Hungary, having an area of 869,665 ha (3.6% of the country's total area), of which 702,066 ha is agricultural area, that is 80.7% of the county's total area.

The climate is temperate with sub Mediterranean influences, which helps cultivating the vine.

An evolution of the areas cultivated with vine is presented in table 6.

Table 6. Evolution of areas cultivated with vine in the Timis County

Year	1990	1995	2000	2005	2010	2011
Vineyards and vine nursery (ha)	5757	4987	4313	4354	3871	3882

Source: [www.insse.ro/Baze de date statistice - TEMPO-Online serii de timp.htm](http://www.insse.ro/Baze%20de%20date%20statistice%20-%20TEMPO-Online%20serii%20de%20timp.htm), AGR101A

A continuous decrease of these crops between 1990 and 2010 can be noticed, mainly as a result of land retrocessions and grape stalks cutting. Another cause of decreases is the EU recommendation to replace hybrid soils and plant vine varieties accepted in the community.

In the Timis County there are vineyards and wineries in Recas, Buzias-Silagiu and Petrovaselo.

Vine cultures in Recas are on the last hills of the Lipovei Plateau, with terrace steps at an average altitude of 180m, the one in Buzias are on the Silagiu Hill, at an average altitude of 324m, and those in Petrovaselo are also on the last hills of the Lipovei Plateau at an average altitude of 170m.

The wines produced in these wine centres are varied: white, red and rosé (table 7).

Table 7 Wineries in the Timis County

Name of winery	GPS coordinates	Type of wine	Wine variety
Recas (S.C.Cramele Recas S.A)	45.826975N, 21.525908E;	-Cabernet Sauvignon; -Burgundy; -Merlot; -Traminier; -Cadarca; -Italian Riesling; -Feteasca regala; -Creatia; -Mustoasa; -Muscat Ottonel;	-Sole White Brut (sparkling); -Cabernet Sauvignon- Castel Huniade; -Feteasca Regala – Castel Huniade; -Chardonnay- Castel Huniade; -Merlot-Pinot Noir- Castel Huniade;

			<ul style="list-style-type: none"> -Mustoasa-Cocosul dintre Vii; -Chardonnay- Cocosul dintre Vii; -Syrah-Cocosul dintre Vii; -Feteasca Neagra-Cocosul dintre Vii; -Cabernet Sauvignon-La Putere; - Feteasca Neagra-La Putere; -Merlot-La Putere; -Chardonnay Sole-barrique; -Feteasca Regala-barrique; -Sauvignon Blanc Sole; -Solo Quinta; -Cuvee Uberland; - Roze Castel Huniade; -Schwaben Wien;
Val D'Or	45.621001N, 21.622081E;	<ul style="list-style-type: none"> -Chasselas; -Merlot; -Cabernet Sauvignon; -Burgundy; 	<ul style="list-style-type: none"> -Kapellenwein Gutedel (house wine); -Cabernet Sauvignon;
Petro Vaselo (S.C.Vigna S.R.L)	45.826975N, 21.576049E	<ul style="list-style-type: none"> -Merlot; -Pinot Noir; -Cabernet Sauvignon; -Chardonnay; - Italian Riesling. 	<ul style="list-style-type: none"> -White of PetroVaselo; -Red of PetroVaselo; -Ovas; -Otarnita; -Melgis; -Maletine; -Bendis (sparkling).

Some of the Recas and Petrovaselo wines received many valuable national and international awards.

Visits to Recas and Val D'Or wineries can be done with a prior appointment, while in Petrovaselo the opening hours are from Monday to Friday between 9.00 a.m. and 5.30 p.m., other visits can be done with an appointment 7 days before.

For wine tasting there is also a possibility in Timisoara at "De Savoya" wine shop whose GPS coordinates are 45.756674N, 21.228314E, and where all those interested are waited from Monday to Saturday (Monday-Thursday 11-23; Friday-Saturday 11-24).

Another attraction for tourists interested in wines and viniculture is in Teremia Mare, in Cultural Centre no. 74 where the Wine Museum is.

Interesting wine-related events are:

- VINVEST annual exhibition, organized in Timisoara in April;
- The Wine Festival, Timisoara, October;
- The Wine Feast Recas, October;
- Papricas and Wine Festival, Buzias, October.

They are located at a short distance from Timisoara, under 100km (table 8).

Table 8 Wineries distance from Timisoara

Name of destination	Distance from Timisoara (km)
Recas Wineries	26
Val D'Or Winery	37
Petro Vaselo Winery	35
Wine Museum in Teremia Mare	68

Accommodation facilities are available mostly in Timisoara, but also in Buzias and Izvin (4km away from Recas). Accommodation in agrotourist B&Bs close to the wineries is not possible for the time being since there are no such accommodation facilities.

Due to short distances from Timisoara, a leisure or knowledge excursion for local people or business people can be made effortless.

The Recas Wineries have three tasting rooms with a maximum capacity of 150 seats. In 2011 they have recorded, according to the sales manager, 10.000 tourists eager to know the production process of wine and to taste the "Gods' liquor", an increase of 20% compared to 2010. According to their origin country, half were foreigners, the majority coming from Austria and Germany. Investors intend to open an agrotourist B&B in Recas in order to develop the tourism activity.

The activity in Petrovaselo started only in 2002, and the Petrovaselo Winery was opened in 2011, which is why there is no data about tourists who were there.

At the Val D'Or Winery, which belongs to the "Heiner Buttenberg" foundation, tourists can also enjoy traditional food, especially the paprika stew cooked in their kitchen. Unfortunately, no access to the number of tourists was possible.

4. Conclusions

Romania is known internationally for its quality wines. In the Timis County, in its vineyards, there is the possibility to develop wine tourism, only the creation of various tourist packages and a more aggressive promotion being necessary. Rides with a carriage or bike through the vineyards are not yet included in the offers. Taking into account that the population in the wine areas is Romanian, German and Serbian, a great interest would be for the local cuisine, the traditions and the specific traditional costume.

This form of tourism can be of interest to Romanian tourists from the region and the country, but also to foreigners.

Wine tourism can address adults as well as pupils, but without wine tasting for the latter ones.

It is known that this county is not among the first as tourist destination, therefore niche tourism, as wine tourism is perceived, could attract more tourists and increase the income in this field.

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Towards a sustainable well-being

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Abstract. *Given the need of a new economic paradigm for the achievement of a world of sustainable well-being, this paper presents the main findings from the literature on sustainable well-being. We try to identify a few approaches of measurement, highlighting strengths and weaknesses. We analyzed Romania's position in the global context in terms of happiness index. Are sustainable well-being indicators a good guide for policy-making? Also, the paper discusses the role of education in ensuring the sustainable well-being.*

Keywords: sustainability, well-being, happiness, positive education.

JEL codes: D6, Q01, Q56.

1. Introduction

The world economic and financial crisis of 2007 has made it abundantly clear: the free market cannot be relied upon to maximize social welfare. Free markets can be very efficient for allocating resources in certain types of markets. The promise of free-markets holds when certain conditions are met. However, free markets have proven to be poorly adapted to protecting the natural world, the basis of our collective wealth. In the context of new challenges, the concern over natural resources requires a sustainability perspective. Natural resource depletion and the loss of biodiversity are critical issues for long-run sustainability. The issue of scarcity should become a counterpiece of economic analysis.

Well-being theory is an area of economic theory based on the assumption that economic development must proceed from a population criterion collective good.

The concept of well-being implies a standard of living, both at normal individual and society as a whole. Ensuring a fair standard of living presumes a standard of living compatible with human dignity, which is measured by the goods and services that people have and the conditions under which people live.

Well-being is an essential component of the human condition, it reflects a system needs correlated with socio-economic context in which everyone fits in terms of ownership, level of consumption, material and financial status, social and cultural hierarchy. Thus, the welfare state appears as an aspiring individual optimum by his way of producing, saving and consuming.

The main problem is to emphasize the well-being of a number of situations which would be the best possible social solution. In a broader sense well-being depends mostly on the level of utility (satisfaction) obtained by each of its members.

Well-being is generally viewed as a description of the state of people's life situation (McGillivray

2007, p. 3). Often, well-being has been linked with the economic results of a country, measured by its Gross Domestic Product (GDP). However, GDP does not offer a good image of human life (it does not cover all the aspects of human life) and it was widely recognized that new measures were needed. New indicators and datasets were created to capture social and environmental aspects that GDP failed to incorporate. This included indicators measuring education achievements, health outcomes and environmental degradation. More recently, well-being research incorporates findings from psychology and behavioral sciences.

2. Objective and subjective well-being

In general, well-being measures can be classified into two broad categories: *objective* and *subjective* measures. The first category measures wellbeing through certain observable facts such as economic, social and environmental statistics. People's well-being is assessed indirectly using cardinal measures. On the other hand, subjective measures of well-being capture people's feelings or real experience in a direct way, assessing well-being through ordinal measures (McGillivray and Clarke 2006; van Hoornt 2007).

However, there is widespread agreement that well-being is multidimensional, that it counts all aspects of human life. Thus, different approaches have been taken to go beyond the GDP measure, conceptualizing well-being in a more holistic way.

Yet a third approach to go beyond GDP is to replace GDP by constructing composite measures that would capture the multidimensional aspect of well-being. These measures are usually constructed using different components, weighted in some way to form a single index. One of the first attempts to construct a composite index of well-being was in 1979 when David Morris from the Overseas Development Council created the Physical Quality of Life Index (PQLI). This index combined infant mortality, life expectancy and adult literacy (McGillivray 2007; Stanton 2007; Sumner 2006). Building on the earlier work of William Nordhaus and James Tobin, Daly and Cobb's Index of Sustainable Economic Welfare (ISEW) presents a monetary measure of social welfare that accounts for: the consumption of private goods and services bought and sold on markets; the social costs of inequality; the value of non-market production (household work, family care, and volunteer work); environmental degradation; "defensive expenditures" (i.e., the cost of protecting oneself from environmental harms); net capital investment; and natural resource depletion.

Focusing on U.S. data, Daly and Cobb found that trends in the ISEW closely paralleled changes in GDP per capita in the 1950s and 1960s. In later years, however, the relationship between income and welfare became de-coupled. While GDP per capita grew at a rate of 2.2 percent per year between 1970 and 2000, an updated version of the ISEW remained virtually unchanged.

Another example is the Human Development Index (HDI) created in 1990, combining income per capita (in PPP terms), life expectancy at birth, adult literacy and education enrollment ratios. The economic analysts of the 1980s had to face increasingly critical for human development approach was not explicitly linked to economic growth. Increase revenues and expenditures are not only results of development. It was recognized that a single dimension such as Gross Domestic Product is only an indicator of growth, expressed in monetary units and not a measure of human development which is multidimensional. Investments in health and education can not be added directly to GNP, but can add value to human capital and thus to contribute to the economy and social welfare.

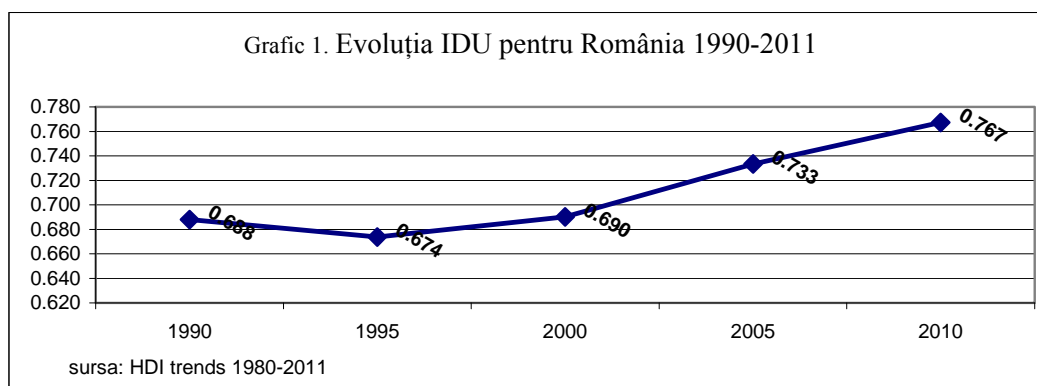
Mahbub Ul Haq (1934-1998), Pakistani economist with Indian economist Amartya Sen (1933 -), Nobel Prize laureate in 1998, played a key role in formulating development paradigm. They wanted to bring people into the center of the public agenda on development policy at national and global level, and the first Human Development Report was opened with the premise that: "People are the real wealth of a nation."

United Nations Development Programme (UNDP) published since 1990 “Human Development Report”. The report addresses the main problem, how to translate economic growth into human development. The main contribution of this report is to calculated year index, Human Development Index for 130 countries initially, subsequently reached 182 countries. HDI is a composite index that includes education, health, and living standards and it was the first serious attempt to asses the development that goes beyond the income dimension. In determining the HDI, four indicators for three areas are used. These are areas and indicators for human development and quality of life of the population:

- a. GDP, the new value created by the production of goods and services in the country, to express welfare (economic standard)
- b. life expectancy at birth
- c. the literacy rate of the population aged over 15 years and rates of school children and youth, the three educational levels: primary, secondary, university education.

Each index field is determined by year based on the values of those indicators and by referring them to the maximum and minimum recorded worldwide.

Let's look more closely, however, it has evolved over time in Romanian HDI after recalculations in 2011. We identify four periods, namely: 1990-1995 - HDI decreased from 0.700 to 0.687, with deteriorating rate school enrollment and GDP, 1996-2000 - recover lost value of HDI and reach 0,704; 2000-2008 there is a significant increase HDI (0.778 in 2008) 2009-2011 - stagnation HDI value.



Similarly, the Organization for Economic Cooperation and Development developed the Better Life Index—a composite of 11 broad topics that include housing, income, and jobs as well as quality of life (community, education, environment, governance, health, life satisfaction, safety, and work-life balance). The Index already covers the 34 OECD member countries with plans to expand to its partner countries including China, India, Indonesia, Russia, and South Africa.

Some countries make strides in development of their own national indexes to measure well-being. The UK is developing an index that measures both economic performance of the country and environmental and sustainability issues. Similarly, Canada has adopted the Genuine Progress Indicator, which starts with GDP but adjusts with other non-economic variables. In 2005, the tiny Himalayan nation of Bhutan developed the Gross National Happiness index, which takes into account health, culture, education, ecology, good governance, community vitality, and living standards—a broad way of assessing progress beyond pure GDP growth.

The New Economics Foundation (Marks et al., 2006) created the Happy Planet Index (HPI) to answer such questions as, “does happiness have to cost the earth?” In other words, can we live long and happy lives within the resource capacity of the planet? The first HPI incorporated national life satisfaction and life expectancy scores along with the Ecological Footprint of nations. Countries with high life satisfaction and life expectancy while maintaining a low Ecological Footprint were ranked at the top. The second HPI (Abdallah et al., 2009) determined that Costa Rica had the highest number of happy life years, nearly achieving a footprint referred to as “one-planet living,” that is, using the country’s fair share of the earth’s resources as opposed to consuming resources as if there is access to more than one planet. By the third HPI, Costa Rica remained at the top of the charts, while the USA’s high Ecological Footprint brought it to 105 out of 151 countries. Importantly, the HPI illuminated that if every country had a similar Ecological Footprint to the USA, it would require four planets to meet this level of consumption. Romania achieves a Happy Planet Index Score of 42.2 and ranks #75 of all the countries analyzed. Romania's HPI score reflects a relatively high life expectancy, relatively low levels of experienced well-being, and a moderately high ecological footprint.

In another report made by UNICEF, Romania occupies the last place in a ranking of child well-being in developed countries. For this study several social issues have been considered, including material comfort, health and safety of children. The report examines changes in the condition of children in the decade 2000-2010 in a total of 29 states, based on the average marks obtained in five dimensions of child well-being, taking into account 26 internationally comparable indicators. The Netherlands ranks first in this ranking, the only country that ranks in the top five in all dimensions considered: material well-being, health and safety, education, behavior and risks, housing and the environment. However, UNICEF report shows that there is a direct link between the well-being of children and GDP per capita. The Czech Republic has achieved a better result than Austria, Slovenia is better ranked than Canada and Portugal has a better result than that of the United States of America. After the Netherlands, four Nordic countries (Finland, Iceland, Norway and Sweden) occupy the top spots in the rankings well-being of children, while the last four places are occupied by three of the poorest countries considered in this top - Latvia, Lithuania and Romania, and one of the richest, USA.

The same report also shows how children perceive life satisfaction in the countries studied. Over 85% of children in the developed nations have a high level of overall life satisfaction; even in the countries at the bottom of the league, more than 75% of children placed themselves above the mid-point of the life satisfaction ladder. The Netherlands heads the league table of children’s subjective well-being with 95% of its children reporting a high level of life satisfaction. In the top five countries – Finland, Greece, Iceland, the Netherlands and Spain – approximately 90% of children reported a high level of life satisfaction in 2009/2010. Only in Poland and Romania does the ‘high life satisfaction’ rate fall below 80%. From the earliest years, the child’s sense of subjective well-being is intimately bound up with relationships, and particularly with parents and peers.

2.1. Subjective well-being: conceptual delimitation

Happiness was present in philosophical debates since the Greek classicism period. Of great influence was the dispute between the two concepts: Hedone and eudaimonia (Ryan and So, 2001). The first concept related happiness as pleasure - not only the senses, but also from Epicurus, mind (hedonistic moral theory). In the Nicomachean Ethics, Aristotle criticizes this view, claiming instead eudaimonia, that is living in agreement with the "true self" (daimon), opening path of ethical philosophies that happiness consists in the realization of human potential (Waterman, 1993). In psychology, these two orientations meet a strong revival in recent years, with recent branches of hedonic psychology, which includes the study of pleasant and unpleasant experiences, and general levels of existence different from states of consciousness (Kahneman et al. 1999), and of positive psychology, "the science of positive subjective experience, traits

positive individual, and positive institutions "designed to" improve the quality of life and prevent the pathologies that arise when life is barren and meaningless " (Seligman and Csikszentmihalyi, 2000).

Seligman (2007), positive psychology founder in the late 90's gathered around him a number of experts, who have joined forces in the study of happiness, including Sonja Lyubomirsky, Ken Sheldon and David Schkade. They offer us a "formula for happiness" (Seligman, 2007, p 77): $F = T + C + V$. In this formula F represents the degree of lasting happiness, T – range of genetic trends, C - life circumstances and V - factors that are under our control.

The author points out that we must distinguish between the happiness of the moment and lasting happiness. Regarding the concept: range of genetic trends, it is introduced into the equation stating that we inherit a sort of "guide" who guides us to a certain level of happiness or sadness, each of us has a predetermined range of genetic tendencies, a fixed level of happiness, inherited from the back. Life circumstances can change for the better state of happiness, but it is difficult and expensive to change.

In his book, *Theory of Happiness*, Jonathan Haidt (2008, p 128), take the positivists formula small changes: $F = PF + C + V$. The happiness you feel, says the author, is the sum which consists of the fixed point biological, plus living and voluntary activities.

McGillivray and Clarke (2006, p. 4) state that "*subjective well-being involves a multidimensional evaluation of life, including cognitive judgments of life satisfaction and affective evaluations of emotions and moods.*" Some economists use the phrase "subjective well-being" as a synonym for "happiness" but in psychology, happiness is a narrower concept than sustainable well-being (SWB).

Bruni and Porta (2007, p. xviii) discuss about differences between happiness and SWB. They point out that "*Psychologists distinguish among 1) life satisfaction which is a cognitive element; 2) affection, the affective element and 3) subjective well-being (SWB), as a state of well-being, synthetic of long duration which includes both the affective and cognitive component.*" Other explanations which they provide: SWB consists of four components i) pleasant emotions ii) unpleasant emotions iii) global life judgment (life evaluation) and iv) domain satisfaction (marriage, health, leisure etc). Happiness on the other hand, is a narrower concept than SWB and different from life satisfaction: although both happiness and life satisfaction are components of SWB, *life satisfaction* reflects individuals' perceived distance from their aspirations while *happiness* results from a balance between positive and negative affect. In this approach, SWB is a synonym of "being happy" (the Aristotelian approach of happiness as eudaimonia) whereas concepts such as "satisfaction" and "happiness" are considered "feeling happy" (a hedonic approach) (Bruni and Porta 2007, p. xviii).

Despite these differences, economists have used the terms "happiness" and "life satisfaction" interchangeably as measures of subjective well-being (Easterlin 2004). According to them, subjective well-being has a dual character: an affective component referred to as pleasure or happiness and a cognitive component referred to as satisfaction.

In particular, a distinction is commonly made between life evaluations, which involves a cognitive evaluation of the respondent's life as a whole (or aspects of it), and measures of affect, which capture the feelings experienced by the respondent at a particular point in time (Kahneman et al., 1999). In addition to the distinction between evaluation and affect, a number of researchers argue that there is also a clear eudaimonic aspect of subjective well-being, reflecting people's sense of purpose and engagement (Huppert et al., 2009). So, the elements of subjective well-being are:

- Life evaluation.
- Affect
- Eudaimonia (psychological "flourishing").

Life evaluation

The most commonly used measures of life evaluation refer to “life as a whole”. However, in addition to global judgements of life as a whole, it is also possible for people to provide evaluations of particular aspects of their lives such as their health or their job. In fact, there is good evidence that a strong relationship exists between overall life evaluations and evaluations of particular aspects of life. One of the most well documented measures of life evaluation – the Personal Well-being Index – consists of eight questions, covering satisfactions with eight different aspects of life, which are summed up using equal weights to calculate an overall index (International Wellbeing Group, 2006).

Similarly, Van Praag, Frijters and Ferrer-i-Carbonell (2003) use panel data from the German Socio-Economic Panel to estimate overall life satisfaction as a function of satisfaction with six specific life domains (job satisfaction, financial satisfaction, house satisfaction, health satisfaction, leisure satisfaction and environmental satisfaction), while controlling for the effect of individual personality.

The discussion behind the income–happiness relation is, to a large extent, driven by the so-called ‘Easterlin Paradox’ (Easterlin, 1974, 1995), which lies in the fact that within a country, at a given time, those with higher incomes are, on average, happier, while over time and in the long run, despite increases in income in developed countries, the average level of happiness has not increased significantly. E. Mentzakis, M. Moro (2009) have found the poor are more likely to be unhappy while the rich are more likely to be fairly happy. Absolute income buys-off unhappiness, but it does not seem to buy all levels of happiness. This can be explained by looking at relative income effects, through the inclusion of individuals’ subjective financial situation which captures one’s relative income position and clearly confirms the findings of the past literature. Another explanation of ‘Easterlin Paradox’, relates to the concept of time-shift effects, where high-income individuals tend to engage in less satisfactory activities. They are more likely to have jobs of high responsibility and to allocate their time to activities that are on average associated with more stress and tension, e.g. commuting, or less likely to spend their time in socializing, which is among the most rewarding activities in terms of happiness. Conversely, low-income groups might not have any difficulty in accessing these goods, explaining why a portion of the low-income group is likely to report the highest level of SWB.

Affect

Affect is the term psychologists use to describe a person’s feelings. Measures of affect can be thought of as measures of particular feelings or emotional states, and they are typically measured with reference to a particular point in time. Such measures capture how people experience life rather than how they remember it (Kahneman and Krueger, 2006).

Eudaimonia

In addition to life evaluations and affect, which focus on a person’s experiences (current or recalled), some definitions of subjective well-being found in the psychological literature include other aspects of a person’s psychological processes as well. In particular, there is a substantial literature focused on the concept of good psychological functioning, sometimes also referred to as “flourishing” or “eudaimonic” well-being (Huppert et al., 2009; Clark and Senik, 2011; Deci and Ryan, 2006). Eudaimonic well-being goes beyond the respondent’s reflective evaluation and emotional states to focus on functioning and the realization of the person’s potential. In developing the questionnaire on psychological well-being for the European Social Survey, for example, Huppert et al. (2009) characterize the “functioning” element of well-being as comprising autonomy, competence, interest in learning, goal orientation, sense of purpose, resilience, social engagement, caring and altruism.

3. Sustainable happiness

Sustainable happiness underscores the inter-relationships between happiness, well-being and sustainability. It has been defined as “happiness that contributes to individual, community, and/or global well-being without exploiting other people, the environment, or future generations” (O’Brien, 2010a) thus

differentiating it from “sustaining happiness” or “sustainable increases in happiness” (O’Brien, 2012).

Discussions of happiness and well-being are an ideal entry point for fostering sustainable lifestyles and policies for sustainable happiness and well-being. Happiness is at the heart of who we are and what we do, but in a consumer society where consumption and happiness are often entangled, individuals confuse the “path to the ‘good life’ as the ‘goods life’” (Kasser, 2006: p. 200). The lifestyles and consumption in the wealthiest nations are leading to environmental degradation that has the greatest impact on less affluent countries (Sachs, 2012). The HPI indicates that many of the wealthiest countries are exerting extensive pressure on natural resources and consuming more than their fair share of resources (Abdallah et al., 2009, 2012).

Thinley (2012) underscored the need for considering the links between sustainability and happiness: “Sustainability is the essential basis and precondition of such a sane economic system. An economy exists not for mere survival but to provide the enabling conditions for human happiness and the well-being of all life forms” (p. 64).

There is a major role for positive psychology to play in building further political will and bringing sustainability principles into everyday life. The concept of sustainable happiness within the field of positive psychology can be applied to foster sustainable behavior in addition to well-being in the broadest meaning of well-being, i.e. physical, emotional, social, spiritual, ecological well-being. Whereas we all have a natural desire for happiness, we are likely to lead more sustainable lives by becoming more aware that our well-being and pursuit of happiness is associated with the well-being of others and the natural environment (O’Brien, 2010a). Sustainable happiness disputes a common misconception that living sustainably will lower our quality of life. Rather, sustainable happiness invites opportunities to enhance our quality of life and contribute to individual, community, and global well-being (O’Brien, 2010a).

Education for the 21st century can promote positive education and positive schools by applying positive psychology in teacher education and contributing to curricula development. Students and society would benefit from greater attention to student wellness, illness prevention, and happiness skills for enhanced resilience (Seligman, 2011). This would be a progressive step forward but still grossly insufficient to foster the massive shift in values and behavior that are required to make a transition towards a more sustainable future—which ultimately impacts everyone’s well-being. Integrating positive psychology with sustainability education would introduce a comprehensive transformation in education, engaging students and teachers in a deep understanding of how to live and work, respecting their own well-being and the well-being of other people, other species, the natural environment, and future generations. It would assist students and educators to recognize that our well-being is interdependent and that our daily activities can contribute to, or detract from well-being. It would also permit students and educators to make informed decisions about policies that impact well-being (O’Brien, 2012).

4. Conclusions

In sum, children – like adults – are likely to adapt their sense of life satisfaction both to their own realities and to the examples and norms set by the societies in which they live. There is a need for changes in attitudes, policies, practice and behavior. Specifically, opportunities for integrating positive psychology with sustainability education are discussed including work in the area of sustainable happiness, Education for Sustainable Development (ESD) and positive education. Sustainable happiness underscores the interrelationship between human flourishing and ecological resilience. Thus sustainable happiness and well-being are integral to building sustainable futures, and positive psychology could be increasingly influential in leading research and education that heralds a new era of understanding and political will to embrace sustainability.

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Global macroeconomic interdependence: a minimum spanning tree approach

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Abstract. *This paper measures the evolution of the interdependence level of the global economic system using a novel approach that combines network analysis and time-varying correlations. A Scalar-BEKK model is employed to determine the dynamic conditional bilateral correlations of 102 economies for the period 1952-2011. A subdominant ultrametric space is then defined for each year by applying a single-link cluster analysis to filter and highlight first-order connections in the network. I find the core of the global economic network to be dominated by advanced economies while the periphery is composed by nearly all of the developing economies and some of the emergent market economies; France occupies the central hub of the network, which coincides with recent findings from studies on European financial markets. I also find that the global macroeconomic interdependence rose over 61% between 1952-2011, which is in line with the majority of the empirical research on business cycle synchronization; however, this paper reveals an accelerating convergence process during the phase 1996-2011 that exceeds results from previous studies.*

Keywords: macroeconomic interdependence; global convergence; international business cycles; network analysis; dynamic correlations.

JEL codes: C38; F41; F44; O47.

1. Introduction

A significant part of the studies on international business cycles presents evidence for the existence of a process of increasing synchronization of business cycles (Lumsdaine and Prasad 2003, Bordo and Helbling 2004, Artis *et al.* 2011). The record high levels of global synchrony in the first decade of 21st century, at levels at least not seen since world war II, is a phenomenon also observed by several studies that apply different approaches and methodologies (Kuzin and Hillebrand 2009, Banerji and Dua 2010, Gomez *et al.* 2011, Antonakakis 2012, Antonakakis and Scharler 2012).

Following this framework, a body of recent research argues that overall level of comovement between economies has reached sufficient magnitude to consider the emergence of a global economic cycle. Most of this work uses dynamic factor models for comparing the relative importance of the global common factor *vis-a-vis* the idiosyncratic factors specific to each economy. Accordingly, some studies adopt the activity level of the G-7 as a measure for the global economic cycle, concluding that the global factor explains most of the covariation between countries as well as the global cyclical events noted during the most recent period of globalization (Lumsdaine and Prasad 2003, Canova *et al.* 2007). Considering the correlations between the G-7 economies, the permanent component appears to explain a significant portion of their respective GDP fluctuations (Moneta and Ruffer 2009), productivity (Glick and Rogoff 1995), consumption (Ayhan Kose *et al.* 2008), investment (Gregory and Head 1999) and terms of trade (Crucini *et al.* 2011). However, this perspective of convergence between national business cycles, especially from the beginning of the 21st

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century onwards, is not consensual. Miśkiewicz and Ausloos (2010) study the process of globalization of the world economy, supporting their analysis on a measure of entropy they conclude that the process has reached a peak in the period 1970-2000, then followed by a process of de-globalization. Other studies show that levels of correlation across countries are positive but not very high (Ambler *et al.* 2004) or do not show a clear trend of growth (Doyle and Faust 2005).

The aforementioned studies focus almost exclusively on samples comprised of advanced economies (G-7/OECD/EU). Is it possible to represent the comprehensive global economic network and to measure its level of interdependence? In order to address this question, the paper proposes a wide novel approach which combines network analysis with time-varying bilateral correlations between 102 economies for the period 1952-2011. A Scalar-BEKK model is employed to determine the dynamic conditional correlations for each year and then a single-link cluster analysis is applied to filter and highlight the first-order connections in the global economic network. Section 2 derives the dynamic conditional correlations model and the subdominant ultrametric space resultant from the network filtering procedure. Section 3 analyses the mean network topology and its structural evolution from 1952 to 2011; 3 distinct phases are found in the network structural evolution: 1952-1973, 1974-1995 and 1996-2011. Section 4 defines the interdependence measures based on topological distances and examines the evolution of the global economic network over the period 1952-2011. Section 5 summarizes the main findings and suggests further topics for research.

2. Methodological approach

2.1. Dynamic Conditional Correlations

A dynamic conditional correlation model is employed to obtain a time-varying measure of bilateral business cycle correlations between 102 economies from 1952 until 2011. Since the late 1980's, many new models and empirical applications of dynamic covariance models and dynamic correlation models emerged, based on multivariate Generalized Autoregressive Conditional Heteroskedascity (GARCH) processes.

Consider a $m * 1$ vector stochastic process of annual growth rates and condition on the information set at time $t-1$:

$$y_t = E(y_t|I_{t-1}) + \varepsilon_t \quad (1)$$

$$\varepsilon_t = D_t \eta_t \quad (2)$$

$E(y_t|I_{t-1})$ represents the conditional mean, $D_t = \text{diag}(h_{1t}, h_{2t}, \dots, h_{mt})$ with $h_{it} = E(\varepsilon_{it}^2|I_{t-1})$ and η_t is a random vector assuming to follow $E(\eta_t) = 0$ and $\text{Var}(\eta_t) = I_m$, where I_m is the identity matrix of order m . Let $H_t = E(\varepsilon_t \varepsilon_t' | I_{t-1})$ be the conditional covariances matrix, which can also be represented by:

$$H_t = D_t R_t D_t \quad (3)$$

where $R_t = E(\eta_t \eta_t' | I_{t-1})$ is the matrix of conditional correlations.

The BEKK model proposed by Engle and Kroner (1995) defines the conditional covariance matrix as:

$$H_t = CC' + \sum_{k=1}^K A_k' \varepsilon_{t-1} \varepsilon_{t-1}' A_k + \sum_{k=1}^K B_k' H_{t-1} B_k \quad (4)$$

where C , A_k and B_k are square coefficient matrices and H_{t-1} is a triangular coefficient matrix. Engle and Kroner (1995) provide sufficient conditions to identify BEKK models with $K = 1$, namely that $A_{k,11}$, $B_{k,11}$ and diagonal elements of C are restricted to be positive and I follow this specification. The conditional correlation matrix can be indirectly obtained from (3) as follows:

$$R_t = D_t^{-1} H_t D_t^{-1} \quad (5)$$

Considering $K = 1$ and substituting (4) into (5), a final expression is derived for the conditional correlation matrix:

$$R_t = (D_t^{-1}C)(D_t^{-1}C)' + (D_t^{-1}A\varepsilon_{t-1})(D_t^{-1}A\varepsilon_{t-1})' + (D_t^{-1}BH_t^{-1/2})(D_t^{-1}BH_t^{-1/2})' \quad (6)$$

The number of parameters in this BEKK model is $M(5M + 1)/2$. In order to reduce the number of parameters I elaborate a Scalar-BEKK Model as in Ding and Engle (2001), considering $A = \alpha u'$ and $B = \beta u'$, where α and β are scalars and u is a vector of ones.

Caporin and McAleer (2008) show that the conditional correlation matrix expressed in (6) has explicit regularity conditions and asymptotic properties for the Quasi-Maximum Likelihood Estimates (QMLE) in the absence of multivariate normality of the vector of standardized residuals. Following their empirical approach, a VAR(1) model was fitted to the growth rates to compute the mean residuals. With the conditional mean given as $E(\varepsilon_t|I_{t-1}) = 0$ and the conditional variance given as $E(\varepsilon_t\varepsilon_t'|I_{t-1}) = \Sigma_t$, the model becomes:

$$\begin{aligned} \Sigma_t &= (1 - \alpha - \beta)\Sigma + \alpha\varepsilon_{t-1}\varepsilon_{t-1}' + \beta\Sigma_{t-1}, \\ \Sigma &= T^{-1}\sum_{i=1}^T \varepsilon_i\varepsilon_i'. \end{aligned}$$

The dynamic conditional correlations are then given by:

$$\begin{aligned} \tilde{R}_t &= \bar{\Sigma}_t^{-1}\Sigma_t\bar{\Sigma}_t^{-1}, \\ \bar{\Sigma}_t &= \text{diag}(\sigma_{11,t}, \sigma_{22,t}, \dots, \sigma_{mm,t}). \end{aligned}$$

and finally I apply the equations to the bivariate case.

2.2. Subdominant ultrametric space: the minimum spanning tree approach

The bivariate dynamic conditional correlations cannot be used as metric distances as there can be cases of negative correlation between economies (negative coefficients). However, as proved by Mantegna (1999), a metric distance can be determined from a nonlinear transformation of the correlation coefficient. I follow this approach and set:

$$d_{ij} = \sqrt{2(1 - \rho_{ij})} \quad (7)$$

where ρ_{ij} means the correlation coefficient of economies i and j . A topological space can therefore be defined, as d_{ij} fulfils the three axioms of a metric distance¹.

A distance matrix is then built for each period, representing a fully connected graph with edge weights d_{ij} . With N economies the number of links in the network becomes $N(N - 1)/2$. I follow a clustering procedure known as single-linkage clustering analysis (SLCA) that provides a pruned representation of the network. This representation, named Minimum Spanning Tree (MST), allows us to represent the subdominant ultrametric space at each period. The MST is a graph that contains N nodes (economies) connected by $N - 1$ links such that the sum $\sum_{d_{ij} \in T} d_{ij}$ is a minimum.

The MST has the advantage of reducing the complexity of the distance matrix network by showing only the $N - 1$ most important non-redundant connections (first-level connections). Its dynamic application is particularly suitable for extracting the most important information when a large number of time series are under examination (Coelho *et al.* 2007) and relevant for complex systems containing N stochastic processes whose interaction evolve over time (McDonald *et al.* 2005). I chose to apply SLCA because it maintains the relevant information from the correlation matrix (Coelho *et al.* 2007), it presents robustness of results (Onnela *et al.* 2003) and proves to have more stability when compared to other methods (Tumminello *et al.* 2010).

¹ Axioms: (i) $d(i, j) = 0$ if and only if $i = j$; (ii) $d(i, j) = d(j, i)$; (iii) $d(i, j) \leq d(i, k) + d(k, j)$.

3. Network topology and structural dynamics (1952-2011)

The minimum spanning tree approach is based in the conditional correlation matrix, focusing on the correlation patterns of interactions between economies. Interactions combinations result in graphs with different degrees of complexity, constructed by iteratively linking the most strongly connected economies (nodes). In this section I firstly present a static representation of the average structure of the network over the period and then I examine its stability and robustness dynamics.

Figure 1 displays a graphical representation of the minimum spanning tree generated by the mean distance between economies over the period 1952-2011. Economies (nodes) are organized according to their current development level. I follow International Monetary Fund classification procedure, distinguishing between advanced economies (red circles), emergent market economies (blue squares) and developing economies (yellow triangles). Link's thickness inversely depicts the distance between 2 economies, *i.e.* the thicker link represents the closest countries (smallest geodesic distance) in the tree, Germany and Austria.

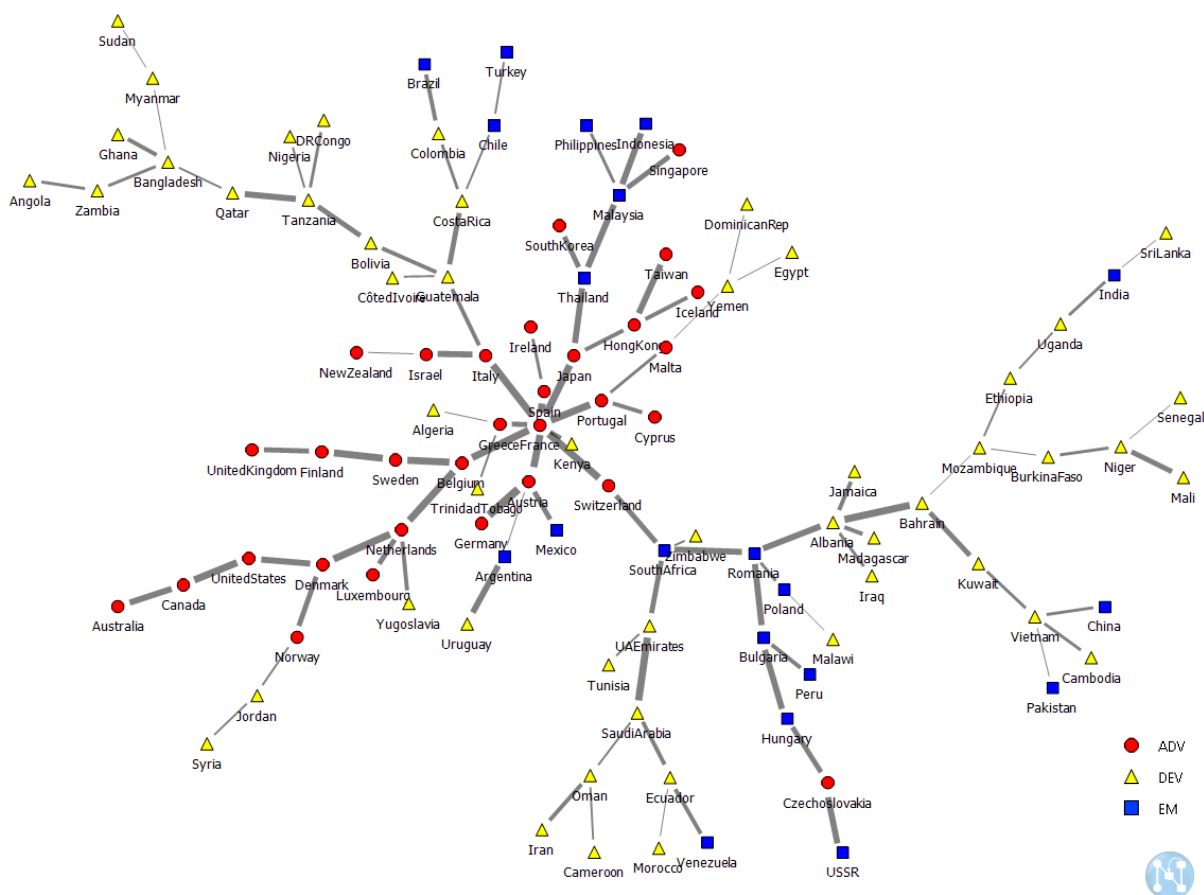


Fig.1: Global Economic Network MST (Avg. 1952-2011)

The tree provides a visual overview of the structure of interconnections. Economies tend to cluster according to development level, meaning that the majority of the first-level connections are intra-group. In fact, 73.3% of total links are between economies which share the same development degree, with the two

greatest groups being composed of developing economies (37.6% of total links) and advanced economies (26.7% of total links).

The stronger connections, associated to smaller distances (thicker lines in the graph), are particularly revealed inside the group formed by advanced economies; as an example, it is observable that the 10 smallest distances are between advanced economies. The advanced economies group occupies a strong compact and centralized position in the tree, connecting through direct paths² more than 90% of all advanced economies. The tree is composed by other 5 major branches, 2 of which are mainly composed by emergent economies and the remainder are formed by developing economies. Interestingly, emergent economies tend to cluster predominantly according to geographical position, entering the tree either as a leaf (last peripheral node in the branch), as in the case of China, Brazil, Pakistan, or through the formation of geographical branches. One such branch is formed by Southeast Asian countries that connect to the advanced economies through Japan. The other branch is mainly composed of former soviet-aligned economies, connecting USSR (the leaf) to the advanced economies through Switzerland.

Next the centrality of the network structure is examined, based on pair-dependency among its nodes. This matter is relevant because a network structure with a higher level of interdependence would make the network more sensible to variations in business cycles of more central economies. In order to find how important an economy (node) is in terms of connecting other economies (nodes), I apply a network measure named node betweenness centrality and define it as it was first proposed by Freeman (1977):

$$B_i = \sum_{k \neq j} \frac{P_i(kj)/P(kj)}{(n-1)(n-2)/2} \quad (8)$$

where $P_i(kj)$ denote the number of geodesic paths between k and j that i lies on, and $P(kj)$ is the total number of geodesic paths between k and j ³. The results are mapped according to a concentric algorithm and displayed in figure 2. France takes up a central role in the network, being directly and strongly connected to 9 countries and assuming a central position in all major branches. Interestingly, this result is in line with a recent body of research on financial markets⁴ that point France, not Germany nor United Kingdom, as the central hub of European bond and equity markets.

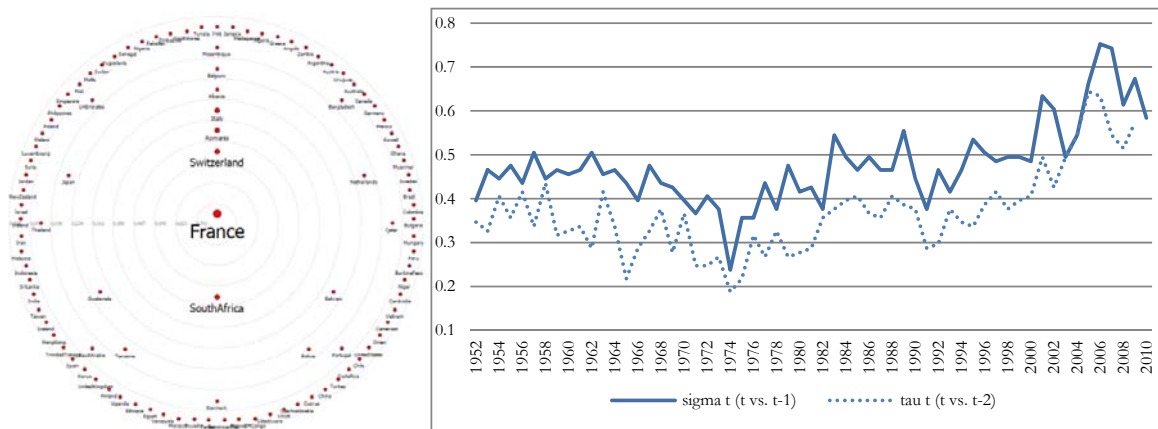


Fig. 2 – Left: Node betweenness centrality; Right: MST Survival Ratios.

² A path in T between nodes i and j is a sequence of links $i_1 i_2, \dots, i_{K-1} i_K$ such that $i_k i_{k+1} \in T$ for each $k \in \{1, \dots, K-1\}$, with $i_1 = i$ and $i_K = j$, and such that each node in the sequence i_1, \dots, i_K is distinct (Jackson 2008).

³ B_i is determined for every $k \neq j$ such that i is not an element of $\{k, j\}$.

⁴ For example, see: Gilmore *et al.* (2008), Eryigit and Eryigit (2009), Gilmore *et al.* (2010), Leonidas (2012).

Time-varying correlations allow us to examine the dynamics of the network structure during the period 1952-2011. The robustness of global economic tree topology can be analysed through the concept of single-step survival ratio, defined as the fraction of links found common in two trees (Onnela *et al.* 2003). The survival ratios found between year t and previous years $t - 1$ and $t - 2$ are defined as follows:

$$\sigma_t = \frac{1}{N-1} |E^t \cap E^{t-1}| \quad (9)$$

$$\tau_t = \frac{1}{N-1} |E^t \cap E^{t-2}| \quad (10)$$

where E^t refers to the set of edges of the tree at year t , \cap is the intersection operator and $|\dots|$ gives the number of elements in the set. The stability of the tree over time is depicted in Fig. 7. In the 1970's the tree passed through a deep restructuring process, with an average ratio of 60% new links every year. Since then, network stability kept reinforcing over time, achieving a maximum survival ratio of over 75% of total links in 2007, just before the onset of the Global Recession of 2007-09.

In order to acknowledge the existence of trend breakpoints in the tree structure, I propose a simple model that regresses σ_t on τ_t and search for breaks in equation parameters. The following OLS regression is defined:

$$\sigma_t = \beta_0 + \beta_1 \tau_t + \varepsilon_t \quad (11)$$

As expected, tree robustness dynamics demonstrated strong consistency over consecutive periods ($\beta_1 = 0.81$). A Quandt-Andrews unknown breakpoint test⁵ was then performed to examine the parameters stability. The null hypothesis of no breakpoints within 15% trimmed data was rejected with 94% probability for τ_t and 91% probability for all equation variables⁶. The test results point two structural changes in MST, occurring in 1974 (for τ_t) and 1996 (for all regressors). Thus these findings suggest three distinct phases in the evolution of the global economic network: 1952-1973, 1974-1995 and 1996-2011, which properties are investigated in the next section.

4. An increasingly interdependent economic world?

This paper proposes network distance-based measures to evaluate the level of interdependence between economies. As stated in section 2.2, for each period a bilateral distance matrix was obtained from a non-linear transformation of the respective correlation conditional matrix. A shorter (greater) distance between two economies that are directly connected in the network correspond to a higher (lower) correlation between them. In this sense, four measures based on geodesic distances are proposed to characterize the level of interdependence observed in the network: (i) normalized tree length, (ii) average weighted degree, (iii) mean distance, and (iv) tree diameter.

The normalized tree length (NTL) measures the temporal state of the economic network and is defined as the following:

$$L(t) = \frac{1}{N-1} \sum_{d_{ij}^t \in \mathcal{T}^t} d_{ij}^t \quad (12)$$

where t denotes time at which the tree is constructed. A representation of this measure as a function of time is depicted in figure 3 (right) and it shows that it is highly anticorrelated with mean bilateral conditional correlation plotted in figure 3 (left). The Pearson's linear coefficient between the two series is 0.815, and it provides evidence that even though the MST is a reduced indirect representation of the correlation matrix, it retains the salient features of the global economic network.

⁵As developed by (Andrews 1993).

⁶According to corresponding Supreme likelihood ratio test statistics, probabilities computed using (Hansen 1997) method.

Figure 3 (right) shows a downward trend in the mean bilateral geodesic distance for the period 1952-2011 with a steep decrease since the beginning of the 21st century. The global economic network has become much more compact and interdependent in recent years. In fact, in 2000's NTL fell to levels 66% lower than in beginning of the 1950's and 35% lower than previous bottoms of 1976 and 1993. Placing the remarkable downfall from 1996 to 2011 in perspective, if the network were to keep its average NTL compressing pace of 1998-2010 (61% increase), the global economic network would find itself in complete full synchronization (zero geodesic distance) by 2029.

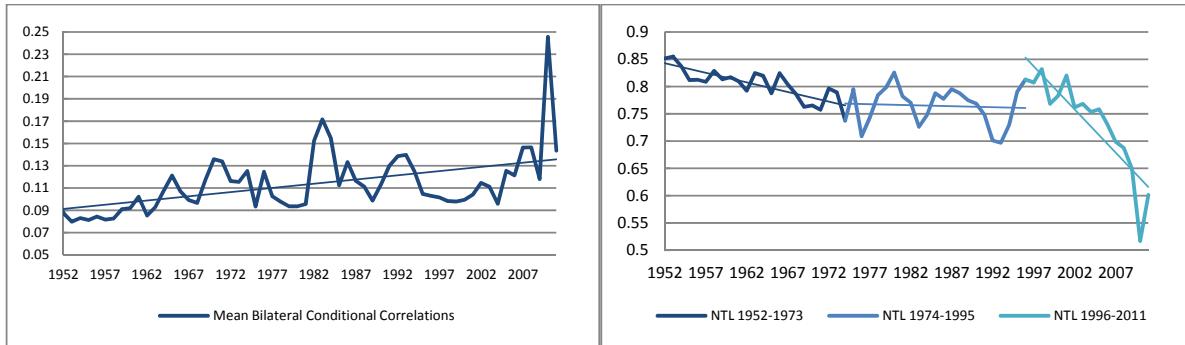


Fig. 3 – Left: mean bilateral conditional correlation; Right: normalized tree length (NTL)

A related measure can be obtained from the dynamic analysis of the tree average weighted degree. The degree of a node is the number of links that involve that node, which is the cardinality of i 's neighbourhood. Degree has generally been extended to the sum of weights when analysing weighted networks and labelled node strength (Barrat *et al.* 2004, Newman 2004). I formalize this measure for the complete tree, name it Average Weighted Degree (AWD) and define it as follows:

$$W(t) = N^{-1} \sum_i^N \sum_j^N d_{ij}^t, \quad d_{ij}^t \in \mathbf{T}^t \quad (13)$$

The result for each period t is depicted in fig.4. This measure is an average of weighted degrees for all the nodes of the tree, which is subject to a fixed composition of $N - 1$ links. Thus an increase (decrease) in AWD should reflect a higher (lower) degree of centrality of the network, meaning if nodes are more connected to some central node(s) (higher centrality) or whether are more dispersed over the network (lower centrality). Taking this into consideration, the results (fig. 4) suggest the emergence of a process of decentralization during the first phase (1952-1973), followed by a consolidation phase (1974-1995) and then a second wave of decentralization (1996-2011).

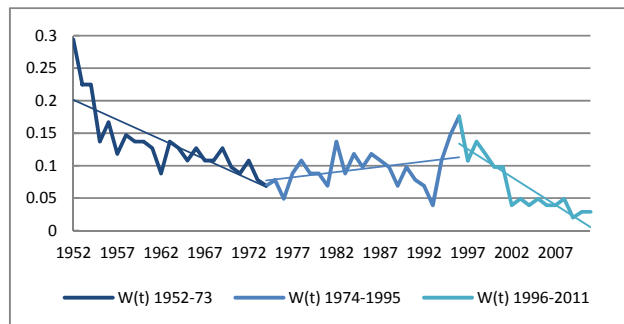


Fig. 4: MST Average Weighted Degree (W)

In a tree representation, nodes are usually connected directly to only a few nodes (at least one) while remaining indirectly connected to all the others. In order to understand how the indirect connections between

the economies (nodes) evolved over time in the tree, we introduce two additional distance measures: Mean Distance and Network Diameter. Distance between two nodes is the length of number of links in the shortest path or geodesic between them. Thus Mean Distance is defined as the average geodesic distance between any pair of nodes and Network Diameter as the largest geodesic distance between any pair of nodes in a network. The evolution of both distances is depicted in figure 5.

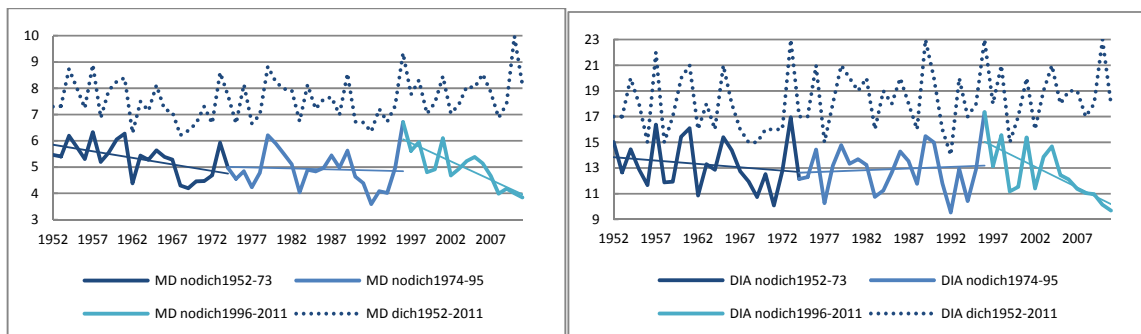


Fig. 5 - Left: Mean Distance; Right: Network diameter

It is straightforward that even though these series display greater bounded volatility than NTL and AWD. This derives from the interplay of three effects: the constraint upon tree formation, subject to $N - 1$ links; the evolution of link average length (as displayed in fig 3 - right); and tree centrality. The measures are presented in both figures with and without dichotomizing the links, *i.e.* with and without weighting for the distances between the nodes. For example, in 2010 the mean distance between any pair of nodes was below 4, even though in that year the average path between any pair of links rose almost to 10 links. In essence, the slight downward trend observed in both indicators was motivated by the sharp decline in NTL between 1998 and 2010, even though in this period the tree has become less centralized.

These results suggest that a simple and comprehensive measure for the level of interdependence would be to define it as the inverse of NTL. Following this perspective, this paper shows that network interdependence has increased consistently in the phase 1952-1973, reaching a local maximum (NTL minimum) in 1976, and accelerated remarkably in the phase 1996-2011, increasing over 61% between 1998 and 2010 and reaching a global maximum (NTL minimum) in 2010. These results stand in line with the vast majority of empirical studies on international business cycles synchronization, which reports a secular trend towards synchronization (Artis *et al.* 2011, Bordo and Helbling 2011, Antonakakis 2012). This paper findings also support the view of an unprecedented level of synchronicity between major economies during the great recession of 2007-2009, as shown by Banerji and Dua (2010), Imbs (2010) and Kuzin and Hillebrand (2009), although I present evidence that this process is broader in time (1998-2010) and in depth, as NTL drop from 0.83 in 1998 to 0.53 positioned the world 1/3 closer to complete economic synchronization (zero geodesic distance).

5. Conclusion

This paper shows that global macroeconomic interdependence rose over 61% during the period 1952-2011, which is in line with the majority of empirical research on business cycle synchronization. However, an accelerating convergence process is revealed during the phase 1996-2011 that exceeds results from previous studies.

I find the core of the global economic network to be dominated by advanced economies while the periphery is composed by nearly all of the developing economies and some of the emergent market economies. Emergent economies tend to cluster predominantly according to geographical position, entering

the tree either as a leaf or through the formation of two geographical branches: Southeast Asia and ex-soviet economies. France occupies the central hub of the network, which coincides with recent findings from research on European financial markets.

A number of topics for further research can be suggested by this paper. One is to examine the evolution of interconnections in the network according to the level of development, by examining the empirical evidence supporting the “decoupling hypothesis”, meaning the claim that emergent market economies could have diverged from advanced economies during the recent period of globalization. Other topics include researching the determinants of business cycle interdependence and studying the network’s local properties and its relation to local and regional economic growth.

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8. Appendix: Data source and classification

The data series are obtained from the Total Economy Database of the University of Gröningen, which updated the database of Angus (2003). I followed the International Monetary Fund (IMF) classification procedure as of April 2012⁷. This classification is not based on strict criteria, economic or otherwise, and it has evolved over time. The term “Economy” does not always refer to a territorial entity that is a state as understood by international law and practice. Some territorial entities included in this study are not states, although their statistical data are maintained by IMF on a separate and independent basis.

Advanced economies: Australia, Austria, Belgium, Canada, Cyprus, Czechoslovakia⁸, Denmark, Finland, France, Germany, Greece, Hong Kong⁹, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, Malta, the Netherlands, New

⁷ <http://www.imf.org/external/pubs/ft/weo/2012/01/pdf/text.pdf>

⁸ From 1991 onwards, economy composed of successor states of Czechoslovakia: Czech Republic and Slovakia.

⁹ On July 1, 1997, Hong Kong was returned to the People's Republic of China and became a Special Administrative Region of China.



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Zealand, Norway, Portugal, Singapore, South Korea, Spain, Sweden, Switzerland, Taiwan Province of China, United Kingdom and United States. Emergent market economies: Argentina, Brazil, Bulgaria, Chile, People's Republic of China, Hungary, India, Indonesia, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Romania, South Africa, Thailand, Turkey, USSR¹⁰ and Venezuela. Developing economies: Albania, Algeria, Angola, Bahrain, Bangladesh, Bolivia, Burkina Faso, Cambodia, Cameroon, Colombia, Costa Rica, Côte d'Ivoire, Dominican Republic, DR Congo, Ecuador, Egypt, Ethiopia, Ghana, Guatemala, Iran, Iraq, Jamaica, Jordan, Kenya, Kuwait, Madagascar, Malawi, Mali, Morocco, Mozambique, Myanmar, Niger, Nigeria, Oman, Qatar, Saudi Arabia, Senegal, Sri Lanka, Sudan, Syria, Tanzania, Trinidad Tobago, Tunisia, UA Emirates, Uganda, Uruguay, Vietnam, Yemen, Yugoslavia, Zambia and Zimbabwe.

¹⁰ From 1991 onwards, economy composed of successor republics of USSR: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.