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AND MANAGEMENT**
Conference Proceedings

**Edited by
Vesna Stojanović Aleksić**

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FOREWORD

The Proceedings represent the result of the 4th International Scientific Conference “*Contemporary Issues in Economics, Business and Management*” - *EBM 2016*, held at the Faculty of Economics, University of Kragujevac, on 9th and 10th of November, 2016. The conference is dedicated to contemporary issues in management and economics, and through the presented papers, authors have exchanged experiences and discussed research results in the previous period. In parallel with the EBM 2016 conference, this year there was a 14th Polish-Italian-Ukrainian-Serbian Scientific Symposium: Contemporary Challenges in Economics, Business and Management, which is the result of cooperation between the *Faculty of Economics, University of Kragujevac* and the following faculties: *Faculty of Economics, University of Messina*, Italy, *Cracow University of Economics*, Poland and the *Kiev National University of Trade and Economics*, Ukraine. The Proceedings also present the papers of the participants of this conference. Scientific cooperation through conferences of this type is important for several reasons. In the modern world, which changes daily, we are faced with many challenges that impose the necessity of reshaping the business and management strategies, as well as the ways of leading the organizations and overall economic policy. There is an enormous responsibility on the managers and economists for the development of economy and society as a whole, and the responsibility for researchers and scholars in this area is even greater, since they are expected to offer new purposeful and efficient solutions and guidelines for the development of enterprises and sustainable economic growth. The conference "*Contemporary Issues in Economics, Business and Management*" has been the opportunity for researchers to attempt to contribute to solving the current problems of economics and management, as well as to launch new issues that will be subject to consideration and resolution in the days ahead.

The Proceedings of the Conference consists of five parts. The first part, *Key Issues in Management and Marketing*, encompasses papers that refer to analysis of the key aspects of corporate social responsibility, competitiveness, entrepreneurial orientation and strategic management, intrinsic motivation, enterprise profitability assessment, relationship marketing, value based management, development of human resource management, corporate finances. The second part, *Globalization and Regionalization*, discusses the importance of logistic performance index, the impact of public sector on small and medium enterprises, productivity as a factor of economic growth, assessment of the possibilities of human potential for economic growth, correlation between economic growth and human development in Western Balkans, informal education, effects of globalization on capital mobility. In the third part, *Accounting and Business Finance*, there are papers that deal with cooperative audit in Serbia, possibilities for improving segment reporting, influence of the legal form of the company and its size on accounting disclosures, influence of leverage on profitability of companies in the Republic of Serbia. In the part *Applied Informatics and Quantitative Methods in Economics and Management*, there are papers that are related to DEA method for measuring efficiency of the economy of Republic of Serbia, and misuses of electronic payment systems. The fifth section features papers presented within the Four-party cooperation symposium - *14th Polish-Italian-Ukrainian-Serbian Scientific Symposium: Contemporary Challenges in Economics, Business and Management*. The papers are related to the international production networks, the strategic link between intellectual capital and open innovation, knowledge management, significance of employer brand in the employment of college and university graduates, the shadow economy in foreign trade, university education in the era of modern challenges, business process mapping, network paradigm in management sciences, opinion mining framework, the importance of franchise networks in economy and logistics management for supply change.

The participants of the Conference assessed the discussions as creative, constructive and meaningful. All papers have been reviewed, and we expect that these Proceedings will be useful to the academic, professional and general public, and will provide a good basis for further scientific research.

Editor

Vesna Stojanović Aleksić

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KEY ISSUES IN MANAGEMENT AND MARKETING

APPLICATION OF CoRT FOR EDUCATION FOR SOCIALLY RESPONSIBLE VALUES - A CASE OF KNOWLEDGE-CUM-VALUES MANAGEMENT

Matjaž Mulej¹

Zdenka Ženko²

Nastja Mulej³

Abstract: *The most pressing current issue is survival of humankind, if social responsibility does not replace the currently prevailing values that are causing the danger of the Third World War. This situation requires intelligence of all kinds, hence education that develops knowledge and values in their interdependence, having a positive impact over social responsibility of the included youngsters (and their parents, teachers and others around them). Due to the contemporary narrow specialization of knowledge and skills, one must work on knowledge and values of creative collaboration as much as possible, too. Ethics of interdependence provides the basis for the team to come closer to holism of approach and wholeness of work/collaboration's outcomes and responsibility for one's impact over society. Since one must and can learn the skill of creative collaboration as early as possible, de Bono's CoRT techniques are very appropriate. Application of them can support social responsibility and be a bridge from the one-sided concept of knowledge-management to a requisitely holistic concept of knowledge-cum-values management.*

Keywords: *CoRT, Dialectical Systems Theory, intelligence, knowledge-cum-values management, requisite holism, social responsibility*

JEL Classification: *O31, O35, A13, D83, I25*

1. INTRODUCTION

Due to the contemporary narrow specialization of knowledge and skills, which results in one-sidedness and hence endangers humankind's survival one must work on knowledge and values of creative collaboration, intelligence of all kinds, and social responsibility as much as possible, and as soon as possible, too. Ethics of *interdependence* provides the basis for the team to come closer to *holism* of approach and wholeness of work/collaboration's outcomes and *responsibility* for one's impact over society. Since one must and can learn the skill of *creative collaboration* as early as possible, de Bono's *CoRT techniques* are very appropriate. Application of them can support social responsibility and be a bridge from the one-sided concept of knowledge management to a *requisitely holistic* concept of *knowledge-cum-values management*.

2. A BRIEF LITERATURE OVERVIEW

Literature on 'knowledge management' abounds, but there are only two articles on the concept of knowledge-cum-values management (Šarotar et al, 2014; Zlatanović, Mulej, 2015). The concept is new, but its background lies in the Dialectical Systems Theory (Mulej,

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1974; Mulej 1979; Mulej et al, 2013) that speaks about the interdependence of knowledge and values as components of the subjective starting points of any human activity, including thinking.

3. BRIEFLY ABOUT BACKGROUNDS OF THE NEED FOR DE BONO'S CoRT - EDUCATION FOR THINKING

Thinking is a way of knowledge management; thinking is a skill that one can learn.

Let us take some crucial thoughts from de Bono (2016, originally 1992) about the thinking program CoRT 1-6 showing the need for the education of youngsters for thinking based on his Lateral Thinking and Six Thinking Hats that he briefs in the same book. (We will not tackle techniques here.)

“Intelligence is a potential, which one uses by thinking. One cannot learn the thinking skills in school [of so far, N.B. authors]. Exercise is not enough. Information can replace thinking, while thinking cannot replace information. Knowledge cannot be as complete as to replace thinking. Routines help, including making room for thinking about novelties. Quality of application of intelligence and routine depends on quality of thinking that includes research. Exercises can support the development of the thinking skills, if they are sufficiently demanding, but solvable with humans’ given prudence, knowledge and information. One point of thinking is the aim to make complex and complicated topics simple enough to be open for mastering”, but without making the parts of the topic self-sufficient, i.e. without forgetting about their synergies [N.B. authors].

“In schools one teaches reactive rather than proactive behavior, including thinking, while the real life often requires proactive thinking for the person to go and fix open problems as challenges rather than difficulties. Both types of thinking are necessary, none is enough. Knowledge is neither enough, if there is no action, but without thinking, one normally does not have enough data and information for action. Intuition helps too, but it is not enough either. One must work with people; one must make decisions; one must generate strategies and make them reality. This includes conflicts, conflicts resolving, negotiation, estimation of potential and real outputs and outcomes and related necessary changes, as well as making contracts and fulfilling them, discovering and/or generating the alternatives, consideration of several different viewpoints and their synergies. All these and similar real life features require proactive thinking, not the reactive one only”.

“To be constructive, one must be critical rather than happy with the given state. But the critical thinking is reactive: one cannot criticize the unknown future, which is tackled by the proactive thinking. Suggestions come from the constructive, creative and productive thinking”.

“Mistakes can be neither prohibited nor avoided, but considered as new initiatives for further critical and proactive thinking. Criticism is simpler than creation and not enough; both of them are necessary”.

“Opposition to suggestions is the usual habit in the so called democratic societies where they understand democracy as the existence of several political parties opposing each other and debating, fighting rather than supporting each other or finding a shared synergy”.

Arguments are used, but usually they tend to be one-sided; the word ‘argument’ reflects the word ‘arguing’. It is about demonstrating one’s power rather than about creative problem solving; hence arguing is helpful only as a phase of the process of thinking and co-working. [N.B. authors].

“Protesting is a crucial phase, but nothing more, too. Persuasion is a crucial attribute of good protesting; it generates the creative protesting and hence creating new ideas with some potentially beneficial consequences”.

But nobody must/may feel any final (!) need to be right, because nobody can be right from all viewpoints that may be important and from all their important synergies resulting from their interactions, due to everyone’s unavoidable and narrow specialization. Creative interdisciplinary cooperation is therefore crucial. It can receive support from methods or techniques such as CoRT, 6 thinking Hats’, Lateral Thinking’ by Professor Edward de Bono, or our ‘USOMID’ and its combination with ‘6 thinking Hats’ (Mulej and Mulej, 2006).

It is time for what de Bono calls ‘creative revolution’ rather than the destructive ones that have been usual for all millennia of humankind.

“Analysis is a traditional part of thinking; it helps thinkers to understand parts, but parts only. Hence, synthesis of insights is equally crucial” (Actually, there is also a synthesis before analysis, namely the synthesis of the selected viewpoints that define the framework of the analysis [N.B. authors]; see Mulej, 1979).

“Along with analysis action planning is crucial for the search for solutions by creative thinking in an interdisciplinary creative collaboration. The usual education does not cover much action planning and proactive thinking, rather than reactive thinking, analysis, critical thinking, argumentation/arguing, and knowledge. Another reason for this bad situation is the requirement that the new idea must be logical, which actually means matching the old criteria of right and wrong, clever and stupid, rather than new and creative, and surprising”.

The issue shows up, hence: what is logical? It depends on one’s perception that depends on the selected viewpoint/s.

“Perception seems to be the most neglected part of thinking. Emotions, feelings and intuition play a crucial role in the process of thinking, because they determine one’s values, hence how one uses one’s own and others’ knowledge and equipment”.

“In order to attain this capability, one needs a lot of discipline in teaching and learning, in focusing on time and topic, freedom and openness; and one must know, like a carpenter, which tool is OK for the chosen purpose and work. Training can be formal and/or informal”.

“There are situations in life when one wants to think and situation when one must think, because one faces an open issue and must try to solve it. One may try to change the problem to a routine-like solution by one’s thinking, but routine cannot replace thinking, due to the fact that there are no totally final solution with any new open issues”.

“There are three kinds of thinking: occasional, discussion-related, and applied.

- The occasional thinking tackles daily experiences and related activities, such as meeting with people, shopping, etc.
- The discussion-related thinking focuses on research, arguing, discussing, reflection etc. in meetings such as conferences, sessions, board meetings, etc.
- The applied thinking tackles a concrete situation requiring thinking on choosing, decision making, planning, strategy formulation, initiative, chance, problem, task, dispute, etc.”

“Good thinking can become a habit or be applied on purpose, which helps better. Focusing on a chosen topic is essential for the topic to become visible and exposed. Training and experience support one’s development of one’s thinking skills”.

“The human brain is a self-organized system (i.e. complex entity, not the idea about it, N.B. authors) that enables the incoming information to organize themselves into routine patterns. Hence, ratio has its own behavior. One can intervene, though, to use this natural behavior with more success to attain one’s own goals. One can develop tools for directing the focus and structure of thinking. In addition, training can help one in generating one’s routine patterns that are more efficient than the natural ones. All these things help one develop the thinking skills”.

“The basic elements of the thinking skills include:

- The approach: how to tackle thinking.
- The principles: principles directing humans toward good thinking.
- The habits: the automatized routines.
- The basic operations: the basic procedures of thinking.
- The tools: one practices the use of tools and uses them in a planned way.
- The structures: patterns of thinking as frameworks of a more convenient behavior”.

“The good approaches include:

- Everybody must, may, and can think.
- Thinking is a skill that one can learn.
- I consider myself a thinker.
- I am permanently growing better in my thinking.
- Thinking may require a purposeful effort.
- One can often simplify things that seem complex.
- Make a single step ahead.
- Delimit your thinking from your ego. Watch it objectively.
- The purpose of thinking is not to make you always right.
- Listening and learning are crucial for thinking.
- Be modest; good thinkers are not arrogant.
- Thinking should be constructive rather than negative.
- Research the topic, rather than argue about it.
- The opposite party usually says something useful, if you discover it.
- Persons with different views are usually right inside their own viewpoints.
- We are capable of creativity and we have new ideas.
- Do not fear testing new ideas.

In every moment of thinking, some alternatives are possible you have yet not thought of them.

- Even if you feel right, do not be dogmatic”.

Obviously, CoRT addresses human intelligence, but mostly the intellectual one, by speaking about thinking much more than about feeling. He maintains, though: “Emotions, feelings and intuition play a crucial role in the process of thinking, because they determine one’s values.”

Let us, hence, now brief kinds of intelligence; they are several rather than a single one.

4. BRIEFLY ABOUT KINDS OF INTELLIGENCE

There are several kinds of intelligence: intellectual, emotional, spiritual, social, physical (Šarotar Žižek, Vajngerl Čič, Mulej, 2016). Let us quote about them to add to the intellectual one that we have tackled so far.

“The *emotional* intelligence (EQ) is a prerequisite that triggers the intellectual abilities, because it gives them meaning and highlights them. Experts define the concept of emotional intelligence as one's ability of observation, understanding and monitoring of one's emotions and the emotions of other people, separating them from each other, and the knowledge to use these findings to influence the work and guidance of one's coworkers. Some persons talk about emotional intelligence as a social skill making us humans happy with ourselves and in relationship with others. The emotional intelligence addresses human emotional needs, initiatives and real values”.

“The *spiritual* intelligence is the intelligence that allows us the deepest purpose of life, its highest values, meaning and deepest motives. Spiritual intelligence is the way we use our process of thinking when we decide and when we do things that we think are worth doing”.

“In order to create wealth (spiritual capital), which results from the purpose of life, life values and the basic meaning of life, we must have a sense for purpose of life and its values and the sense of the basic meaning of life (spiritual intelligence)”.

“The spiritual intelligence as the inner life of mind and spirit as well as their links with the wider world, and as the ability to deeply understand the existential issues at multiple levels of consciousness and awareness, and as the soul, which is the lifeblood of creative evolution”.

“Spiritual intelligence is intelligence of the soul, which comes from the heart and the universe. This is the intelligence, which lets us tackle and solve questions of meaning and evaluate whether a way is better than another one“. “It differs from religion”.

“The *physical* intelligence is a primary intelligence of the living organisms based on the sensitivity and responsiveness to the energy field. It enjoys support of the nervous system, which is its biological extension. The physical intelligence serves the individual to adapt to changes in his/her environment and is actually responsible for maintaining the good condition of the organism and its consistent operation.”

“The *social* intelligence (SI) is physical intelligence and sensitivity in relationships, which is complemented by one's mental awareness and the ability to control and design one's own behavior. The notion that effective leadership is about having powerful social circuits in the brain, prompted researchers to extend the concept of emotional intelligence, and they comprised a more relationship-based construct - the social intelligence. SI is a set of interpersonal competencies built on specific neural circuits (and related endocrine systems) that inspire others to be effective. SI is also the ability to get along and to cooperate well with others; it includes an awareness of situations and the social dynamics that can help a person achieve his or her objectives in dealing with others. It also involves a certain amount of self-insight and a consciousness of one's own perceptions and reaction patterns.”

“While some authors have tried to stretch the emotional and social intelligence to let them have the same meaning, it was pointed out that they are two distinct dimensions of competence, although the social intelligence is separate, but complimentary to emotional intelligence. Social intelligence is mostly under influence of the environmental factors and emerges from one's past experiences with other people in one's environment; therefore, the verbal and communication skills are very important for one's high social intelligence. Social intelligence turns out to be especially important in crisis situations”.

5. INTELLIGENCE IN RELATION WITH THE CONCEPT OF KNOWLEDGE-CUM-VALUES MANAGEMENT

Intelligence of all kinds is obviously a human attribute that humans can learn, have from birth and implement. E. de Bono's methods (lateral thinking, 6 Thinking Hats, CoRT) can be helpful. We can consider them the tools of knowledge management, because they are about thinking, but the Six Thinking Hats tackle emotions, too. Hence, they can help humans to reach beyond knowledge management that addresses the rational intellectual intelligence alone. This difference matters: this limitation makes knowledge management more one-sided than the concept of knowledge-cum-values management (Šarotar et al, 2014; Zlatanović, Mulej, 2015). The latter concept is new, but its background lies in the Dialectical Systems Theory (Mulej, 1974; Mulej 1979; ..; Mulej et al, 2013) that speaks about the interdependence of knowledge and values as components of the subjective starting points of any human activity, including thinking. See Tables 1 – 5 (for details in English see: Mulej, 2013).

The notion of the dialectical system is visible in Table 1.

Table 1: Definition of a system and a dialectical system in DST

<p>A system is at the same time:</p> <p>1) From the viewpoint of the mathematical formalism: a round-off whole, i.e. a network with any/no content; and</p> <p>2) From the viewpoint of its content: a partial (one-sided) picture / representation (mental and/or emotional) of an object, which one considers / deals with from either a selected viewpoint or a number or even a system (i.e. a network of interdependent viewpoints that differ from each other and are therefore complementary to generate a synergy) of viewpoints.</p> <p>Thus, a system is holistic, formally, and one-sided, in content, at the same time.</p> <p>A dialectical system is a system (formally) of all essential systems (in content) presenting the same topic / object from different viewpoints, which are therefore interdependent and interactive; they make a synergy.</p>

Table 2 Relation between reality and holism/realism of human consideration of it

Level of realism of consideration of the selected topic	Level of simplification of consideration	Viewpoints of consideration taken in account	Components taken in account in consideration	Relations taken in account in consideration
Existing object to be dealt with	None	All existing	All existing	All existing
Dialectical system	Small – requisite	All essential	All essential	All essential
One-viewpoint system	Big due to specialization	Single – selected by specialization	Selected inside the boundaries set by the selected viewpoint	
Model of the one-viewpoint system	Big due to specialization and modeling aimed at clear presentation	Single – selected by specialization and simplified to be clear	Selected inside the boundaries set by the selected viewpoint and shown in a simplified – modeled way	
Total / all viewpoints system	None	All existing	All existing, which is impossible to attain individually or in a normal-size team	

The essence of the concept of the dialectical system and related law of requisite holism/realism and wholeness is well expressed by Wilby (2005: 388, quoted in Mulej, 2013), although she leaves open the question of viewpoints selected and thereby determining the boundaries of study: “The goal of holistic study is not to look at ‘everything’. Instead, it is to make a decision about what is relevant to the study and what is not and to know and understand why those choices were made. The biases and interests affect the choice of what is

likely to be included and excluded (i.e. what is in the system as opposed to what is relegated in the environment of the system).” What Wilby calls holistic, we call requisitely holistic, to be precise and clear. Mulej added methods to make the requisite holism doable (Mulej, 1979 and later).

Why is the requisite holism important? There are scientists and practitioners attempting to say that their discipline offers the only unique and unifying basis for dealing with systems. They do not speak of worldview, which Bertalanffy does, but of professional/scientific disciplines. Can they be right? Yes, in their own perspective they can. Can they be sufficient for holism? They can be so rarely. Nobody can be really, i.e. totally, holistic: teams can perhaps be requisitely holistic with interdisciplinary creative co-operation.

Table 3 The selected level of holism and realism of consideration of the selected topic between the fictitious, requisite, and total holism and realism

←-----→		
Fictitious holism/realism (inside a single viewpoint)	Requisite holism/realism (a dialectical system of all essential viewpoints)	Total = real holism/realism (a system of all viewpoints)

Table 4 Interdependence of values, culture, ethics, and norms, i.e. VCEN

Individual values (interdependent with knowledge)	↔	Culture = values shared by many; habits making them a rounded-off social group
↕	×	↕
Norms = prescribed ethics on right and wrong in a social group	↔	Ethics = prevailing culture about right and wrong in a social group

Table 5 The law of hierarchy of succession and interdependence, applied to the work procedure in general

→ Outer influences, preconditions, circumstances & ones' own knowledge-cum-values →		
→ Perceived influences, preconditions, circumstances →		
→ Definition and development of starting points as a requisitely holistic system →		
The outer starting points, part 1: objective / outer needs	↔ The subjective starting points for the given case: ↔ 1. Values and other emotions (what for? preference) 2. Knowledge on contents (what & why?) 3. Knowledge on methods (how & why?) 4. Talents etc.	The outer starting points, part 2: objective / outer possibilities
The dialectical system of essential viewpoints →		
→ The selected viewpoint/s →		
→ Selection of the perceived objective needs & the perceived objective possibilities →		
→ Selection of the preferential needs & the corresponding possibilities →		
→ Definition of (well, i.e. requisitely holistically, grounded, not merely desired!) objectives: What do we want (with good reason/s)? →		
→ Definition of tasks system/s: What do we have to do in order to attain objectives? →		
→ Definition of work procedures for every task: How must we proceed to perform? →		
→ Operation: performing all the tasks according to procedures prescribed/foreseen →		
→ Results comparable to tasks, each of them contributing to attainment of objectives →		
→ Influence over the foregoing phases of the process where needed (Returning to the beginning of the entire process, or a phase of it, as appropriate) →		

In other words: thinking, learning of thinking, and teaching for human behavior, including thinking, must aim at requisite holism that includes interdependence of all parts of the starting points, including the one of knowledge and values. Otherwise, the resulting action may be dangerous because of one-sidedness (all way to terrorism, global crises, and world wars). On this basis, Dejana Zlatanović and Matjaž Mulej (2015) stated: “Knowledge-cum-values

management is not the same as knowledge management or values management. It is a more synergetic and holistic concept that implies interdependence between emotions and ratio. Knowledge-cum-values management presents a new, still not sufficiently researched area. If one, though, enters 'knowledge-cum-values management' in e.g. Google, the response is much poorer than for knowledge management. This may mean that professionals outside some soft-systems methodologies leave aside the interdependence of the values and knowledge. If, though, somebody has learned to shoot with a gun, does his or her choice of the target – e.g. a piece of paper or a human – depend on knowledge or on values? Obviously, on values, but not exclusively: values do not exist in separation from knowledge, but in interdependence enabling interaction. Emotions and ratio, the left and right brain hemisphere are interdependent. Hence, knowledge management can target knowledge as the rational part of human personality without tackling values, seemingly only. In the practice of labor relations, education etc. one tackles values by motivation in order to activate knowledge and creativity, and one develops knowledge in order to enhance ambitious values”.

Next: “So far we discussed individual knowledge management and individual values management. But, eventually the influential person’s values grow to a group’s accepted culture, and to the prevailing ethics, once accepted in a community or society; this process makes ethics become rules of the community or society, even an international one, in the process of VCEN (Mulej, Potočan, 2007, quoted after Mulej et al, 2013). Procedures of knowledge-cum-values management may need to change, e.g. to include group dynamics, mass psychology, marketing communication, political propaganda, public media, school books, etc., as its tools. Though, these tools are reaching beyond our scope here; they could make an interesting field for potential future research”.

The level of holism of approach depends crucially on both the objective, i.e. outer starting points (outer needs and possibilities), and the subjective starting points; they are interdependent, too. See Table 5.

The outer starting points can mostly be detected and influenced to a limited degree only, e.g. by marketing (creating new needs and hence markets, e.g. of new mobile phones) or new scientific discoveries turning innovations applied in practice (creating new possibilities such as cars, airplanes etc. in transportation).

The subjective starting points of humans can receive influences by education that generates knowledge and values, i.e. the intellectual, emotional, spiritual, social, and physical intelligence - in interdependence.

Behind, e.g. conflicts, protesting and opposition, and agreement reaching there are emotional, spiritual, physical and social intelligences, too, not the intellectual intelligence alone. This fact brings us to the issue of values, culture, ethics and norms and their circular influence, again (Mulej, Ženko, 2004). Thus, one must replace the concept of knowledge management for the concept of knowledge-cum-values management in order to attain more, or even the requisite, holism in one’s approach and wholeness in one’s outcomes.

The deeply rooted and unavoidable narrow specialization of the contemporary professionals is naturally bound to their interdependence. So is it in relation to the interdependence of humans as individuals, nations, regional and supranational groupings that need to attain their requisite holism for the contemporary humankind to survive (see for details e.g. Hrast et al., ed., 2015; Lebe and Mulej, ed., 2014; Mulej, ed., 2013; Mulej, ed., 2014; Mulej and Dyck, ed., 2014; Mulej et al., ed., 2016). Therefore the global unions of progressive enterprises, the ISO International Standards Organization, European Union etc. support *social responsibility* as an informal systemic behavior, based on *interdependence* and aimed at requisite holism of

human behavior for humankind to find its way out from the current very dangerous global socio-economic crisis.

6. CONCLUSION

CoRT may be seen as a methodology of education supportive of attainment of requisite holism of human behavior that is not limited to knowledge, but addresses knowledge-cum-values management (education can be seen as a specific kind of management). CoRT may hence be applied as the entry to the process depicted in Table 5 to lead to the requisite holism depicted in the Table 3 by influence over the VCEN (Table 4) in order to come as close as possible to holism depicted in Tables 1 and 2 by application of all five intelligences. See Table 6.

Table 6 Impact of CoRT on human socially responsible behavior by knowledge-cum-values management

CoRT → education = knowledge-cum-values management → process of human work based on the subjective starting points → VCEN of social responsibility → requisite holism → success by knowledge-cum-values management in practice of former students impacted by CoRT → interest in CoRT

P.S.1.: The process of developing all five intelligences and the effort focused on requisite holism can receive a meaningful support from other methods of creative collaboration, for example: USOMID, 6 Thinking Hats and similar, which are reported elsewhere (e.g. Mulej et al., 2013).

P.S.2.: This process would also receive a meaningful support from the exercise of social responsibility; this is the responsibility of everyone for one's impacts on society, i.e. people and nature. We reported on this elsewhere, too (eg. Mulej, Dyck, 2014; Mulej et al., 2016 a, b, c; Mulej et al., 2013, 2014; Lebe et al., 2014; Oak et al., 2015).

P.S.3.: The success of this process importantly depends on personal features, expressed by 'the requisite personal holism'. We report this elsewhere (eg. Šarotar Žižek et al., 2014 a, b, c, d, e).

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DIVIDEND POLICY IN POLISH FAMILY AND NON-FAMILY FIRMS

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Abstract: *Dividend policy is continuously one of the main subject of survey in area of corporate finance. Most of study are directed to attributed variety between various group of companies and their specificity. In this paper the comparison analysis in area of dividend policy among Polish medium and big size family and non-family businesses were drown. The aim was to show the difficulties related to approach of measurement of dividend payout ratios. Moreover, it was proven that there are discrepancies between subjective decelerated factors and statistically confirmed causes of dividend policy. The results confirm that dividend payouts reasons are vast field for different survey and still open field for new findings that allow to boost knowledge of this part of corporate finance.*

Keywords: *dividend policy, family businesses, agency theory*

JEL Classification: *G 35, G31*

1. CONCEPTS OF DIVIDEND POLICY FORMATION

The dividend policy is currently one of the most crucial aspects of finance management in the company. Since first study of Lintner, who considered the relations between dividend payment ratios and company's efficiency and who claimed that business entities pursue to keep a fix level of dividend expenses because their expect better company's valuation on the market (Lintner, 1956). Later on the concept was detailed by Walter and Gordon models. Simultaneously over decades a few most prevalent theories were developed that try to clarify the mechanisms of dividend payments. With Irrelevance of Dividend Policy Theory the rate of payments does not affect the company's value because valuation is dependent on the rate of return and risk. Thus changes in dividend expenses only shift the structure of profits share among dividend and company's market valuation (Brigham et al. 2011). In opposition to the irrelevance theory the Bird-in-the-Hand Theory was formulated which claims that investors prefer to have dividend payments 'now' instead to wait for more risky capital gains (Keown, et al. 2007). The signal theory suggests that dividend payments sent a positive impulse to the capital market and investors who are refer to the forecasted company's performances. The purpose of dividend payments is to make aware that the company expect to achieve positive economic effects and net cash flows I n the future (Bhattacharya, 1979). According to the taxation system in most countries dividends are generally taxed higher than capital gains. This observation was a springboard to formulate the Tax-Preferences Theory. Investors, who prefer lower tax-payments will chose shares of companies that accumulate profits ant they will count on low taxed capital incomes. Therefore the market capitalisation of companies that pay lower dividends increases (Litzenberger et al. 1979). Dividend policy, in most the cases, is explained by the Agency Theory as a tool which mitigate various types of agency costs (Jensen at al.1976; Easterbrook,1984; Holder at al.1998). Nowadays agency conflicts are recognised as a main determinant of profit management policy (directions of profit allocation inside and outside company - Schmid et al. 2010; Michiels et al. 2015). As well quoted above as less prevalent theories provide some useful general insights into formation of dividend policy.

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On the one hand, and equally important, one should recognise specificity of dividend policy that is established under particular circumstances. On the other hand, not less substantial is to identify the actual factors that mould a level of dividend payments in practice. Hence, the aim of this paper is to present similarities and divergences in dividend policy among Polish family and non-family firms that represent medium and big size companies.³

2. THE SPECIFICITY OF DIVIDEND POLICY IN FAMILY FIRMS

As mentioned above agency conflicts are most frequently recognised as a theoretical concept used to describe dividend policy. In family firms agency conflicts may be located in various areas. These should occur in places typical for each company such as: owners and managers, main and minor shareholders, shareholders and creditors, or in the areas dedicated only for family business, e.g. the discrepancy between family shareholders and other family members who are respected as a family 'alders' but who do not play any role in organisation (non-shareholders, non-managers, called as family outsiders - Villalonga et al. 2015). While investigating family firms one should take into consideration that often owners of the company (shareholders) simultaneously perform managerial roles. Double presence of family members in a company should have an alleviated impact on classical agency conflicts between principals and agents (Ang et al. 2000). Lower tension would be transferred in dividend policy as a decrease of payments (Rozeff, 1982; Gugler, 2003; Michiels et al. 2015). On the one hand specificity of family businesses, in question, affects other kind of agency conflicts. Hence, higher dividend payments are used to mitigate the discrepancy among minor and dominant shareholders who expect stable amounts of dividend payments (De Cesari, 2012; Pindado et al. 2012). This is often connected with such ordinary reasons like the needs to cover costs of living and family maintenance (Isakov et al. 2015). One may distinguish at least a few other sources of tensions in family businesses related to dividend policy. For instance, differences might arise between members who would like to build up their private property and business-minded members; discrepancies between generations, owners performing managerial roles (and gain managerial privileges) and ordinary owners. Additionally, one other thing should be taken into consideration, e.g. the independence of the family firm that is connected with lower propensity to float shares on the stock market. Family firms that seek for investment capital without handing over a part of company's control to outsiders, will obviously prefer a higher level of profit accumulation. Irrespective of the reasons that cause tensions in family firms in the area of dividend policy, relevant management of profit allocation may alleviate various agency conflicts (Michiels et al. 2015). The question can be raised whether family firms that faced a number of potential reasons of agency conflicts spend more or less than non-family businesses to mitigate them?

3. PROBLEM FORMULATION

The available analysis in most case studies refers primarily to listed or big-size corporations. According to the study conducted by Dick and Pernstainer, there is no abundant and clear evidence whether family businesses expect a lower or higher part of their profits in a form of dividend (Pernsteiner et al. 2013; Dick, 2015). In previous study, Pernstainer presented the conclusion that medium-size family businesses in Austria pay lower dividend rates

³ The Data used in the paper were collected within National Science Centre project no. 2012/07/B/HS4/00455 "Corporate governance, ownership structure and other financial issues of family enterprises in Poland and Austria - a comparative analysis.

(Pernsteiner, 2008). Similar findings were presented by analytics from McKinsye&Company, who claimed that family businesses pay relatively low dividends because reinvesting profits is a good way to expand without diluting ownership by issuing new stock or assuming big debts (Caspar et al. 2010). In turn, other researches claimed that listed family firms in Switzerland are willing to pay more than non-family businesses (Isakov et al. 2015). The results of the study in the Euro Zone, proved that because of trust-generating mechanism applied by family firms outside Anglo-Saxon countries (which is a consequence of lower protection of minor shareholders in those countries), family businesses distribute higher and more stable dividends in relation to non-family firms (Pindadoa et al. 2011).

In the literature there are a lot of publications, of those one part confirms and the other negates a higher rate of dividend payment in family firms although it seems that there are more publications presenting higher expenses of family firms. Nevertheless, the situation is still blurred and it is a good starting point to further study that could become a building block which supports one or another part of current knowledge. Hence during the study the following research hypothesis were formulated:

- H1: Polish medium and big size family businesses achieve lower level of dividend payment ratios than non-family ones.
- H2: Needs in area of investment influence negatively the level of dividend payments.
- H3: Risk exposure shape the dividend spendings in this way that the higher risk, the lower expenditures.
- H4: The impact of company's owners play one of the most crucial role as a dividend payment factor.
- H5: Businesses both family and non-family seek to keep stable level of annual expenditures in form of dividend.

The solution of the main problem drown above boils down to the analysis of various aspects of dividend policy in Polish medium and big companies. The survey covered 758 medium and large companies that represented all industries according to the Industry Classification Benchmark (ICB). During an analysis process wrong and lack of data were further on excluded. The examined companies were divided into two groups by usage Substantial Family Influence ratio (SFI) introduced by Sabine Klain (Klein, 2000).

4. THE SPECIFICITY OF DIVIDEND POLICY IN FAMILY FIRMS AND CONTROVERSIES RELATED TO DATA INTERPRETATION

The structure analysis shows that the surveyed companies prefer rather to accumulate profits than spend them in a form of dividend. In 2013 only 40.9% of non-family businesses and 49.6% family firms declared they pay dividends (differences are statistically significant $p=0,05$). A year earlier an adequate percentages reached 41.0 % and 50.3% respectively and was also significant. The differences mentioned above indicated that to some extent more medium and big size Polish family businesses pay dividends. This conclusion goes in line with the view presented in the previous sub-chapter that there are more results of the survey confirming higher levels and ratios of dividend payments in the group of family businesses. In the group of family businesses paying dividends in the examined period, the highest percentage (22% in 2012 and 19.8% in 2013) declared the ratio of spending in interval 1-10%. Among non-family businesses those were dominant that allocate from 90 to 100% of their profits to dividend, although only a slight less number of business entities and in consequence percentage retained dividend payment ratios in interval above 0-10% (Table 1).

Table 1 Percentages of companies paying the following dividend ratios

Ratio of dividend payment	Family firms		Non-family firms	
	2013	2012	2013	2012
more than 0-10	19.8%	22.0%	18.5%	18.5%
11-20	12.2%	11.6%	15.3%	15.3%
21-30	17.4%	17.3%	12.1%	12.9%
31-40	5.2%	6.9%	6.5%	4.8%
41-50	14.0%	13.9%	10.5%	12.1%
51-60	5.2%	3.5%	4.8%	3.2%
61-70	3.5%	4.6%	2.4%	3.2%
71-80	4.1%	4.6%	5.6%	4.0%
81-90	1.2%	0.6%	3.2%	3.2%
91-100	17.4%	15.0%	21.0%	22.6%

Source: own study.

Other combinations of dividend payment ratios and companies' shares are also presented in the table above. The study did not provided enough evidence whether there are any relations between dividend payments ratios and the structure of companies (inside-group regularities) which could be termed as something like a distribution. Whereas the significant similarity of structures between family and non-family firms was identified (intergroup resemblance). Depending on the measure taken, similarity was achieved from 75.85% to 91.38% in 2012 and from 78.77% to 93.10% in 2013 (Table 2).

Table 2 Similarity of dividend payment structures among family and non-family firms

Type of similarity coefficient (Malina, 2004)	2012	2013
Base on Jeffreysa-Mattusita coefficient	0,9138	0,9310
Based on Bray'a-Curtisa coefficient	0,7585	0,7877
Walesiak Coeficient	0,8055	0,8328
Based on Minkowski metrics	0,8604	0,8850

Source: own study

Further studies showed noticeable problems with data interpretation. The sample taken to calculate the dividend payout rate may crucially influence the directions of interpretation and therefore the final conclusions. If the calculations are based only on the companies that paid any dividends (non-payers were excluded), it become evident that in the years 2012-2013 non-family firms spent on average 45% (each year) of their profits, while family firms transferred from 39% to 42% (calculations of main dividend payment rate were based on middles of the intervals of distributions payments' rates). These differences turned out to be statistically significant ($p=0,05$). Hence, it leads to the conclusion that Polish medium and big-size family firms allocated less part of their profits to owners/shareholders.

Yet, by contrast, whether the relevant figures are calculated for samples as a whole (included non-payers), quite a different picture emerged behind numbers. The average dividend rate for family firms achieved 20% in 2012 and 21% in 2013. Non family businesses at the same years spent 18% on each period (differences were statistically significant $p=0,05$). Thus, in this case it could be concluded that on average family firms transfer more profits to their owners.

The conclusion drown above is central for understanding, that only by choosing a research sample could the results be extremely different. As assumed in this paper a more relevant approach is to take into consideration only those companies that paid dividend (payment rate above 0). Such an approach seems to be less misleading and the final calculations are independent of the collected data. Furthermore, it eliminate the influence of differences in

structures among dividend payers and non-payers in each group of the surveyed companies. Hence, the ultimate conclusion is that Polish medium and big-size family companies actually pay dividend expressing lower payout rates. Subsequently it provides another argument to animated debate that supports a thesis related to lower propensity to payout profits for owners/shareholders in the group of family businesses.

The next step of the survey was to assess factors that mould dividend policy in each group of companies. Both family and non-family businesses indicated that needs in the area of investment expenditures are the most crucial reasons that impact the amount of dividend payouts. Such interrelations were confirmed by 48% of family and 55% of non-family businesses (Table 3).

Table 3 Main determinants of dividend policy

Indicators	Family firms (percentage of attesting)	Non-family firms (percentage of attesting)
Annual dividend payouts are dependent on demand of the company in the area of investment finance	48	55
Annual dividend payouts are focused on the needs of the owners for finance liquidity	35	34
The higher risk exposure the lower are annual dividend payout is	41	46
Much attention is put to maintain a stable annual dividend payout rate	24	25

Source: own study

A huge impact on dividend policy was exerted by risk exposure. This opinion was expressed 41% family and 46 non-family firms. But in respect of this factor some ambiguous interrelation should be noticed. On the one hand, risk affects the level of dividend payments, and on the other hand, dividend payout ratios may play a role of a current and long term risk indicator of the company (Sharon et al. 2005). Therefore, the decrease of dividend payouts corrects the current liquidity. It could be perceived as a negative signal for various groups of stakeholders. In particular, may have effect on future credit conditions and be the reason of the grow of credit costs. Therefore, in particular circumstances dividend payout ratio may be a consequence of risk exposure and simultaneously it may raise finance risk of a company. Finance liquidity of owners, as a crucial reason of dividend policy, was declared by similar percentages of the companies (35% family businesses and 34% of non-family businesses). The results seem to suggest that the pressure of owners to get some transfers from companies is one of the important, though not most substantial, factors of dividend policy and may influence some chosen aspects of company's finance management.

The least numerous groups of companies and therefor percentages declared rather low extent of propensity to keep stable transfers to their owners/shareholders (24% family businesses and 25% of non-family businesses). It turns out down that dividends were used rather as a tool in company finance management than the sturdier and unchangeable factor.

The final analyses were focused on statistical confirmation whether the views presented by company's representatives go in line with company's behaviour in the field of dividend payments. In the models, dividend payout ratios played a role of a dependent variable, factors analysed above performed as independent variable and additionally chosen controls were introduced to the equations. Relevant models of regression confirmed that both family and non-family businesses needs in the area of finance liquidity were substantial factors of dividend policy (Table 4).

Additionally for family firms the maintenance of a stable dividend payout ratio was a significant factor of dividend policy. The regression analysis showed that in opposite to de declaration and conscious indications of the representatives that risk and investment resources are main factors of dividend policy in fact collected data bring forward other aspects. It occurred that more crucial are need and expectations of the owners than company as a business entity.

Table 4 Models of regression - dividend payout ratios vs. factors of dividend policy

Enumeration	NFB Dependent - dividend payout ratio		FB Dependent - dividend payout ratio	
	2012	2013	2012	2013
Constant	15,430	-3,685	21,570	2,786
IV				
Annual dividend payouts are dependent on demand of the company in area of investments finance	1,693	,806	-,313	,069
Annual dividend payouts are focused on the needs of the owners in a of finance liquidity	7,43*	7,95*	6,23*	5,53*
The higher risk exposure the lower are annual dividend payout	-2,787	-1,197	2,044	2,371
Much is struggled to keep stable annual dividend payout rate	,081	-,835	2,62***	2,55***
Controles				
Companys' age	-,172	-,137	,160	,197
Assets (log)	-4,029	-1,969	-3,736	-2,481
Sales revenue (log)	4,358	5,594	-,516	,210
Employment (log)	-6,702	-4,375	-8,522	-3,182
Sector (1-industry; 2 other)	2,226	,013	-1,401	-1,522
R	0,331	0,331	0,378	0,338
R Square	0,110	0,11	0,143	0,114
Adjusted R Square	0,076	0,076	0,116	0,086
R Square Change	0,110*	0,11**	0,143*	0,114*
F	3,273*	3,264**	5,319*	4,069*
N=	249,000	248	297	294
* p=0.001; **p=0.01;*** p=0.1				

Source: own study.

5. CONCLUSIONS

Dividend policy is still one of the key aspects of the comparison analysis between family and non-family firms. Unfortunately the analyses provide clear evidence that ultimate identification of similarities or discrepancies is still on going. The ways of hypothesis verification presented above only confirm that there is no simple answer who pay more and what the reasons of payments are. During the study hypothesis H1 (Polish medium and big size family businesses achieve lower level of dividend's payment ratios than non-family ones) can not be confirmed because of the interpretation of the data and measured similarities in the level of spendings. Hypothesis H2 (needs in area of investment influences negatively the level of dividend payments) was not confirmed by linear regression models in both family and non-family firms. Subsequent hypothesis H3 (risk exposure shape the dividend spendings in this way that the higher risk, the lower expenditures) was not confirmed by linear regression models in both family and non-family firms. Next, it means hypothesis H4 (the impact of company's owners play one of the most crucial role as a dividend payment factor) was totally confirmed in both groups of companies and the last hypothesis H5 (businesses both family and non-family seek to keep stable level of annual expenditures in form of dividend) was confirmed in the group of family firms.

As indicated above, on the one hand the directions of interpretation are dependent on the choice of a sample. This particular way of data collection can provide various results. On the other hand, a question could be raised how to measure particular aspects of dividend policy? This requirement seems to be especially crucial when the picture of dividend policy presented by representatives of a company as their subjective view do not corresponded with the pretty hard results obtained thanks to statistical analysis. It could be concluded that this situation is still vague although conclusions based on regressions models seem to be more accurate than ones base on subjective declarations.

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AN IMPORTANT DETERMINANT OF THE SUCCESS OF INNOVATIONS - THE COMMERCIALIZATION OF INNOVATIONS

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***Abstract:** In recent years innovations have gained in importance. They play a crucial role in business. Small and medium enterprises in the Republic of Serbia are currently struggling with various problems, but there are also the companies which have good products but not a good communication with the market. Even though they can provide good products or good services, these companies lack customers. A lot of small and medium enterprises quickly fail and disappear from the market due to inadequate profit. Therefore, it is not enough to make an innovation, but more importantly, to commercialize it and present it to the market and the customers. Marketing is a very important factor and a link between companies and customers. It is crucial to gain the clients' trust and attract them to buy a new product or use a new service. There are many ways to commercialize innovations. The aim of this paper is to examine the current status of the market in this regard.*

***Keywords:** Commercialization, Innovation, Small and medium enterprises, Profit*

1. INTRODUCTION

Creating new products or services is the imperative for companies in order to develop and survive in the turbulent and demanding market. If a company already has a product or service with which the customers are satisfied, but makes no changes in its business, it means that it does not listen to the market and the suggestions that come from the clients, thus risking its position in the market. Creating a new product, service or process that would attract new and keep existing customers is a very challenging, but at the same time, a risky task. Nowadays customers have very sophisticated requirements and a wide array of products on the market, but they are willing to pay more if those innovated products bring them greater benefits. This is the part of the market where companies can gain a competitive advantage, because if their products stand out in the sea of similar products or services, they will guarantee success.

2. LITERATURE REVIEW

Small and medium-sized enterprises (SMEs) have to be flexible and quick to react, since the monopoly position of big companies can be an obstacle that hinders their way to new clients. New products or services created by well-known companies find new clients more easily. However, the market today, although very dynamic, provides countless opportunities to all who offer a good product or service. Cooperation between SMEs and large enterprises increases profit for everyone. In his work Kotler (2008) states that each year more than 16,000 new products are presented to potential customers and only 25% of those products manage to find their way to customers, while in the end, only 10% is accepted. The companies that created those products have ensured a continuous profit from their sales.

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Development and design of new products represent a major cost and risk for all the companies that innovate. However, regardless of the percentage, companies must continually improve their operations in order to develop and promote their new products and services. Hence marketing is a very important business factor for a company, an important link between development activities and design of new products and finding new clients. Marketing is increasingly gaining in importance; it is important in the process of developing new products, but also in monitoring all the activities of research and development sectors. A product is anything that can be offered on the market and it need not be a tangible good. Therefore, innovation can be innovation of products, services or processes. In his work Schumpeter says that innovation is the introduction of a new product of unknown quality on the market.

In their book the authors Kotler and Armstrong (2009) suggest that those who create a new product evaluate it on three levels (Figure 1, source: Kotler, P., Armstrong, G., Principles of Marketing, 9th ed. Prentice Hall, Upper Saddle River, New Jersey 2001).

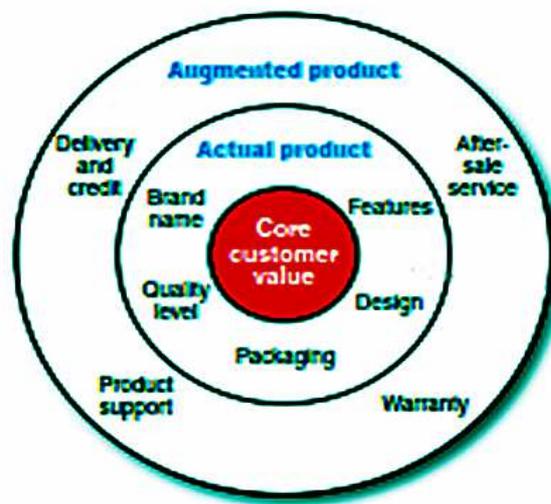


Figure 1 Three Levels of Product

Source: Kotler, P., Armstrong, G.

The first level is the core product, and it shows what a customer actually buys. It is important to define benefits that the product will provide for intended customers. The second level is called the actual product; characteristics, quality, style, name and packaging of the product are defined here. This level should develop and fulfill secondary criteria of the new product, and then offer additional benefits and services to clients: delivery, credit, warranties, services and more. This is all very important for customers. The third level is the global market where the competition is the greatest. Successful companies increase the performance of products in order to attract more clients, but by doing so, they have additional costs. This is where the biggest challenge for marketers begins: to persuade new potential customers and keep the old ones.

The challenges faced by enterprises when creating a new product are known as the new product development process (Kotler, 2000) with eight stages (Figure 2): a new production and strategy marketing, creating ideas, checking ideas, business analysis, product development, market testing and commercialization of a new product.



Figure 2 The eight stages of a new product

Source: Kotler, P., Armstrong, G.

Marketing department must be included in all these eight stages in order to successfully find customers for a new product or service and to gain their trust. When a company has a good product and achieves success in terms of profits, it is constantly compelled to listen to the market, because there are countless companies in the market that are ready to copy such a product, but also to offer a lower price. Therefore, the continuous introduction of new products is very important for companies if they want to survive in the market. As the author Berman (1997) states in his work, new products are important because they encourage and sustain sales growth, generate higher profits, require a lot of time to develop, influence the technological development of a company and meet customer needs. The authors Dalrymple and others (1990) state that companies that invest their money in development of new products gain a huge advantage over companies that imitate them. However, there are limiting factors that influence companies not to innovate and those are: lack of adequate ideas, division of the market due to strong competition, restrictions and standards defined by the government, a very expensive development process, lack of financial resources for implementation of ideas, shorter product life, and others. But when a good product is developed, it is important to create a good preliminary marketing strategy, which should consist of three stages. In the first stage, there should be a description of the size, structure and behavior of the target market, a plan how to sell a product / service, market share and projected profit in the first few years. The second stage of the strategy should contain the planned cost of the product / service, but also the distribution plan and budget, which will foresee the marketing activities related to the promotion of new products / services. The third stage should focus on a strategy of long-term sales and projected profit, and marketing mix strategy as well. Marketing mix is a combination of controlled marketing tools that businesses use to make a profit in the market and to increase sales. These include a product, price, distribution and promotion, but contemporary authors add a long-term customer satisfaction, environmental protection and control of rational use of resources. This marketing mix has two goals: communicational - to find customers for a new product / service, and operational - to create the conditions to make a profit. Both objectives are intended to familiarize customers with the new product / service, and to create a desire in the mind of customers to buy the product or use the service.

3. INNOVATIVE ACTIVITIES IN THE REPUBLIC OF SERBIA DURING THE PERIOD 2010-2014.

A number of world authors state that the only way that SMEs can survive and thrive in the market is to introduce new ideas into their business, new products and business processes (De Jong, Marsili, 2006; Wagner, Hensen, 2005). Innovation is a strategic tool for companies whose goal is to survive in the market and improve their competitiveness (De Jong, 2004; Laforet, Tann, 2006). SMEs remain under a great financial and technological control of large corporations because they are inferior to them in terms of technological innovation of products and processes (Harrison, 1994).

Every two years a report on the innovative activities of companies is published in Serbia, and according to the survey conducted by the Statistical Office, innovative enterprises are those businesses that introduced innovation of products, services, processes in the given period, as well as innovation in the organization or marketing, which are the guidelines proposed by Oslo manual (OECD, 2005). The research results are indicated in Table 1.

Table 1 Companies ranked by size, innovation and activities for two periods from 2010-2014.

Enterprises	Time period (years)	Total (number of enterprises)		Innovators (%)		Without innovations (%)	
		2010-2012 (I Period)	2012-2014 (II Period)	2010-2012 (I Period)	2012-2014 (II Period)	2010-2012 (I Period)	2012-2014 (II Period)
Small		9057	13863	40,8	37,4	59,2	62,6
Medium-sized		2264	2253	55,0	52,7	45,0	47,3
Large		520	543	66,2	68,1	33,8	31,9
Production		4122	4865	48,7	40,6	51,3	59,4
Services		7719	11794	42,4	40,4	57,6	59,6
Total		11841	16659	44,6	40,5	55,4	59,5

Source: Based on the data obtained from the site www.stat.gov.rs accessed on 14 August 2016 (report no.285. XLIII, 28.11.2013, no. 276. LXV, 10/22/2015)

As Table 1 illustrates, in the Republic of Serbia in the period 2010-2012, service companies were more innovative. The same applies to the period 2012-2014, which means that manufacturing companies do not innovate enough. The fact is that most new businesses that open in this market are based primarily on the service industry or trade, and there is a very small number of new production companies. This research also led to the conclusion that the size of a business entity is an important, if not a key factor for innovative activities in Serbia. Two-thirds of large companies are innovative, slightly over a half of medium-sized ones, while only one third of small enterprises are innovative. Perhaps the reason for this is that large companies have their own centers for research and development and more financial resources to follow market trends. Most non-implemented innovations/non-innovative companies in this study are from the territory of AP Vojvodina, up to 58.6% in the first observed period, whereas in the second period 62.6% of companies did not innovate in their business.

According to the data from Table 2, the situation is similar in both periods; there is approximately the same number of companies that innovate in products and processes, while the highest number of innovations are introduced in organization and marketing. Large companies introduce product and process innovations at the same time as well as innovations in organizing and marketing, about 40%. From these data it can be concluded that smaller companies have fewer innovative activities. Thus, a very small number of SMEs introduce

innovations in their business. Companies that supply electricity, gas and steam are usually the most innovative in this market. Those who have made some innovations in their business usually place them on the national market, but more and more of them turn to the European market, too.

Table 2 Types of innovation according to size of enterprises

Enterprises	Innovation of a product/service		Innovation of a business process		Abandoned innovation / still ongoing		Organization innovation		Marketing innovation	
	2010-2012	2012-2014	2010-2012	2012-2014	2010-2012	2012-2014	2010-2012	2012-2014	2010-2012	2012-2014
Small	17,6	18,5	15,8	17,4	5,3	9,6	28,0	21,9	27,3	21,2
Medium-sized	29,6	27,8	27,5	31,2	14,6	13,4	41,3	37,9	36,3	35,8
Large	43,3	39,4	38,8	43,1	23,1	32,6	50,2	47,1	43,3	37,9
Total	21,0	20,4	19,1	20,2	7,9	10,9	31,4	24,9	29,7	23,8

Source: Based on the data obtained from the site www.stat.gov.rs accessed on 16 August 2016 (report 285 - XLIII, 28.11.2013, no. 276. LXV, 10/22/2015)

The availability and distribution of the Internet, promotion and connectivity all over the world, not only facilitate business today, but also create bigger pressure on businesses and increase competition in the market. A new technological revolution brings fundamental innovations in the production and dissemination of information. Information has become key resource. These are the times of digital economy where innovation in business is necessity. According to the author Castells (Castells, 1998), the most important structural result of the impact of information and communication technologies is the network, i.e. the network society. A research conducted on the competitiveness of the countries is published every year and the situation on the list constantly changes. In the latest report of the World Economic Forum (WEF) on the competitiveness in the field of information and communication technologies (ICT), the Republic of Serbia is ranked 75th out of 139 countries (Table 3).

Table 3 Competitiveness in the area of information and communication technologies for 2016

Country	2016 (rank of 139 countries)	2015 (rank of 143 countries)	Change compared to the previous year	Group (which economy a country belongs to)
<i>Singapore</i>	1	1	No changes	developed economy
<i>Finland</i>	2	2	No changes	developed economy
<i>Sweden</i>	3	3	No changes	developed economy
<i>Norway</i>	4	5	+1	developed economy
<i>Slovenia</i>	37	37	No changes	developed economy
<i>Macedonia</i>	46	47	+1	Developing country (Europe)
<i>Montenegro</i>	51	56	+5	Developing country (Europe)
<i>Croatia</i>	54	54	No changes	Developing country (Europe)
<i>Serbia</i>	75	77	+2	Developing country (Europe)
<i>BiH</i>	97	No data	-	Developing country (Europe)

Source: Based on the data obtained from the site www.weforum.org accessed on 15 August 2016

Table 3 shows that the most developed economies of the world do not change their rank, and thus the rankings remain almost identical for years. Singapore holds the top spot as it has become the center of the world economy, and Burundi and Chad are at the bottom of the list. When it comes to world powers, the United States is ranked 5th on this list, while Germany only 15th on the list of competitiveness in ICT. According to the World Economic Forum Global Competitiveness Report for 2015, Serbia was ranked 94th on the list, which included 140 countries, and it got 3.89 on the Global Competitiveness Index (GCI), which ranges from 1 to 7. In comparison with 2014, GCI value for Serbia is reduced for 0.01, which combined with the results of other countries led to the unchanged position on the list. Switzerland continues to hold first place with the highest GCI value (5.76), while Guinea with the lowest GCI value (2.84) ranked last in 2015. Singapore is in the second place and the US the third. The biggest change among the top ten countries on the list was recorded by the Netherlands, which moved from the eighth to the fifth place on the list in 2015, while Germany ranked fourth (the fifth place on the list in 2014).

4. CONCLUSION

Serbian economy is at a turning point. The transition process, the ongoing reforms and EU accession talks are only some of the challenges waiting ahead. In order to strengthen the economy and economic growth it is necessary to strengthen and revive the manufacturing sector. The reforms that should improve and revive production are vital, and only then comes the commercialization of products on the market. There is a great competitiveness on the market and large companies have a strong marketing campaign to promote their new products because digital economy works in their favour. But this should not be an obstacle to small and medium-sized enterprises because they can get their chance in cooperation with large companies. Large companies diversify their operations to developing countries, as is the case with the Republic of Serbia. They take SMEs as their suppliers and subcontractors. SMEs only need to listen to the market, to be flexible and to have innovative ideas.

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USING THE SYSTEMS METHODOLOGIES FOR PROBLEM SITUATIONS STRUCTURING IN PRACTICE: EVALUATING THEIR EFFECTIVENESS

Dejana Zlatanović¹

Abstract: *Growing complexity and diversity of management problems imply a need for holistic approach to problems solving and decision-making. Therefore, management problems in contemporary enterprises should be observed and explored as the management problem situations, namely the systems of problems. Hence, the various systems approaches to problem solving, i.e. systems methodologies for problem situations structuring have been developed. Despite the fact that systems methodologies are widely used in practice in numerous and various areas, there are some difficulties in assessing their effectiveness. Accordingly, the paper explores the key issues in assessing the effectiveness of using the various systems methodologies and highlights the key contributions of systems methodologies' applications. Taking into account that different approaches for evaluating the effectiveness of systems methodologies have been distinguished, a conceptual framework for evaluation that brings together the context, purposes and performance of systems methodologies' applications is presented in the paper.*

Keywords: *holistic approach to problem solving; problem situations; systems methodologies for problem situation structuring; systems methodologies' applications; evaluation of systems methodologies' effectiveness*

JEL Classification: *M10, M21*

1. INTRODUCTION

Global economic circumstances, resulting in increasing complexity of contemporary business environment, require new creative approaches to problem solving and decision-making. Due to ambiguity and uncertainty, along with complexity, dynamics and interactivity, as key characteristics of management problems in contemporary organizations, they should be researched as management problem situations, i.e. as a system of real management problems.

In conceptual framework of systems thinking, problem situations are researched in the way that systems ideas are used to enable appropriately arranged thinking about real world problems, i.e. to provide decision-makers with appropriate theoretical and methodological support. Creative dealing and managing the problem situations imply using the different systems methodologies for problem situations structuring (Jackson, 2000; Jackson, 2003; Petrović, 2004). Despite their numerous applications in practice, one can ask how to evaluate the effectiveness of using the systems methodologies in practice? Accordingly, the paper deals with different approaches in assessing the effectiveness of systems methodologies and introduces the framework for evaluation that brings together the context, purposes and performance of systems methodologies' applications. Respecting the potentials of using the systems methodologies for problem situations structuring in contemporary organizations, the purpose of the paper is to point out the different approaches and difficulties in evaluation of effectiveness of systems methodologies.

In accordance to research subject and purpose, the paper is structured as follows. Firstly, the key features of systems methodologies for problem situations are briefed. Then, some characteristics of using the systems methodologies in practice as well as areas of systems

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methodologies' applications are emphasized. Finally, the key issues in evaluating the effectiveness of systems methodologies and multi-dimensional framework for evaluation that links context, purposes and performance of systems methodologies' applications are presented.

2. BRIEFLY ABOUT SYSTEMS METHODOLOGIES FOR PROBLEM SITUATIONS STRUCTURING

Systems methodologies can involve, connect, and expose different perceptions of the researched problem situation, as the basis for generating the consensus in action or facilitating negotiation. In fact, systems methodologies for problem situations structuring can be useful and should be employed if they: accommodate different perspectives, function through interaction and iteration, generate valid problem formulations and action implications (Rosenhead, 1996; Mingers & Rosenhead, 2004). Systems methodologies for problem situations structuring do not only strive to provide for mutual understanding, but also help decision-makers in obtaining the "broader picture" which offers new insights into the problem and possible solutions. Some of the issues dealt by systems methodology include the following (Midgley, Cavana, Brocklesby, Foote, Wood, & Driscoll, 2013): What worldview and which aspects of problem should be included in the analysis and decision-making, and which should be excluded? What are the different problem perspectives and which values and assumptions support them? What interactions within the organization, and those with the relevant environment, lead to desired or undesired results?

Systems methodologies possess the ability to adequately model the problem situation so that participants in a given strategic decision-making process can clearly identify the problems and issues. Each methodology is suitable for a particular type of task and is not universally applicable (Von Winterfeldt & Fasolo, 2009). Because of a large number of different systems methodologies, one possible approach to systems methodology systematization is the System of Systems Methodologies (Jackson & Keys, 1984). System of Systems Methodologies enables responding the following question (Petrović, 2010, 362): Which problem situation can be managed by which systems methodology? Thereby, the choice of the methodology should be based on findings derived from SSM, rather than determined by it. One can say that SSM is a result of overall development of systems thinking and management science in the second half of 20th century (Figure 1).

The classification of systems methodologies presented by the Figure 1, and supported by appropriate systems metaphors as well as differentiated by various systems paradigms, shows that each systems methodology can be successfully applied to one problem situation, but not to another. In addition to this, of relevant importance is to emphasize that one systems methodology can be applied to the problem situation as dominant, but it can be applied as supportive to another problem situation. For instance, Organizational Cybernetics is a dominant methodology in complex-unitary problem situations, but it can be applied as methodology that supports, for example Soft Systems Methodology, which is appropriate for complex-pluralist problem situations.

3. USING THE SYSTEMS METHODOLOGIES IN PRACTICE

Systems methodologies, based on different paradigms and supported by different systems metaphors, are very frequently used in practice. This is demonstrated by numerous case studies published in various journals and books, as well as by different empirical researches

of using the systems methodologies in practice. In researching the different methodologies/methods' uses among respondents from different scientific areas (the respondents from technical and natural sciences are dominant, with only 9% of respondents from social sciences), Munro & Mingers (2002) obtained the following results (Figure 2): According to the sample structure, quantitative methods, such as statistical methods, mathematical programming and simulation methods, are most widely used. Regarding the soft systems approaches, Soft Systems Methodology is the most frequently used, and using the scenario analysis, influence diagram, Delphi technique and cognitive mapping, follows it. In addition to this, applications of System Dynamics, Viable System Model and Strategic Choice are corresponding to the sample structure.

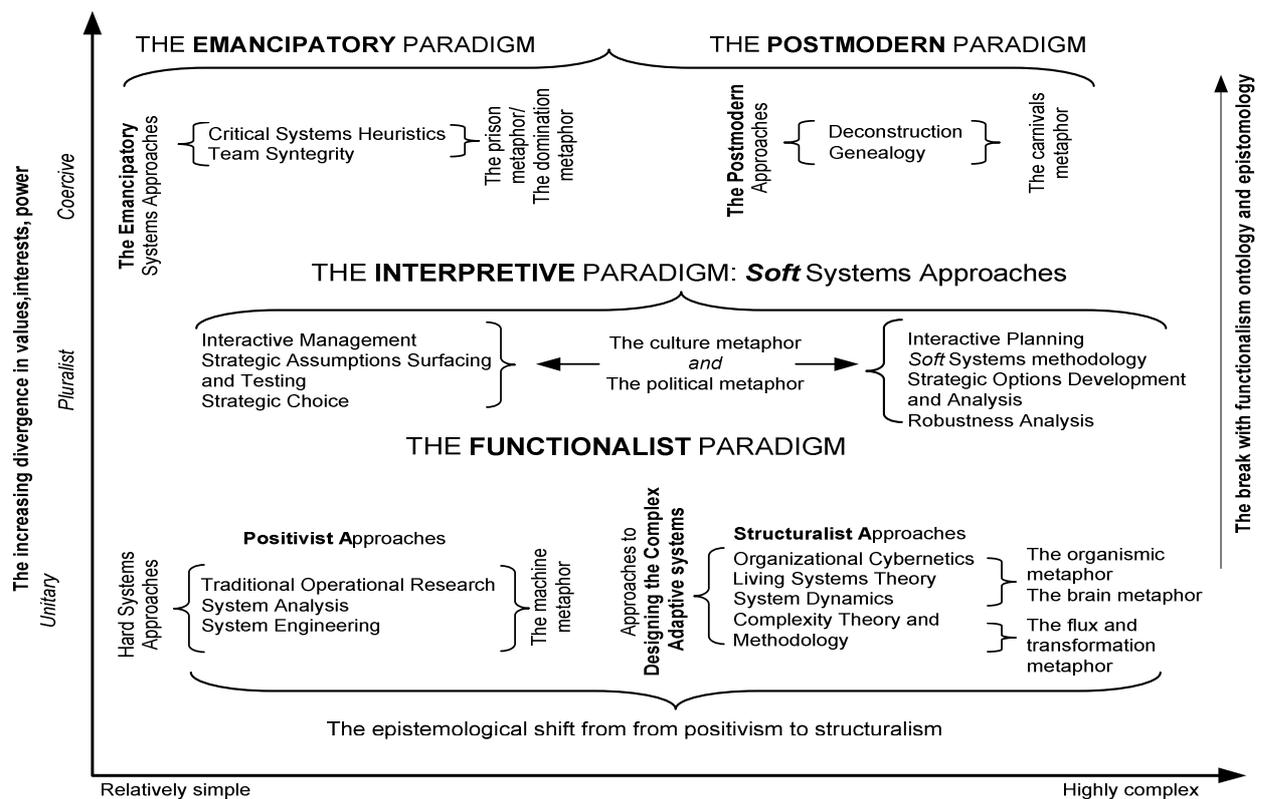


Figure 1 The holistic theoretical-methodological and practical approaches to managing the problems in organizations

Source: Petrović, S. P. 2013.

Since management problems in enterprises can predominantly be researched as complex-pluralist problem situations, it is important to emphasize that Cybernetics, i.e. Organizational Cybernetics as contemporary functionalist systems approach to management, has contributed the most to researching the complexity, i.e. to complex problem solving (Zlatanović, 2015, 33). Also, System Dynamics has contributed to researching the causal, i.e. feedback structures of complex systems. Recently, Complexity Theory has significantly contributed to researching the complex problems. Mingers & White (2010) presented a review of case studies and areas in which the above-mentioned methodologies are most widely used. These are the following: supply chains, production, information systems, sustainable development, etc. (Mingers & White, 2010, 1149-151).

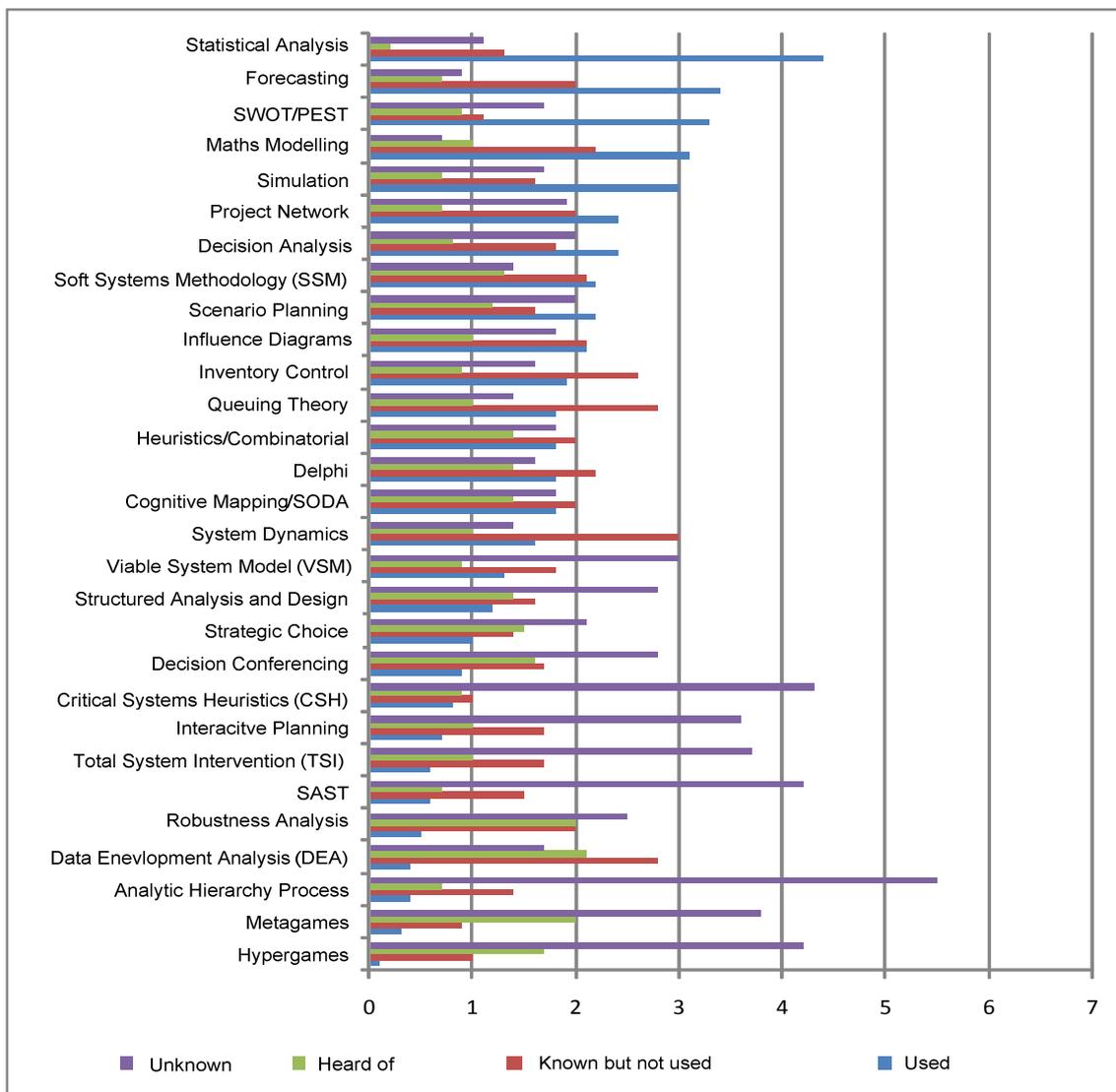


Figure 2 Usage of different methodologies/methods

Source: Adapted from Munro, I. & Mingers, J. (2002), 373

On the other side, soft, i.e. interpretive systems approaches has mostly contributed to researching the pluralist problem situations. It is about the group of interactive and participatory approaches which are appropriate for situations characterized by multiple actors, multiple perspectives, incommensurable and/or conflicting interests, prominent intangibles, and key uncertainties. In addressing such situations the most complex is framing the problem, i.e. defining the context and issues constituting the problem. Soft systems approaches offer support in such situations through modelling and group facilitation in order to stimulate dialogue and deliberation about the problem domain, and reach shared understanding and joint agreements with respect to it. Accordingly, Soft Systems Methodology, Interactive Planning, Strategic Assumptions Surfacing and Testing can be singled out as the most widely used soft systems methodologies (Mingers & White, 2010; Zlatanović & Mulej, 2015).

Soft systems approaches impact on problem situations structuring have been extensively researched (Joldersma & Relofs, 2004; Mingers, 2011; Mingers & White, 2010, Paucar-Caceres, 2000; Paucar-Caceres, 2009; Paucar-Caceres, 2010; Rosenhead 2006; Mingers & Rosenhead, 2004). Their impact can be measured by the following variables: experiences with

the method/methodology; attractiveness of the method/methodology; participants' perceptions of effectiveness of the method/methodology; researchers' perceptions of effectiveness of the method/methodology (Joldersma & Relofs, 2004, 697). Apart from the above-mentioned, their contribution and popularity are researched by the number of their appearing in *Web of Science* or *Scopus*, an/or number of appearing in certain journals, such as *European Journal of Operational Research*, *Journal of Operational Research Society*, *Interfaces*, *Omega*, *Operations Research*, *Management Science* (Mingers, 2011; Paucar-Caceres, 2010). Although these researches demonstrate that soft systems approaches are significantly used, one can also observe that these uses are not geographically dispersed, i.e. that the uses of soft systems approaches are especially concentrated in some geographic areas, such as Great Britain (Mingers, 2011; Paucar-Caceres, 2010).

Respecting the above mentioned, one can conclude that different systems approaches are widely used in different areas of managing the contemporary organizations, such as: business strategy formulation, knowledge management, project management, information systems, quality management, etc. (Mingers & White, 2010). Therefore, using the systems methodologies is increasing and the applications are different, which can, in some way, confirm their effectiveness. However, there are not enough evidences how successful they are as well as whether some methodology is more successful than other. Also, it is not so clear how systems methodologies should be evaluated and what is the purpose of such evaluation. It can be because systems methodologies' uses are observed as complex interventions which produce changes and actions at both the level of individual and the level of system (White, 2006, 842).

4. HOW TO EVALUATE SYSTEMS METHODOLOGIES FOR PROBLEM SITUATIONS STRUCTURING?

Popularity, as well as the fact that systems methodologies' uses are repeated, can be some evidence of their effectiveness. But, the question is if the contribution of systems methodologies can be measured more rigorously regardless of whether the uses/disuses of methodologies are compared or different systems methodologies are mutually compared. This is not so easily to response, since there are different views. On the one side, there is a view according to which effectiveness of using the certain methodology cannot be significantly measured. It further implies that validation of effectiveness and successfulness of systems methodologies must be theoretically and philosophically based (Mingers & Rosenhead, 2004). In fact, systems methodologies' contribution to Operational Research/Management Science (OR/MS) development must be considered from theoretical perspective (Jackson, 2006). Accordingly, one can emphasize that the systems methodologies development may be observed as some progress within the System of Systems Methodologies which create a new paradigm in tackling the management problems in contemporary enterprises. Also, the new metaphors, which significantly differ from the dominant metaphor in traditional OR/MS, are developed. Respecting the above, systems thinking supported by systems methodologies, showed the path which OR/MS should follow. Furthermore, systems methodologies' contribution can be considered from methodological point of view, since they enabled numerous useful modeling tools and techniques (Jackson, 20006). For instance, root definitions and conceptual models of Soft Systems Methodology (SSM) are designed in order to make explicit the implications of different understandings of researched problem situation in enterprises.

On the contrary, Mingers & Rosenhead (2004) suggest that a methodology should not be evaluated only by the theory that underpins it, but by comparative validation through formal experiment. This point of view arises from the opposite philosophical postulates on which the various systems methodologies are founded. This further implies that the method/methodology can be isolated from the context in which it is applied as well as from the users, and then it can be compared with other methods/methodologies in controlled environment (Mingers & Rosenhead, 2004). Nevertheless, the point of view according to which every single application of the systems methodology in real world is unique event prevails. It is necessary to notice that some methodologies, such as SSM, are more sophisticated, and thus their application requires a more active participation and commitment of participants which can lead to significant organizational changes. For example, the role of participant in debate about some opposite views (e.g. debate about business strategy in crisis) cannot be simulated. In addition, the success of applying the certain methodology cannot be judged by anyone other than client themselves that experienced the process and the results. Even then, these judgments are mostly imprecise and qualitative (Mingers & Rosenhead, 2004).

Generally speaking, the two positions around the debate about the evaluation of the success of systems methodologies can be singled out (White, 2006, 843). These are positivist and interpretative point of view. Positivist point of view seeks to gain insights into specific goals and results as well as to use formal frameworks focused on quantification of systems methodologies' effectiveness. On the other side, according to interpretative point of view, the claims, facts and figures have meanings only if one gain insights into complex worldviews, interests and preferences of the participants, i.e. stakeholders.

In order to avoid the above-mentioned polarization of views about the evaluation of the success of systems methodologies, White (2006, 846-847) suggests more pragmatic approach by which we identify the more significant research issues and examine which evaluation method can address such issues. In favor of this approach, one can emphasize the following: Above all, it is not possible to include all situations, expectations and interpretations in only one evaluation process. Then, analysts do not justify always such diversity, which means that evaluation will not lead to final, genuine assessment. Pragmatist approach acknowledges that analysts are self-interpretive, purposeful beings that interpret the value of their activities and actions as contingent, complex, controversial and never-ending. In fact, the task of systems methodologies validation is to understand how, in the given context, different meanings and values produced by different actors fit into broader framework in which the interventions is realized. It is not about that all words which one says are interesting or about that any claim which can lead to conclusions about what is realized, how and what effect, should be rejected. The stance on evaluation of success of systems methodologies is that what actually needs to be changed in order to avoid "paradigms war" or conflicts regarding various multi-methodological approaches.

The challenge is to develop a framework which would be able to deal with complex and dynamic nature of systemic interventions. In fact, it is necessary to develop an approach which supports not only locally meaningful evaluations, i.e. evaluations of those affected by certain intervention, but also it should be able to generate data for longer-term quantitative comparisons of methodologies. This new framework is presented by the Figure 3.

The key benefits of this framework for evaluation of success of systems methodologies are as follows (Midgley *et al*, 2013, 150): Firstly, by encouraging the exploration of the context-purpose-methods-results relations, this framework provides the more detailed set of concepts and guidelines than any other in the literature. Then, "it incorporates a questionnaire that can

support both locally meaningful evaluations and longer-term comparisons between methods, thereby giving us the potential to move beyond the either/or debate that has characterized the literature in recent years”.

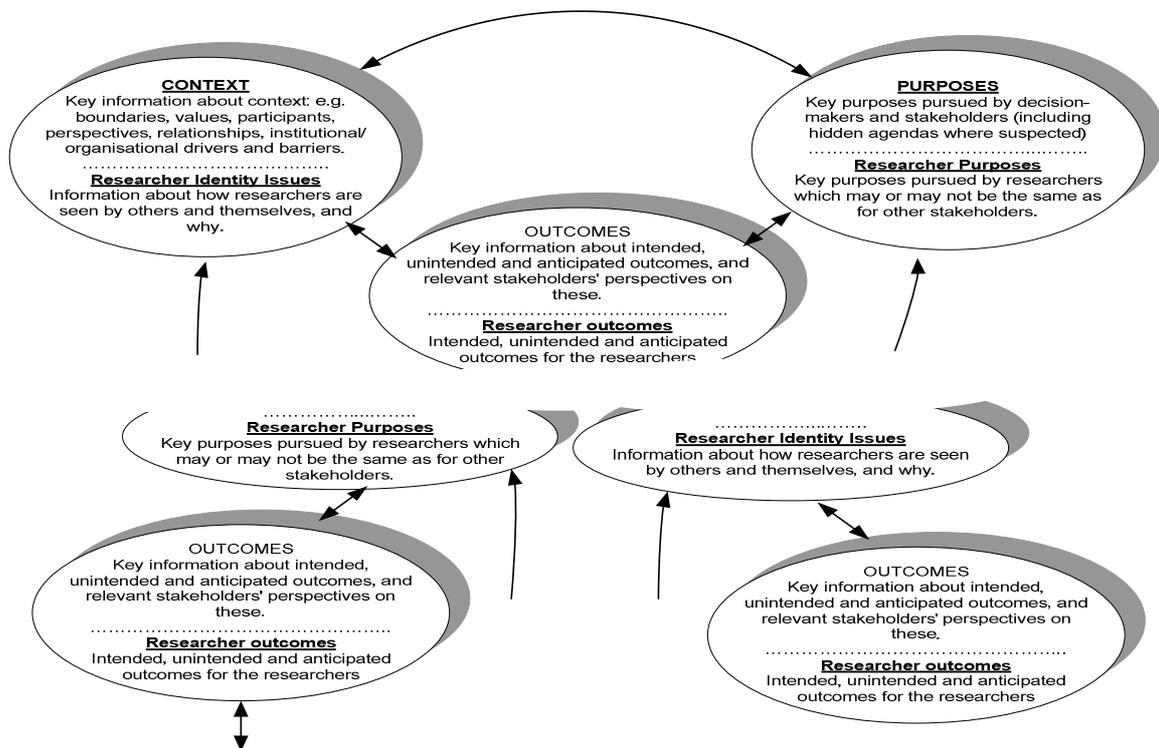


Figure 3 Conceptual framework for the evaluation of systems methodologies for problem situations structuring

Source: Midgley *et al*, 2013. 146

Concerning the limitations, we can identify the following limitations of presented framework (Midgley *et al*, 2013, 151-152): Within the context of a specific use of a method in a single intervention, the scope for the researcher is to avoid unwelcome conclusions, for example by exaggerating the effect of an aspect of context that was outside his or her control “thereby missing shortfalls in either the method or his or her own skill set”. Longer term comparisons of methods using the questionnaire present another limitation of this framework, and it comes from the observation that there is a strong movement advocating methodological pluralism or combined use of systems methodologies. On the other side, comparing the set of methods/methodologies and identifying their strengths and limitations is a relevant basis for combining the systems methodologies. It is also possible to compare the success of the set of methods/methodologies with another set of the methods/methodologies. Since there are not similar questionnaires with which this questionnaire can be compared, the validity and reliability of the questionnaire have not been tested yet, and this is a serious limitation of this framework. Furthermore, another limitation is related to the inability of standard metrics. Finally, no one group of researchers will be able to collect sufficient data on its own to enable the robust, longer term comparison of methods.

Despite the difficulties related to evaluation of success of using the systems methodologies, one can specify their strengths, limitations, opportunities and threats. These are the following (Rosenhead, 2006, 763-764):

Strengths:

- analytic basis for handling subjectivities and difference;
- recognition of the existence of a client system;
- acceptance of the significance of uncertainties;
- enabling participation and group formulation of problems situations.

Weaknesses:

- inability to concentrate on nonroutine situations inhibits institutionalization;
- unpredictability of outputs;
- non-transferability of the workshop experience can cause implementation problems;
- limited scope for evaluating the effectiveness of systems methodologies.

Opportunities:

- enabling the analytically-based procedures in wider management arena;
- offering the possibility for accepting the workshop based approaches by potential clients of organization;
- extension of clientele to non-managerial groups,
- improving the quality of public debate on policy.

Threats:

- base of skilled practitioners is limited;
- age profile of key originators and proponents of methods is not favorable;
- difficulty in 'taming' the wicked problems,

Taking into account extreme complexity and diversity of management problems in enterprises, we can conclude that individual use of systems methodologies can hardly enable holistic handling the all aspects of researched problem and their interrelations. In such circumstances, it is much better to use a range of useful, but often controversial methodologies/methods. Accordingly, we can conclude that combined use of systems methodologies represents a relevant research area.

5. CONCLUSION

Managing complex, dynamic and ambiguous problem situations in enterprises implies using various systems methodologies for problem situations structuring. Supported by different systems metaphors and differentiated by various systems paradigms, systems methodologies are widely used in practice, but their success is differently evaluated. Accordingly, there are different approaches to evaluation of success of systems methodologies. If the evaluation is based only on the empirical results, this cannot demonstrate overall effectiveness of systems methodologies. Therefore, evaluation of systems methodologies should include three key aspects: theoretical, methodological and applicative. In addition, researching the effectiveness of systems methodologies' uses should involve some issues of which the success of a methodology depends. Accordingly, of relevant importance is a new framework for evaluation which links context, purposes and performance of systems methodologies' applications.

The contribution of the presented research is reflected in a study of important issues in the contemporary systems science which have not been appropriately addressed by academic community in the Republic of Serbia, and which are related to using systems methodologies in practice and evaluation of their success. Accordingly and taking into account the above mentioned geographical dispersion of using the systems methodologies, one can emphasize that systems methodologies are not widely used in enterprises in the Republic of Serbia. Thus, one should point out the following important limitation of the research. Presented framework is not applied to enterprises in the Republic of Serbia, i.e. the questionnaire arising from this framework is not distributed to enterprises in the Republic of Serbia. Therefore, studying the possibility for applying the systems methodologies in enterprises in the Republic of Serbia is a relevant research area for future research.

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CORPORATE SOCIAL RESPONSIBILITY AS AN INSTRUMENT OF STRENGTHENING COMPETITIVENESS ON THE GLOBAL MARKET

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Abstract: *The process of globalization emphasizes the complexity of ethical issues, because the impacts, obligations and responsibilities towards the environment and society are often contradictory in different countries. Specifics of laws, customs, norms and standards, impose the need for companies to define codes of conduct that will guide them in resolving ethical dilemmas. The implementation of corporate social responsibility represents a big challenge for company management, on the one hand, but also a necessity, on the other hand, because it contributes to reducing risks and increasing opportunities for business success. It improves corporate reputation, profitability, employee motivation, customer loyalty, etc., and leads towards a sustainable competitive advantage on the global market. Therefore, the ethical behavior must be integrated into the corporate value system and must represent a significant part of the corporate business strategy.*

Keywords: *corporate social responsibility, business strategy, CSR codes, globalization*

JEL Classification: *M14, M31*

1. INTRODUCTION

Companies must consider the consequences of their business activities and take responsibility, not only at the company level, but also in the wider environment. They should not be guided exclusively by their interests, but must perceive the impacts of their operations towards the society and the environment. They should behave in accordance with the principles of sustainable development, and ensure the satisfaction of the needs of the present generations without compromising the ability of future generations to meet their own needs.

Companies should operate in a way to maximize their profits and shared value for their owners and stakeholders, and the society as a whole, in the same time preventing and reducing the negative impacts. They must find a way to „reconcile“ their private and public interests, and be successful and good „citizens“ as well. To achieve these goals they need to undertake various activities, mostly on a voluntary basis. The society in accordance with its norms and value system determines the framework of the company, and therefore frameworks differs in different societies.

2. THE IMPORTANCE OF CSR AND CSR CODES

There are many terms which are used to describe the concept of corporate social responsibility (CSR), such as corporate responsibility, corporate citizenship, corporate philanthropy, corporate ethics, sustainable development, etc. Consequently, there are many definitions explaining this phenomenon.

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The World Business Council for Sustainable Development put forward that corporate social responsibility “is the continuing commitment by business to contribute to economic development while improving the quality of life of the workforce and their families as well as of the community and society at large” (The World Business Council for Sustainable Development, 2015).

The European Commission in 2001 defined this term as “a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis”. The Commission redefined it in 2011 as “the responsibility of enterprises for their impacts on society” (The European Commission, 2011). This new definition highlights the need for companies to integrate (in collaboration with their stakeholders) responsibilities and concerns about the social, environmental, ethics, consumer and human rights, into their business strategies and activities.

The United Nations Industrial Development Organization points out it is “the way through which a company achieves a balance of economic, environmental and social imperatives (Triple-Bottom-Line-Approach), while at the same time addressing the expectations of shareholders and stakeholders” (The United Nations Industrial Development Organization – UNIDO, 2015).

CSR means ethical behavior of companies, i.e. the integration of social, environmental and economic standards in their system of values and culture. Key CSR issues include economic (reputation, market share, supply chain, eco-efficiency, risk management, etc.), social (human rights, responsible marketing, working conditions, economic development, etc.) and environmental issues (climate change, bio-diversity, product stewardship, etc.). These values are then involved in the business activities of companies and presented in their business strategies and policies. In addition to the specific CSR Codes adopted by individual companies, there are a global CSR Codes developed by various international organizations.

CSR Codes have a special importance in the business strategy and policy. They represent formal rules with which the company defines the way it expects and demands to be addressed ethical issues. They can be simply formulated in the form of the basic rules of acceptable behavior, such as regulations which employees must comply. But they can be also more complexed, in the sense that they define the company`s basic values and represent a guide for employees in resolving moral and ethical dilemmas. They are a good method for multinational companies to manage regulatory risk, as a potential alternative to public regulation and social risk, as an answer to civil society`s demand for more responsible business (Levis, 2006, p. 51).

Some of the most frequent issues related to CSR Codes are: conflict of interest, receiving and offering gifts, confidential information protection, discrimination, sexual harassment, bribery, stealing by employees, companies` property use, etc. CSR Codes can not provide an adequately solutions for every ethical situation or problem, because many ethical dilemmas are too complex, so it is necessary to consider many different alternatives and potential compromises. In order to provide instruments that will help employees to assess these options and bring appropriate decisions, many companies organize trainings and consultancies. That way, employees can practice application of ethical values in hypothetical or imaginary situations, so they can easily and successfully apply them in real situations.

CSR Codes and trainings are of a great benefit to employees in recognizing and solving ethical issues, but company must establish a structure which will ensure successful implementation of solutions. It is very important management of the company to show that is

dedicated to the implementation of the defined value system and to coordinate its behavior with it.

3. THE CHALLENGES OF THE CSR IMPLEMENTATION IN THE DEVELOPING COUNTRIES

Although the issue of CSR is very important in the developed countries, the fact is that the processes of globalization highlighted the need for its implementation in the developing countries too. Cheap workforce and inputs encouraged multinational companies to dislocate bulk of their business activities, primarily the manufacturing processes, in the developing countries such as China, Vietnam, Indonesia, Bangladesh, Honduras, etc. Outsourcing has enabled companies to reduce costs, increase productivity and profits, and strengthen their global competitive position.

On the other hand, outsourcing of global production in developing countries has been an important source of employment generation (Barrientos et al., 2011, 319). Many of the new jobs have been filled by women and migrant workers who previously had difficulty accessing this type of wage employment, and they have provided new sources of income for poorer households.

Strong competition among producers led to a difficult working conditions and emergence of numerous sweatshops, characterized by child labor, exploitation of workers, low wages, working conditions that do not meet minimum standards, etc. One of the decisive moments in the implementation of CSR was the discovery of Nike's sweatshops in Indonesia in 1991. Although the company has been exposed to public criticism, it initially refused to take responsibility for abuses committed. The company made a turnaround in its business policy in 1998, by running a huge number of CSR initiatives. It managed to change the negative public perception of its brand, and represent a good example of how CSR implementation can influence and strengthen the competitive position on the global market.

Not only Nike, but also other well-known companies were carrying out similar activities, such as Victoria's Secret, Disney, The Gap, Adidas, Puma, Converse, Marks and Spencer, Ralph Lauren, Levi's, etc. They are using the savings in costs primarily for aggressive marketing campaigns. Very often public figures who cooperate with them, for example, as promoters of a certain brand, are associated with an unethical behavior as well. The name of the famous presenter Kathie Lee Gifford is still a symbol of exploitation of child labor, because in 1996 was discovered that in the production of Kathie Lee Gifford collection of the retail chain Wal-Mart were involved children 12 and 13 years old. Unfortunately, although the discovery of cases like these significantly influenced combating child abuse, there are still reports about children being slapped and beaten, sometimes falling down from exhaustion, forced to work 12 to 14 hours a day, and even some all-night 19 or 20 hours shifts, and often working seven days a week, for wages as low as 6 ½ cents an hour (National Labor Committee, 2006).

The lack of state regulation and institutions, activist groups, NGOs, etc., in developing countries, further aggravate the situation. Dilemmas also arise in situations when lower standards and regulations are applying by the same company in the developing countries in comparison to higher standards and regulations they must comply in the developed countries. Consequently, the various forms of commercial exploitation and questionable business activities, such as corruption, bribery, misuse of company's assets for political purposes, secret agreements which fix prices, insider information, lack of trade unions, etc., are common. Moreover, in certain countries they are accepted practice without which it is impossible to do business.

Great scandals and publicity influenced the launch of a number of actions with the purpose of reducing these abuses. Many companies which have been subject to criticism have become very active in the fight against unethical behavior. Great tragedies have led companies to voluntarily accept more rigorous production standards and to comply them, regardless of that the law in developing countries do not compel them. They have agreed CSR Codes to prohibit child labor and forced overtime work, provide appropriate health and safe working conditions, promote establishment of trade unions, determine minimal wages, etc.

On the other hand, there are claims (Choice Argument for Sweatshops) that sweatshops workers choose to work in sweatshops and that fact is a strong evidence that they believe that working in sweatshops is their best available alternative (Zwolinski, 2007, p. 695). It would be morally wrong to third parties to ban, boycott or legally regulate sweatshop labor. The Choice Argument seeks to shift the burden of proof onto those who wish to regulate sweatshop labor (Kate's, 2015, 192). It does so by forcing critics of sweatshops to specify the conditions under which it is morally permissible to interfere with sweatshop workers choice.

4. CSR AS A CORE BUSINESS STRATEGY

Companies today think about CSR as a way of creating reputation and value in consumer eyes. Market shares of companies which incorporate CSR in their business activities grow, and consumer loyalty to their brands is more pronounced. In the past, consumers usually based their purchasing decisions on price and product quality. Contemporary consumers are well-informed with plenty opportunities to choose between different products. They are more awareness about the social and environmental impacts of their decisions.

A lot of surveys show that they have nicer opinion about the companies that support solving social and environmental problems. In fact, contemporary consumers expect companies to behave in a socially responsible manner. They are more sensitive to negative CSR information than positive CSR information, even when negativity is born of omission. More specifically, all consumers react negatively to negative CSR information, whereas only those most supportive of the CSR issues react positively to positive CSR information. Therefore, managers need to be particularly cognizant about the hazards of being perceived as socially irresponsible (Sen et al., 2001, p. 238).

CSR affects company's market value partially through the mediator of customer satisfaction. Customer satisfaction plays a significant role in the relationship between CSR and firm market value, and a proper combination of both CSR initiatives and product-related abilities is important (Luo et al., 2006, p. 13).

Waste reduction, recycling, rational use of resources and energy, etc., reduce company's operating costs and improve its profitability. Investments in education, health, culture, sport or prosperity of local communities, improve not only company's image, but they strengthen employee's motivation, confidence and sense of belonging. The company is identified as a good employer and is more successful in recruiting and retaining quality staff. Such investments help company to be identified as a good neighbor as well, and to develop close relations with the community. Governments, especially in developed countries, take various steps in order to raise awareness and encourage companies to behave socially responsible.

CSR is no longer a moral issue, but a core business strategy and an instrument of achieving and strengthening competitive position on the global market. CSR should not be an add on company's policy. It should be integrated into its governance structure and strategy (Goel et al., 2014, p. 51). Therefore, it is a common business practice for companies to publish

voluntary reports about their CSR initiatives and achievements. They include annual sustainability reports, press releases, conference presentations, social media postings, etc.

It is not surprising that 83% of the 250 largest global companies in 2012 by the Fortune magazine's list, state that they have developed a CSR strategy. The most commonly cited opportunities of social and environmental change they identified are:

- Innovation of new products and services - 72%;
- Strengthen brands and corporate reputation - 51%;
- Improving market position/growing market share - 36%;
- Cutting costs - 30%, and
- Improved access to capital/improved shareholder value - 12% (*KPMG International*, 2013, p. 15).

The most commonly cited risks of social and environmental change identified are:

- Reputational risk - 53%;
- Regulatory risk - 48%;
- Competitive risk - 45%;
- Physical risk - 38%;
- Social risk - 36%, and
- Legal risk - 21%.

5. CONCLUSION

Unethical behavior of multinational companies caused various tragedies, illegal operations and abuses. Considering their financial power and diversification of production and distribution network, challenges of implementing CSR in developing countries are certainly complexed. But as a result of negative publicity many companies were forced to redefine their business strategies and policies and to take responsibility toward the environment and society.

Ethical behavior does not include only respecting the law, but also the values, norms and interests of the society in the home country and abroad. It implies a proactive approach in identifying, adopting and responding to ethical challenges. Many companies formulated CSR Codes and included them in their business strategies and policies as a uniform rules of conduct for their employees when moral and ethical conflicts and misunderstandings arise.

Companies must adjust their operations in order to eliminate or mitigate risks, on the one hand, and to create and increase chances, on the other hand. As opportunities and risks of social and environmental changes grow, CSR must become an integral part of the company's business planning and risk management. The company must assess the potential financial impacts of these opportunities and risks on its operations and market value. Well developed and implemented CSR contributes establishing close relations with all the company's stakeholders, especially with its employees, suppliers, clients and local communities. Relations with stakeholders are intangible and impossible to be copied by the competition, so they can provide a sustainable competitive advantage and a strong competitive position on the market.

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CONSUMERS AS OPINION LEADERS - THE CASE OF SERBIAN MARKET

Dražen Marić¹

Abstract: *Contemporary marketing environment is characterized by a noticeable trend of growth of investment in the company budgets for promotion, with a simultaneous decline in the return on these investments. The reason for this phenomenon can be seen in the fact that modern consumers increasingly express a loss of confidence in the information they receive from companies' traditional marketing communications. Such information includes only the positive and embellished aspects of the products and services which companies offer to the market. Consumers today have the most trust in other consumers - called opinion leaders - as sources of information about products and services offered on the market. Those consumers are very specific by the fact that they are seen in the eyes of other consumers as quite similar to them, completely honest, experts in certain fields in relation to products which are intended to buy, and highly credible. Advice, tips and recommendations of consumers - opinion leaders - largely shape the purchase decision-making process and consumer behaviour in general. A relatively small number of companies, especially in the emerging economies and markets, fully understand these market changes and act in accordance with them. The paper aims to point out the necessity of a detailed research of the phenomenon of consumer opinion leadership, the possible methods and techniques for identification of opinion leaders and their specificity, and to determine whether there is a statistically significant relationship between consumers' age and the product categories in which opinion leadership is manifested on the market in the Republic of Serbia.*

Keywords: *opinion leaders, consumers, word of mouth, age*

JEL Classification: *M 31*

1. INTRODUCTION

For a number of decades, marketing theory and business practice have been attempting to explain all developments on the market through the prism of interactions and relationships between competing businesses, and through interactions and relationships of these businesses with consumers on the market.

The current marketing environment and business setting are characterised by a diametrically changed view, in the sense that an increasing attention is paid to contacts and relationships established between consumers themselves on the market. The opinion accepted nowadays is that individual consumer behaviour on the market, their choices and decisions on the purchase and use of various products and services are most determined by these consumer interactions.

It is a known rule, which is almost accepted as a market law in all industries without exception, that satisfied consumers are the best sellers of products and services on the market. The reason for this claim lies in the fact that the individual – current consumer – who spreads information about a business and its offer of products and services through interpersonal word of mouth communication, in the eyes of other potential consumers, has a high level of credibility and trust, and thereby influence, far more than this credibility and influence is ascribed to marketing messages sent to the market by businesses.

The reason for such behaviour of potential and real consumers is in the fact that they find it very significant that these individual consumers in most cases are already possessed of the

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experience of purchase and use of products and services which are the subject of the purchase decision, but also because their word and suggestion, due to their sincerity, have a much more specific weight than any commercial advertisement. They have no direct material interest in the sales and success of the company's products and services on the market, so that potential consumers see these specific individuals as the most reliable way of reducing the risk related to the purchase of a product that has a very small frequency of purchase.

2. LITERATURE REVIEW

Individual consumers, possessed of a higher level of knowledge about product and services, and about producers and suppliers thereof, are referred to as opinion leaders. An opinion leader is a consumer who in most cases, but not necessarily, is the first to buy or use a certain product or service, but it can be any person whose influence on other consumers is significant, i.e. if other consumers consider them significant.

Maričić (2011, p. 277) defines an opinion leader as a “person who is often in a position to influence others’ attitudes and behaviour. A leader is a person who informs, persuades and encourages other consumers. It is personal informal influence which is based on appropriate knowledge (of products and services) and trust, which can, in communication with other people, lead to a change in their attitudes and behaviours”.

Hanna and Wozniak (2009) also point out the need to distinguish between several concepts related to the personal influence of one consumer on another. It is necessary to distinguish between opinion leaders who informally influence the beliefs, attitudes and behaviour of others, and agents of change who include individuals or organizations – political, religious, or simply businesses, which actively and formally wish to influence and change human, i.e. consumers’ attitudes, behaviours and beliefs because they have some kind of personal interest for it. On the other hand, the so-called shopping pals are individuals who spend time with their friends and acquaintances during their shopping trips and give them information, support and encouragement, expertise etc. Surrogate shoppers are individuals whom consumers, due to lack of time, knowledge or something else, engage to perform all activities necessary to make a decision and complete the purchase.

Van der Merwe and Van Heerden (2009) deal with the identification and possible use of opinion leaders, and point out that individual consumers who really feature as opinion leaders in a specific area due to their expertise and reliability, believe themselves to be opinion leaders for other areas as well. The authors also establish the correlation between individual perception of one's own leadership and other consumers' perception, that is, in most cases, when individuals believe themselves to be opinion leaders, and other consumers view them identically.

Stokburger-Sauer and Hoyer (2009) seek in their research to discover what it is that moves consumers to word of mouth communication and behaviour in the sense of taking over the role of leader opinion and market maven. Comparing these two groups of consumers that are mutually similar, the authors highlight a key difference - opinion leaders are much more loyal companies' consumers than market mavens; there is, therefore, a strong correlation between opinion leadership and loyalty. Opinion leaders appear across various product categories.

Lyons and Henderson (2005) research opinion leadership in the online environment and point out that this phenomenon is characteristic for both online and offline consumer environment.

Either independently or in cooperation with other authors, Solomon (2011) devotes a significant part of his research to individual consumers who are possessed of respectable

knowledge of products and services on the market, and that is why their opinions, evaluations, advice and criticism are taken by other consumers with the utmost level of reliability and truthfulness. These individual consumers are opinion leaders who influence purchase decisions of other consumers on the market. The author identifies some of the characteristics that may point to the fact that opinion leaders in the environment (p. 399) are:

- socially active,
- narcissistic,
- engaged in popular culture,
- active readers of specialized magazines and journals,
- follow and display fashion trends.

Keller and Fay (2012) point out that the growth in interest of marketing science and practice in word of mouth communication has also led to the growth in research into a particular group of consumers who generate and spread it, and whom the author refer to as ‘influential’, and who correspond to the role of opinion leaders. The authors point out their conducted study TalkTrack, which encompassed over 35,000 respondents, who included over 4,500 opinion leaders, and argue that consumers who generate interpersonal communication shape public opinions, and contemporary businesses must focus on these consumers and integrate them into their marketing strategies, otherwise they will not be able to achieve the necessary levels of marketing efficiency and effectiveness. Influential consumers are those who more frequently seek and forward further information, ideas, and recommendations among other consumers, whether they are asked to do by other consumers, or that they do it of their own initiative. Some of the findings of the study are:

- 13% of the population of the USA aged 13 to 69 are opinion leaders (about 30 million people);
- 90% of word of mouth communication occurs offline;
- an opinion leader realizes 184 word of mouth communications in a week, which is 70% more than the average consumer;
- opinion leaders daily generate about 4.5 billion interpersonal communications in the USA;
- 51% opinion leaders advise daily other consumers what, where and now to buy;
- 80% recommendations are related to food, 61% to entertainment, 61% to drinks, 60% for shopping, 53% to technical goods, 53% to sports and recreation, 50% to health, 49% to personal care, 47% to tourism and travel, 47% to cars, etc.

Aral researches the social impact in the process of diffusion of a new product where he identifies opinion leaders and the main agents of the social epidemic brought on by the new product. A high level of persuasiveness is the characteristic of every opinion leader, so that companies must apply word of mouth marketing, i.e. previously identify and integrate these consumers and interpersonal communication that they generate, into their marketing strategies.

The concept of opinion leaderships was also dealt with and received a significant contribution by Schiffman and Kanuk (2004, p. 500), who identify it essentially with interpersonal communication and define it as a process in which an individual – opinion leader – affects informally the attitudes and actions of other individuals, whom they call opinion seekers or recipients. The authors characterise this type of relationship and interaction between consumers as non-commercial and independent and can be realised by means of various, increasingly electronic media, rather than just face-to-face contact.

Mowen (1995), Carl (2006), Van der Merwe and Van Heerden qualify those consumers who influence other consumers, their behaviour and purchase decisions by means of interpersonal communication as opinion leaders. Although they state certain characteristics, such as higher levels in relation to other consumers, in the sense of engagement in the product, information, social activity, social status within the same social stratum and class, and innovativeness, the authors emphasise that there is no causal relationship between these characteristics and real manifestation of opinion leadership.

Marketing theory and practice include numerous attempts to establish the characteristics of consumers opinion leaders, and a large number of studies have been conducted to this end, but the results of these studies have a very small practical value. The only thing that was confirmed by these studies is the fact that a certain similarity between consumers opinion leaders can be found if they are researched and analysed by product categories. The identification of opinion leaders is extremely complex and uncertain. An aggravating circumstance of using opinion leaders on other consumers is that the former act mostly locally, in their own social setting, which is why the range of their influence is relatively small.

Hanna and Wozniak (2009, p. 468) point out that most businesses, in their intention to substitute ineffective and inefficient traditional advertising to a certain extent with the interpersonal influence of opinion leaders, have a larger number of identification techniques, but in most cases use only four:

- sociometry – asking members of a social group questions;
- self-appointment – individuals are asked whether they regard themselves as opinion leaders;
- main informer – individuals are chosen who are regarded to know best whether there are and who are opinion leaders within a group;
- objective method – artificial creation of opinion leaders where individuals are targeted who are estimated as having leadership qualities, and then the latter are encouraged in various ways to spread their influence on other consumers, and then to make it beneficial for the business.

Valente and Pumpuang (2007, p. 883) gives a significant contribution in his research to the efforts to identify opinion leaders and proposes, in addition to the four above, more techniques of identifying opinion leaders, such as celebrities, self-selection, selection of human resources, positional approach, judgemental ranking, snowball method, etc., but these are more or less all derived from the four basic methods.

Marketing literature and practice do not say which technique of identification of opinion leaders is the most effective, nor is it suggested in which situations it would be desirable to use some of the above mentioned identification techniques. All of this confirms the thesis that the entire issue of opinion leaders, their identification, and especially use in a business' marketing strategy, is one of the most complex areas of business management and decision making.

3. METHODOLOGY

The survey conducted in order to confirm or reject the hypotheses set in the study is a segment of a complex project of research into the phenomenon of the impact of opinion leaders on consumer word-of-mouth communication on purchase decisions in the Republic of Serbia. The study uses a research method in the form of structured personal communication,

i.e. questionnaire, whose dissemination and response retrieval was conducted predominantly through the Internet – 80.2%, and personally – 19.8% respondents. The survey aimed at accomplishing the set research goals and confirming or rejecting the defined hypotheses was conducted from March until June 2016 on a defined stratified sample of 488 respondents. Stratification was performed by gender, respondents' age and education levels. The data gathered by means of the questionnaire were processed by appropriate mathematical and statistical methods, with the application of statistical SPSS software, as follows:

- Parametric tests:
 - Normal distribution - testing the hypothetical proportion value of the basic set, based on the sample;
 - Analysis of variance, i.e. ANOVA dispersion analysis with 1, 2, and 3 samples:
 - t-test
 - Levene's test

The questions from the questionnaire that was used were tested by Cronbach's alpha method. The main idea behind this idea is that the measure instrument that has more variables can be regarded as reliable if all the variables express the same method but slightly differently. Cronbach's alpha is 0.738, which points to high internal consistency, i.e. questions in the questionnaire stand in positive mutual correlation.

The scale applied in this research was used by Marić (2014), and consists of 30 items, but, due to paper length limitations imposed by the conference, this paper only presents a number of items, i.e. statements aimed to confirm or reject the defined hypotheses. The items are arranged with a Likert scale of offered reply options.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1	2	3	4	5

Ho: Manifestation of opinion leadership among consumers depends on their age - the older and more experienced consumers in the Republic of Serbia are more prone to seeing themselves as opinion leaders in comparison with younger consumers.

4. RESULTS AND DISCUSSION

Question 21. I regard myself as someone whom acquaintances often ask for advice and opinion, i.e. I give shopping advice to others more often than I seek it.

Table 1 Structure of respondents' answer according to age

Question 21		(1) up to 30 years		(2) 31-45 years		(3) 46-65 years	
			%		%		%
Valid	fully disagree	23	5.5	8	12.8	/	0.0
	partially disagree	38	9.2	15	23.8	2	18.2
	neutral	124	29.9	6	9.5	5	45.4
	partially agree	166	40.1	24	38.1	4	36.4
	fully agree	63	15.3	10	15.8	/	0.0
	total	414	100.0	63	100.0	11	100.0
	blank	/	0.0	/	0.0	/	/
Total		414	100.0	63	100.0	11	100.0

As p-value is higher than 0.05, it is concluded with the probability of 95% that there are statistically significant differences between age groups as regards question 21.

If p-value is under 0.01, the differences are HIGHLY statistically significant. As the difference is statistically significant, a post-hoc test is conducted!

Table 2 ANOVA

Question 21		Sum of squares	df	Mean square	F	Sig
	Between groups	19.526	2	9.763	8.945	.000
	Within groups	1648.109	1510	1.091		
	Total	1667.635	1512			

Table 3 Post-hoc Tukey test

Dependent variable	(I) Age2	(J) Age 2	Mean difference (I-J)	Std. error	Sig.
Question 21	1.00	2.00	.322*	.082	.000
		3.00	.279	.148	.143
	2.00	1.00	-.322*	.082	.000
		3.00	-.043	.164	.962
	3.00	1.00	-.279	.148	.143
		2.00	.043	.164	.962

The application of post-hoc Tukey test enables noticing the existence of a statistically highly significant difference in answers, between the group up to 30 years (1) and group 31-45 years (2). It is noticed that the group up to 30 years (1) gives significantly higher grades in comparison with the other two age groups when they answer Question 21, that they regard themselves as someone whom acquaintances often ask for advice and opinion, than they seek it. This structure of responses can be partially explained by the youth and energy of the youngest respondents, to whom self-confidence is not an obstacle.

Question 11. Most often I GIVE ADVICE to other consumers when making decisions on the purchase of TECHNICAL GOODS AND PRODUCTS THAT ARE COMPLEX FOR USE
Question 12 Most often I GIVE ADVICE to other consumers when making decisions on the purchase of PRODUCTS THAT REPRESENT STATUS SYMBOLS
Question 13 Most often I GIVE ADVICE to other consumers when making decisions on the purchase of PRODUCTS THAT I DO NOT BUY OFTEN
Question 14 Most often I GIVE ADVICE to other consumers when making decisions on the purchase of PRODUCT OF HIGH VALUE AND HIGH PRICE

Table 4 Structure of respondents' answer according to age

Question 11		(1) up to 30 years	%	(2) 31-45 years	%	(3) 46-65 years	%
Valid	fully disagree	45	10.7	8	11.4	2	17.3
	partially disagree	38	9.2	6	9.8	2	17.3
	neutral	108	26.1	6	9.8	1	9.6
	partially agree	147	35.6	28	44.6	5	46.2
	fully agree	73	17.7	15	24.5	1	9.6
	total	411	99.3	63	100.0	11	100.0
	blank	3	.7	/	/	/	/
Total		411	100.0	63	100.0	11	100.0

Question 12		(1) up to 30 years	%	(2) 31-45 years	%	(3) 46-65 years	%
Valid	fully disagree	55	13.1	16	25.6	1	9.1
	partially disagree	52	12.6	8	12.7	/	0.0
	neutral	167	40.3	8	12.7	7	63.6
	partially agree	108	26.2	31	49.0	1	9.1
	fully agree	30	7.3	/	0.0	2	18.2
	total	412	99.5	63	100.0	11	100.0
	blank	2	.5	/	/	/	/
Total		414	100.0	63	100.0	11	100.0

Question 13		(1) up to 30 years	%	(2) 31-45 years	%	(3) 46-65 years	%
Valid	fully disagree	150	36.2	83	45.1	3	27.2
	partially disagree	62	15.0	42	22.8	/	0.0
	neutral	95	22.9	25	13.6	3	27.2
	partially agree	76	18.4	20	10.9	4	36.3
	fully agree	29	7.0	14	7.6	1	9.3
	total	412	99.5	63	100.0	11	100.0
	blank	2	.5	/	/	/	/
Total		414	100.0	63	100.0	11	100.0

Question 14		(1) do 30.god	%	(2) 31-45.god	%	(3) 46-65.god	%
Valid	fully disagree	34	8.3	11	17.6	3	27.2
	partially disagree	52	12.6	14	22.2	/	0.0
	neutral	99	23.9	8	12.7	5	45.4
	partially agree	160	38.6	24	38.0	1	9.3
	fully agree	65	15.7	6	9.5	2	18.1
	total	410	99.1	63	100.0	11	100.0
	blank	4	.9	/	/	/	/
Total		414	100.0	63	100.0	11	100.0

As p-value is higher than 0.05, it is concluded with the probability of 95% that there are statistically significant differences between age groups as regards question 11.

If p-value is under 0.01, the differences are HIGHLY statistically significant. As the difference is statistically significant, a post-hoc test is conducted!

The application of post-hoc Tukey test enables noticing the existence of a statistically highly significant difference in answers, between the group up to 30 years (1) and group 31-45 years (2). It is noticed that the group up to 30 years (1) gives significantly higher grades in comparison with the other two age groups when they answer Question 11 about GIVING ADVICE to other consumers when buying TECHNICAL GOODS AND PRODUCTS THAT ARE COMPLEX FOR USE, which means that consumers of middle age, i.e. mature consumers, feel much more confident in their knowledge and judgement of technically complex products when buying, so that they act as opinion leaders to other age segments of consumers, to whom they offer advice when shopping. On the other hand, the oldest consumers significantly more often seek advice of other consumers when buying technical goods and products that are complex for use, which can be explained by the fact that these consumers cannot follow trends and technological innovations in products on the market, and that, in view of their age they seldom see themselves in a situation to give advice to others.

Table 5 ANOVA

Question 11		Sum of squares	df	Mean square	F	Sig.
	Between groups	10.996	2	5.498	3.755	.024
	Within groups	2197.903	1501	1.464		
	Total	2208.898	1503			

Table 6 Post-hoc Tukey test

Dependent variable	(I) Age2	(J) Age2	Mean difference (I-J)	Std. error	Sig.
Question 11.	1.00	2.00	-.202	.095	.087
		3.00	.272	.171	.250
	2.00	1.00	.202	.095	.087
		3.00	.474*	.190	.034
	3.00	1.00	-.272	.171	.250
		2.00	-.474*	.190	.034

Table 7 ANOVA

Question 12		Sum of squares	df	Mean square	F	Sig.
	Between groups	3.876	2	1.938	1.537	.215
	Within groups	1895.070	1503	1.261		
	Total	1898.946	1505			

The structure of respondents' answers to Question 12 regarding GIVING advice to other consumers when buying products representing STATUS symbols, p value is not lower than 0.05, so that it is concluded with the probability of 95% that there are no statistically significant differences in the behaviour and replies of respondents viewed by age, so that post hoc test is not performed.

Table 8 ANOVA

Question 13		Sum of squares	df	Mean square	F	Sig.
	Between groups	28.044	2	14.022	7.939	.000
	Within groups	2659.830	1506	1.766		
	Total	2687.874	1508			

Table 9 Post-hoc Tukey test

Dependent variable	(I) Age2	(J) Age2	Mean difference (I-J)	Std. error	Sig.
Question 13	1.00	2.00	.324*	.105	.006
		3.00	-.430	.188	.058
	2.00	1.00	-.324*	.105	.006
		3.00	-.754*	.209	.001
	3.00	1.00	.430	.188	.058
		2.00	.754*	.209	.001

The application of the post-hoc Tukey test enables noticing the existence of two highly statistically significant differences in responses, between groups up to 30 years (1) and group

31-45 years (2) and between group 31-45 years (2) and group 46-65 years (3). It is noticed that the group up to 30 years (1) gives significantly higher grades in comparison with the age group 46-65 years (3) when giving answers to Question 13 on GIVING ADVICE to other consumers when buying PRODUCTS THAT ARE NOT BOUGHT OFTEN, that is of low purchase frequency, which means that younger consumers see themselves as opinion leaders and generate interpersonal communication with other consumers. On the other hand, what is interesting is that the oldest consumers also see themselves as opinion leaders and give high grades to the statements that they give advice to others when they buy products of low purchase frequency, which further implies that the most careful and most rational buyers of this category of products are middle-aged consumers.

Table 10 ANOVA

		Sum of squares	df	Mean square	F	Sig.
Question 14	Between groups	44.833	2	22.417	16.257	.000
	Within groups	2066.954	1499	1.379		
	Total	2111.788	1501			

Table 11 Post-hoc Tukey test

Dependent variable	(I) Age2	(J) Age2	Mean Difference (I-J)	Std. Error	Sig.
Question 14	1.00	2.00	.420*	.093	.000
		3.00	.626*	.166	.000
	2.00	1.00	-.420*	.093	.000
		3.00	.206	.184	.503
	3.00	1.00	-.626*	.166	.000
		2.00	-.206	.184	.503

The application of the post-hoc Tukey test enables noticing the existence of two highly statistically significant differences in responses, between groups up to 30 years (1) and group 31-45 years (2) and between group up to 30 years and group 46-65 years. It is noticed that the group up to 30 years gives much higher grades in comparison to both age groups 31-45 years (2) and 46-65 years (3) when answering question 14 on GIVING ADVICE to other consumers when buying products of HIGH VALUE AND HIGH PRICE, which means that the youngest consumers see themselves as the most knowledgeable, so that they feature as opinion leaders to other consumers and give advice even when buying products of high value and price. This can be partially explained by their youth and know-it-all feeling of these consumers.

The basic shortcomings of the research could be reduced to the fact that making general conclusions based on a single study is not fully reliable, regardless of the size of sample and structure of the instrument. The electronic questionnaire and its software solutions can cause confusion in respondents, especially mature respondents who are not versed in information technologies. Due to the width of the questionnaire of as many as thirty questions, there is a danger of respondent fatigue, where answers to certain questions are given by inertia or replies are of neutral character.

5. CONCLUSION

One of the dominant characteristics of the contemporary business setting is the dramatic decline of consumers' confidence in all forms of advertising and marketing communication in general, so that they increasingly turn to information sources that do not have this commercial dimension, above all, to friends and family. Interpersonal word of mouth communication has a greater impact on creating opinions of consumers to products and services in comparison with other forms of communication.

Individual consumers, possessed of higher level of knowledge about products and services, and their producers and suppliers, are referred to as opinion leaders. These individuals in most cases already have the experience of purchasing and using the observed products and services, and therefore their word and suggestion, due to their sincerity, have a much greater specific weight than any other commercial advertisement. They have no direct material interest in sales and success of the company's products and services on the market. The potential buyers see these specific individuals as the most reliable way of reducing the risk of wrong purchase decision.

Opinion leaders emerge in situations when other consumers seek products and services to buy, when possibly trying out and evaluating these products and services, before making a decision to buy them. Opinion leaders are very often consumers who help the introduction and acceptance of new trends and behaviours on the market, so that they are often regarded as trendsetter. It must also be emphasized that not all consumers are equally susceptible to the personal influence of opinion leaders. The most susceptible to this influence are the consumers who are otherwise oriented to others' opinion, because for certain reasons they do not make independent purchase decisions, and new consumers without experience in the use of products and services. Opinion leaders speak about what was bought, why, how, and how it is used. In this manner they direct the meaning, trust and attention of other consumers, i.e. followers. Characteristics that opinion leaders possess are different for different market and culturological setting, as well as for different product categories, and here are, above all, expertise, social networking, charisma, energy, etc.

It is important to note that consumers opinion leaders do not fit into stereotypes about material wealth, high education and hierarchical position and social status. Most of them are well off, but do not range among the better off strata of society; most of them are educated, but do not range among the most educated academic circles of society; most of them are at high hierarchical positions, but not the highest. Most opinion leaders do not essentially differ in comparison to other consumers that they influence. Businesses must be aware of the existence of these consumers and direct their marketing efforts to them aiming to achieve business success. The phenomenon of business leaders is not generally present on the market; its potential and real effects on the growth or fall in sales of a company are extremely large, but it is still an insufficiently researched phenomenon which is difficult to use and control within the company. All the current attempts at applying the strategy of use of opinion leaders did produce results, but these results in most cases did not match companies' expectations and forecasts.

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CORPORATE SOCIAL RESPONSIBILITY IN TOURISM AND HOSPITALITY: EMPIRICAL STUDY FROM SERBIA

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Abstract: *In this paper, we analyze the level of social responsibility, including its basic dimensions, in the tourism and hospitality enterprises in the Republic of Serbia. The main research goal is to stress the importance of the concept of corporate social responsibility (CSR) and to determine the level of development of specific dimensions and aspects of corporate social responsibility in the domestic travel agencies and hotels. Specific goal refers to identifying the differences between hotels and travel agencies in terms of CSR. Therefore, we provide an insight into the most developed aspects, such as responsibility to the community and customers, within the external dimensions, as well as those aspects where more attention should be paid, such as environmental protection and CSR disclosure. We did not find significant differences between hotels and travel agencies in terms of CSR. Consideration of the social responsibility in tourism and hospitality from this perspective represents an original approach to research and derived findings have multiple theoretical and practical importance.*

Keywords: *corporate social responsibility, tourism and hospitality, sustainable business, environment*

JEL Classification: *M14, M21, A13, Z32, I31*

1. INTRODUCTION

Academics and practitioners are devoting a lot of attention to defining the CSR, but there are still a lot of different perspectives and sufficient consensus has not yet been reached. Generally, CSR practices are considered those voluntary firm actions designed to improve social or environmental conditions (Mackey et al., 2007). It is important to understand that CSR refers not only to the respect of the law in the relevant fields (e.g. human rights, environmental protection), but also the activities that exceed that limit and have a voluntary character. Although this topic is very popular, when it comes to tourism and hospitality research, it is still relatively new and causes increasing interest. Enterprises in tourism and hospitality need to seek a balance in the satisfaction of the many different groups that affect and are affected by tourism initiatives.

In addition to the multiple benefits for the stakeholders, CSR is of immense importance for the companies themselves in tourism and hospitality due to extreme competition in this market, which is especially pronounced in the modern era, when the freedom of movement of people is at a high level. Application of the socially responsible activities is a prerequisite for sustainable operation of modern enterprises (Post et al. 2002, according to Nicolau, 2008, p. 990), but it is also an area in which there are a number of chances for differentiation, which contributes to creating more value for customers and winning their trust. CSR activities can create a positive reputation and enhance employees' commitment and morale (Brammer et al., 2007; Porter & Kramer, 2002, according to Kucukusta et al. 2013).

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In this paper, we analyze the level of social responsibility, including its basic dimensions, in the tourism and hospitality enterprises in Serbia. The main research goal is to stress the importance of the concept of corporate social responsibility (CSR) and to determine the level of development of specific dimensions and aspects of corporate social responsibility in the domestic travel agencies and hotels. The specific goal refers to identification of the differences between hotels and travel agencies in terms of CSR.

This paper, thus, contributes to the literature about CSR and tourism and hospitality by providing empirical evidence about the level of CSR, including its main dimensions, in domestic tourism and hospitality industry. Results and findings indicate strengths and weaknesses in this field and point out significant suggestions to owners and managers of hotels, travel agencies and other tourism organizations in Serbia in order to improve their corporate social responsibility, which is important not only because of contribution to society, but also because it affects their competitiveness in the market.

2. LITERATURE REVIEW

2.1. CSR dimensions

Corporate social responsibility is usually regarded as an organized set of activities that include adequate way of behaviour towards the external environment. However, it is important to take into account the responsibility of the company toward its employees. Namely, since there are internal and external stakeholders, we can identify two key dimensions of corporate social responsibility: internal and external corporate social responsibility, both encompassing different areas (Figure 1).



Figure 1 CSR dimensions

Source: Author's adjustment according to Commission of European Communities, 2001

Internal CSR actually represents the responsibility of the company to internal stakeholder, and is therefore the most important aspect. According to *Green Paper*, internal CSR includes four areas: human resources management, occupational health and safety, adapting to change and management of natural resources in production. A need to attract and retain skilled workers is a challenge for the modern enterprises. Relations between management and employees must be clear, precise and fairly determined, and all phases of human resource management must comply with the legislation (Commission Of the European Communities, 2001). However, responsibility to employees may not be limited to respect for the legislation, but can include ethical and philanthropic aspects. It is very important to create pleasant working environment and atmosphere, where employees are treated as human beings and not as manpower. In a

capitalist society, this is difficult to achieve, due to the high level of competition and the requirement that enterprises, i.e. their employees, must meet in order to gain and maintain the competitive position. However, employee satisfaction is a segment that cannot be ignored. The benefits that are realized as a result of employee satisfaction are numerous and are reflected in the increased commitment to the organization and productivity, better performance, reduction of employee turnover, increased work effort and orientation toward the goals. At the same time, research shows that the most relevant aspect of job satisfaction are social, which refers to interpersonal relationships with colleagues and managers, as well as the need to develop, which are associated with the promotion and recognition (Stojanović Aleksić, *et al*, 2013)

In the context of internet social responsibility, concept of *ethical leadership* is extremely important. Stojanović Aleksić (2008) points out that human behaviour, and thus the behaviour of a leader can be classified in three crucial domains. The first domain is codified by law, in which the standards and rules are laid down in legislative norms and grounded in the judicial system. Domain of free choice represents the other extreme in which behaviour is not regulated by any standards, and individuals enjoy complete freedom of choice. Between these two areas is a zone of ethics, which is a very sensitive area. The decisions about what is moral and what is not, in relation to employees, bringing the leader a selection of appropriate alternative depends on his conscience. In this situation, the leader is facing a great challenge, which includes harmonization of personal needs and the needs of the group or organization. Personal development of employees is an important issue in the context of internal CSR. Contemporary economic flows lead to the development of the knowledge economy in which intellectual capital plays a key role. Knowledge appears as a new factor of production, the basis of the development of service sphere, while human capital, ICT and innovation become the main sources of competitive advantage and economic growth (Drašković, 2010). Hence, the importance of knowledge management and continuous investment in the improvement of human resources is immeasurable. It is very important that companies invest in employee development, by regularly organizing trainings and taking care of their skills and abilities. Adequate training reduces the possibility of errors and unnecessary costs and makes employees more confident. In addition, management should ensure that all employees have equal opportunities for training and development.

External CSR is directed to a wide range of stakeholders and involves several areas of responsibility. The initial stage of external accountability is related to the *environmental protection*. Characteristics of the environment are changing and its pollution is inevitable in modern times. People's needs are constantly evolving, so their activities significantly disrupt the functioning of ecosystems. This problem is especially important for large companies and corporations, mainly within the energy and petroleum industries, which have a high potential for pollution of water, air and endangering human health. As for the tourist and hospitality organizations, it is important to take into account the protection of the environment, but their options are reduced mainly to participation in various activities for environmental protection through sponsorships, donations and other marketing activities. *Responsibility to customers* relates to adequate way of communication with clients, characterized with high transparency. Companies are expected to provide products and services, which consumers need and want in an efficient, ethical and environmentally aware manner (Commission Of the European Communities, 2001). This aspect also includes: building lasting relationships with clients, understanding their needs, providing superior quality and safety. *Responsibility to the community* directly relates to participation in the humanitarian activities, sponsorship of cultural and sporting events, funding educational projects, donations to health and social institutions, scholarships for young talents and other assistance to members of the community.

Also, as a part of external CSR, organizations need to be aware that their social performance affects all actors within the supply chain, such as *partners, suppliers, and competitors*.

2.2. CSR in tourism and hospitality

The importance of CSR in the field of tourism and hospitality is immense, and it largely stems from its impact on the clients' trust. Nicloau (2008) argues that trust is essential in tourism, since this market is very information-sensitive and the degree of tourist's uncertainty is notably high due to the inherent characteristics of its purchase and consumption. People cannot try services in advance, they have to move in person from their origin to the destination in order to consume the services and they do not know what they will eventually obtain when getting to the destination. In order for a tourism firm to make their clients aware that uncertainty does not exist in its service provision or at least it has been diminished at a minimum, it may seek for such CSR activities, as it makes them trust the firm in greater extent. People may rely on the existence of CSR actions as they might reasonably think that taking care of society implicitly means taking care of customers.

Adopting a *strategic approach to CSR* is of particular importance for the tourism and hospitality organizations, since the CSR can be used as a way of differentiation in the market. Calveras (2015) argues that strategic CSR is often related to the willingness of consumers to pay an extra price for a product with CSR attributes, analogously as it happens with the quality premium that many consumers are willing to pay. He provides empirical evidence that higher quality hotel establishments will tend to implement more CSR strategies.

For tourism, especially the hotels, because they consume significant amounts of natural resources, *Environmental Management System (EMS)* is an extremely important area of business. It represents management system that includes an organizational structure, planning activities, responsibilities, practices, procedures, processes, and resources for developing, implementing, achieving, reviewing, and maintaining an environmental policy according to ISO 14001 standards (Chan, 2011, pp.3-4.) The importance of investment in environmental protection is emphasized by the results of a survey, conducted in Hong Kong, which show that the environment, as a dimension of CSR, represents one of the factors which have the strongest predictive power in explaining visitors' preference to stay, willingness to pay, perception of service quality, and brand image (Kucukusta et al., 2013).

However, despite its multiple benefits, smaller hotels usually do not adopt EMS, probably because it requires a lot of effort and significant engagement of various resources. Chan (2008) identified several main barriers for EMS implementation in small and medium hotels, such as: lack of knowledge and skills, implementation and maintenance costs, lack of motivation and professional advice, and outcome uncertainty, but also suggested some ways of overcoming these barriers, including working with other SMHs or different "green" organizations. Also, research shows that hotels often implement environmental strategies under the influence of big tour operators, who even demand in some cases EMS monitoring through relevant performance indicators (Ayuso, 2006).

When it comes to the *basic motives* for the implementation of CSR in tourism, studies indicate the dominant role of altruistic motives, although competitiveness factor is also very important (Garay & Font, 2012). Despite the lack of evidence about the relationship between CSR and financial performance of companies in general, the results of studies conducted in the tourism industry suggest some positive correlation between investment in CSR and financial performance, particularly in the hotel enterprises (García Rodríguez & del Mar Armas Cruz, 2007; Kang et al., 2010). Therefore, it is possible that financial incentives play

an important role in encouraging socially responsible activities of hotels and other enterprises in tourism and hospitality.

3. DATA AND METHODOLOGY

The study was conducted in the territory of the Central Serbia in 2016. As an instrument for data collection, we used an adapted questionnaire that consists of 30 questions. The starting point for creating questionnaire are empirical studies conducted by the Turker (2009), Dam & Scholtens (2012), Oh et al (2011) and a questionnaire of Serbian Chamber of Commerce. Adapted structure of the questionnaire is the result of authors' original scientific approach, according to a defined subject and objectives of the research. *The first part* of the questionnaire includes questions on key dimensions of social responsibility that the respondents should answer, based on the assessment to what extent they agree with the statements, using a five-point Likert scale. General information about respondents were collected via five questions that make up *the second part* of the original questionnaire, and relate to gender, age, position in the organization, years of service and level of education.

Data analysis was performed using *Statistical Package for Social Sciences (SPSS) 20.0*. Reliability of a scale was assessed using *Cronbach's Alpha coefficient*, which amounts to 0,890, indicating a high degree of reliability, since the questionnaire consists of 30 items. In order to test the level of CSR in the sample, and to compare the level of the various areas of social responsibility, we calculated the measures of descriptive statistics, mean and standard deviation. We considered the internal and external CSR, whereby the external CSR was decomposed into several dimensions, namely: responsibility towards customers, environment and community. As a particularly relevant aspect, we analyzed the CSR disclosure.

The sample consisted of ten organizations (5 hotels and 5 tourist agencies), including 20 respondents, managers and employees, equally distributed by companies. Structure of the sample is presented in the Table 1.

Table 1 Structure of the sample by the characteristics of respondents

Type of company	Frequency	Percent
Hotel	10	50,0
Tourist agency	10	50,0
Gender		
Male	10	50,0
Female	10	50,0
Age		
18-25	1	5,0
26-35	8	40,0
36-45	4	20,0
46-55	4	20,0
56 and more	3	15,0
Years of service		
Up to 2 years	1	5,0
3-5	2	10,0
6-10	5	25,0
11-15	2	10,0
16-25	4	20,0
More than 25	6	30,0

Position in the company		
Top management/CEO	4	20,0
Middle management	5	25,0
Operational management	8	40,0
Employee	3	15,0
Education		
High school	4	20,0
College	6	30,0
University	10	50,0
Total	20	100,0

Source: Authors

4. RESULTS AND DISCUSSION

Results of empirical research point to the middle level of development of the internal CSR in tourism and hospitality sector in Serbia (Mean = 3,45), indicating there is a certain level of responsibility to employees, but also open opportunities for further improvement. It is significant to point out that the respondents largely agreed with the statement: “*Working conditions that do not harm the health of employees are guaranteed in our organization.*” Thus, we can conclude that health and safety policies are consistently applied. On the other hand, the flexibility regarding the balance between life and work is an area that should be improved (Mean = 1.53), since the overloaded employees may develop dissatisfaction which lead to performance degradation. Some of the possible ways to solve this problem are flexible working hours and introduction of systems that allow work from home.

Table 2 Internal CSR

	N	Min	Max	Mean	Std.Dev.
Working conditions that do not harm the health of employees are guaranteed in our organization.	20	3	5	4,50	,889
We regularly measure employee satisfaction through concrete methods and constantly take steps to improve their satisfaction.	20	1	5	3,30	1,418
In the past 3 years, we employed persons belonging to vulnerable groups (persons with disabilities, minorities, persons older than 50 years etc.)	20	1	5	2,35	1,755
We offer solutions to employees regarding the balance between life and work (for example, flexible working hours, the ability to perform certain tasks from home instead of the office, etc.).	20	1	5	2,50	1,573
We invest in human resource development by regularly organizing trainings for employees and we care about developing their skills, as well as their personal development.	20	2	5	4,00	,858
Employees are expected to achieve real and attainable goals, with adequate reward system.	20	1	5	4,05	1,146
Internal CSR - total	20	2	4	3,45	,686

Source: Authors

Responsibility to customers represents a very important aspect of the business, which has attracted the attention of many researchers in the field of tourism and hospitality. The results of the study show that respondents rated the liability to customers with the high grades (Mean

= 4,36), compared to other aspects, whereby the highest agreement is observed with statement: “*We provide clients with detailed information on the characteristics of the services as well as guidance and terms of use*” (Mean = 4,90), although other activities are not far behind. This result might indicate the market orientation of tourist organizations and a high level of awareness of the importance of customer satisfaction in the modern environment. However, future studies should measure the attitudes of customers regarding the same statements in order to derive more objective conclusion about this aspect of CSR.

Table 3 External CSR - Customers

	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Std. Dev.</i>
The quality and safety of the product / service is guaranteed by using any of the international quality standards (ISO, HACCP, etc.).	20	1	5	4,25	1,251
We provide clients with detailed information on the characteristics of the product / service as well as guidance and terms of use.	20	4	5	4,90	,308
We maintain a long-term relationship with each client and we regularly receive feedback.	20	1	5	4,00	1,124
Appeals and complaints made by clients are seriously considered and resolved in the short term.	20	3	5	4,70	,571
We regularly measure customer satisfaction through specific methods.	20	1	5	3,95	1,191
Customers - total	20	3	5	4,36	,530

Source: Authors

Environmental protection reached an average score of 2,95, indicating a medium to low level of this aspect of CSR in tourism and hospitality organizations. Although the companies tend to adopt international standards in the field of environmental protection (Mean=3,15) and to use the energy rationally (Mean=3,75), their effort in using recycled materials and investment in other environmental protection activities could be improved.

Table 4 External CSR - Environmental protection

	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Std. Dev.</i>
Our company has adopted at least one of the international standards in the field of environmental protection (ISO14001 EMS, ISO 14064 GHG, etc.).	20	1	5	3,15	1,755
We have taken measures to ensure the rational use of energy.	20	2	5	3,75	1,070
We have taken measures to reduce waste.	20	1	5	3,40	1,142
We use recycled materials.	20	1	5	2,20	1,361
In the past year we have participated in some of the actions aimed at protecting the environment.	20	1	5	2,25	1,517
Environmental protection - total	20	2	5	2,95	,933

Source: Authors

The average score for responsibility towards the community is 3,66. This result indicates the medium level of awareness about the importance of investment in various activities aimed at improvements in the local community. In addition, the obtained data show the highest level of investment in supporting sports (Mean = 4,50), immediately followed by humanitarian actions (Mean = 4,45), while there is the lowest score for actions aimed at the poverty reduction

(Mean = 2,65). As can be observed, there are chances for tourism and hospitality organizations to improve their responsibility to community.

Table 5 External CSR - Community

	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Std. Dev.</i>
In the past year our company has organized or participated in some of the humanitarian actions.	20	2	5	4,45	,826
In the past year our company has organized or participated in some of the actions with the aim of contributing to culture.	20	1	5	3,40	1,847
In the past year our company has organized or participated in some of the actions with the aim of contributing to education.	20	1	5	3,30	1,750
In the past year our company has organized or participated in some of the actions with the aim of contributing to sport.	20	1	5	4,50	1,277
In the past year our company has organized or participated in some of the actions with the aim of contributing to poverty reduction.	20	1	5	2,65	1,496
Community - total	20	1	5	3,66	1,010

Source: Authors

The degree of transparency or publication of information on CSR is low, with an average score of 1,53, which indicates the absence of effort in this field, but also significant opportunities for improvement. The application of international sustainability reporting framework, defined by the world's leading organizations in the field of sustainability, Global Reporting Initiative (Global Reporting Initiative - GRI) is estimated to 1,15, which is extremely low. The respondents are not even familiar enough with the reporting system *triple bottom line* (Mean=1,20), which contains guidelines or principles and standards for reporting on economic, environmental and social performance and effects, as well as the appropriate methods for their measurement. (Global Reporting Initiative, <https://www.globalreporting.org/Pages/default.aspx> , 04.02.2016.). Somewhat better result refers to the average mark 2,25 for the statement *Our company publishes a report on all aspect of CSR*, which is still low, but slightly higher comparing to other statements in this aspect of CSR.

Table 6 CSR disclosure

	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Std.Dev.</i>
Our company publishes a report on all aspects of CSR.	20	1	5	2,25	1,333
Our company publishes a special report on the environmental protection.	20	1	3	1,50	,688
We are familiar with the reporting system <i>triple bottom line</i> and we apply it.	20	1	3	1,20	,523
Our company applies GRI sustainability reporting framework.	20	1	3	1,15	,489
CSR disclosure - total	20	1	3	1,53	,561

Source: Authors

This aspect is important because previous research has shown that reporting on social responsibility leads to multiple benefits for the company, such as the impact on the value and financial performance (Carnevale et al. 2012).

In order to explore whether there are statistically significant differences in CSR aspects between hotels and travel agencies, *Mann Whitney U* test for measuring the differences in arithmetic means of two independent sub-samples is applied. This non-parametric test is

chosen because the analysis showed that the variables do not follow a normal distribution, and a sample is relatively small. The results showed no statistically significant difference ($p > 0.05$) with regard to CSR between the hotel and tourist agencies (Table 7).

Table 7 Mann Whitney U Test - Differences between hotels and tourist agencies

	Internal CSR	Customers	Environment	Community	CSR disclosure
Mann-Whitney U	42,500	49,000	35,000	29,500	47,500
Wilcoxon W	97,500	104,000	90,000	84,500	102,500
Z	-,571	-,077	-1,141	-1,560	-,196
p	,568	,939	,254	,119	,844

Source: Authors

5. SCIENTIFIC AND PRACTICAL IMPLICATIONS

The scientific contribution and originality of the work lies in highlighting the significance of corporate social responsibility in the tourism and hospitality management, observing the problem from a different perspective compared to the previous research. This way, the existing theoretical knowledge in the field of tourism and hospitality, especially in terms of social responsibility, is supplemented and substantiated with the relevant empirical evidence. Also, the insights into most developed and underdeveloped CSR dimensions can serve managers for directing their future activities, in order to further develop and promote CSR practise, as a way to differentiate in the market and achieve better business results, but also as a way of giving back to society.

6. LIMITATIONS AND FUTURE RESEARCH

The inevitable limitations of the study can be identified. First of all, the use of descriptive indicators has its drawbacks, so obtained knowledge should be strengthened in future research by using the more reliable statistical indicators. Another disadvantage stems from the limitations of the survey, as a technique for data collection, primarily from the subjectivity of respondents. As new knowledge always lead to new relevant questions, the results of this study also encourage new ideas. In future research it would be interesting to analyze the specific reasons why managers engage in some fields of social responsibilities and neglect others and to investigate the influence of CSR activities in tourism and hospitality on various organizational and financial performances. Since the sample was drawn from limited region, the research could be extended in order to derive more general conclusions.

7. CONCLUSION

The theoretical part of the paper answered the basic aim of research, which refers to emphasizing the importance of CSR in the tourism and hotel industry, while empirical study contributed to reviewing the level of development of certain areas in the context of internal and external CSR in hotels and travel agencies in Serbia.

The study showed that there are no significant differences in terms of engagement in the field of CSR between hotels and travel agencies. The most developed aspects of CSR in domestic tourism and hospitality industry refer to Customers and Community. It can be assumed that investments in this areas are most profitable and lead to the most noticeable benefits for both

hotels and the travel agencies. These findings are consistent with the results of some previous studies (e.g. Inoue & Lee, 2011).

The results show a low level of investment in environmental protection, which is characteristic of organizations in this sector due to various reasons that have also been discussed in previous research (Chan, 2008). CSR disclosure is extremely low and requires more education and motivation of owners, managers and employees in tourism and hospitality.

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ENTREPRENEURIAL ORIENTATION AND STRATEGIC MANAGEMENT

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Abstract: *Entrepreneurial orientation has been built on the assumption that it is possible to identify a set of strategic processes representing foundation for all entrepreneurial initiatives in the organization, including innovation, risk propensity, autonomy and proactive behavior. In this paper we argue that entrepreneurial orientation will result in enhanced competitiveness only if accompanied with adequate support from strategic management. The main idea of linking the strategic management and entrepreneurship is an attempt to get more thorough insight about value creation process and attaining competitive advantage, when new business venture inside of organization is established. Hence, we elaborate on nature of entrepreneurial orientation concept and relation to strategic management, provide critical discussion, highlighting the constraints and reflecting about possible avenues for future research.*

Keywords: *Entrepreneurship, Corporate Entrepreneurship, Strategic management, Entrepreneurial orientation*

JEL Classification: *D21, M10, M13, L26*

1. INTRODUCTION

The research of entrepreneurial activities in the organization has significantly evolved in recent decades. During eighties, according to dominant narrative, it was impossible to act entrepreneurially inside bureaucratic organizational structures. In the nineties, due to information technology revolution, numerous companies have redefined business philosophy and recognized the human resource management as one of the key determinants of sustainable competitive advantage. Subsequent years of downsizing and restructuring have forced companies to adjust organizational culture and embrace entrepreneurship and innovation as key values. Beginning of twenty-first century is a period of reassertion and definite confirmation of the importance of entrepreneurial initiatives for achieving competitive advantage. Even though there is certain level of uncertainty and risk about the potential influence entrepreneurial activities might have on organizational development, their absence in a long run will most likely lead to deterioration of competitive position. Organizations embracing and encouraging entrepreneurial activities in a systematic manner gradually attain substantial improvements. Internal, i.e. corporate entrepreneurship is regarded as a framework for constant change and innovation in organizations, creating an effective response to competitive challenges. Guth and Ginsberg (1990) pointed out that "corporate entrepreneurship involves two types of phenomena, corporate venturing, defined as the birth of new business within existing organization, and strategic renewal, referring to transformation (or revitalization) of organizations through renewal of the key ideas on which they were built."

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Entrepreneurial orientation has been built on the assumption that it is possible to identify a set of strategic processes representing foundation for all entrepreneurial initiatives in the organization, including innovation, risk propensity, autonomy and proactive behavior. Proactive behavior and risk propensity directly influence the nature of innovation, either through adaptation or generation (Perez-Luno, Wikilund, & Valle Cabrera, 2011). This is highly relevant concept within the entrepreneurship and strategic management, and very popular, too, with more than a one hundred research studies conducted in last decade.

Topics such as innovation, growth, strategies, business ventures management, organizational transformation, are in the field of entrepreneurship, but strategic management as well; therefore these two disciplines are in close interaction. Strategic management is focused on attaining and maintaining competitive advantage, while entrepreneurship is promoting search for sources of competitive advantages through products, processes and market innovations (Kuratko & Audretsch, 2009). Both strategic management and entrepreneurship are devoted to new ways of value creation that will shake competitive arena.

Considerable research efforts have been made in the field of entrepreneurship, indicating statistically relevant interdependence of entrepreneurial orientation and organizational performances (Ireland & Webb, 2007; Barringer & Bluedorn, 1999; Covin & Slevin, 1986, 1989; Hult, Snow, & Kandemir, 2003; Wikilund, 1999; Wikilund & Shepherd, 2003, 2005). Significant research direction investigates the impact of entrepreneurial orientation on organizational performances depending on type of strategies, environmental turbulence, and other moderators (Dess, Lumpkin & Covin, 1997; Barringer & Bluedorn, 1999; Covin, Green & Slevin, 2006). Although most researchers claim that companies with entrepreneurial orientation have enhanced performances, some authors believe that this interdependence is moderate (Lumpkin & Dess, 1996; Zahra, 1991), while few of them found no connection whatsoever (George, Wood, & Khan, 2001). However, substantial research gap is still present, previous studies do not have sufficient conceptual foundation, lacking adequate empirical evidence and verification, therefore further research efforts are necessary (Pfeffer & Sutton, 2006).

Therefore, we hypothesize that entrepreneurial orientation will result in enhanced competitiveness only if accompanied with adequate support from strategic management. In other words, if top managers provide systematic encouragement for innovative and proactive employees, in a long run this approach will strengthen market position and organizational performance. This assumption has not been fully empirically corroborated, but it is intriguing enough to be a starting point for our research.

This paper aims to contribute to entrepreneurship literature in several ways. First, it aims to shed new light on entrepreneurial orientation concept and its' main aspects. Second, deeper insight in theoretical considerations based on a literature review in the field is provided, regarding the influence entrepreneurial corporate initiative might have on strategic process. Paper contributes by revealing new standpoints, expanding knowledge base and filling the research gaps. Practical implications might be used as guideline for managers and practitioners aiming to take advantage of employees' entrepreneurial potentials, providing better understanding of this complex phenomenon.

The paper is structured as follows. Initially, we provide theoretical explanation of mutual interaction between entrepreneurship and strategic management. Afterwards, we elaborate on nature of entrepreneurial orientation concept and causal influence entrepreneurial orientation is having on strategic management. We provide critical evaluation and discussion, highlighting the constraints and reflecting about possible avenues for future investigation.

2. ENTREPRENEURSHIP AND STRATEGIC MANAGEMENT - COMPLEMENTARITY AND DISTINCTIONS

The main focus of strategic management is to help organization attain competitive advantage. The favorable market position (Porter, 1985) as well as valuable resources, rare, difficult to imitate or substitute (Barney, 1991) are the most frequently mentioned sources of sustainable competitive advantage. Entrepreneurship, on the other hand, is more closely focused on the innovation of products, processes and markets (Daily, McDougall, Covina, & Dalton, 2002; Lumpkin & Dess, 1996; Sharma & Chrisman, 1999), or the identification and exploitation of opportunities as the foundation for new value creation (Shane & Venkataraman, 2000).

Independent small entrepreneurs are effective in identifying opportunities, but far less successful in building a sustainable competitive position. Large companies, conversely, have a better chance in achieving competitive advantage, but they are less capable to identify new trends and developments. Different companies have different starting positions, but some of the challenges they are facing on daily basis are common. We can notice at least three points of interaction between strategic management and entrepreneurship. The first one refers to *organizational performances*, as the crucial dependent variable and the central topic of research in both disciplines. *Creating value and growth* is second factor, fully compatible with achieved performances, reflecting the impact of entrepreneurial ventures on economy. The last one is turbulent environment. Deregulation, globalization, technological discontinuities and changing preferences impose new requirements in terms of management strategy and market re-positioning. Entrepreneurial activities inside the organization setting should be addressed in a strategic manner. New conceptual framework, *strategic entrepreneurship*, has been built through combination of different aspects of entrepreneurship and strategic management. Strategic entrepreneurship is encompassing in the same time seeking for new concepts, ideas and opportunities through entrepreneurial activities, but also exploring potential sources of competitive advantage through a strategic management process. It is important to point out that both of those processes are necessary for value creation, neither one of them is *per se* enough. Entrepreneurship and strategic management are complementary disciplines, but their domain is different (Ireland, Hitt, & Chirmont, 2003). Each one of them has its own intellectual platform and scope, these are two independent directions that interact and communicate. Figure 1 shows the interface between strategic management and entrepreneurship. Large companies benefit from entrepreneurship (A) (e.g. through corporate entrepreneurship), but also from strategic management (C) (through improved business performances and enhanced value for shareholders). Small and medium companies as the result of entrepreneurial activities (B) have significant benefits from strategic management (D), too, through the growth and improved performances. Therefore, entrepreneurs should be supported and encouraged in all organizations, regardless of their size.

The basic purpose of linking the strategic management and entrepreneurship is an attempt to get more thorough insight how new value creation process is going on, when new business venture inside of organization is set. Strategic entrepreneurship involves taking entrepreneurial activities with a strategic perspective. Companies capable of identifying opportunities, but unable to take advantage of them or understand their potential for creating value, are jeopardizing their own future prospects. Similarly, companies with currently favorable competitive position, but without new ideas are exposed to increased risk, possibly leading to deterioration of previously created value (Ireland et al., 2003). Research studies within small (Figure 1, D) or large business (C) performances resulting from strategic entrepreneurship are insufficient, representing therefore propensive area for further research.

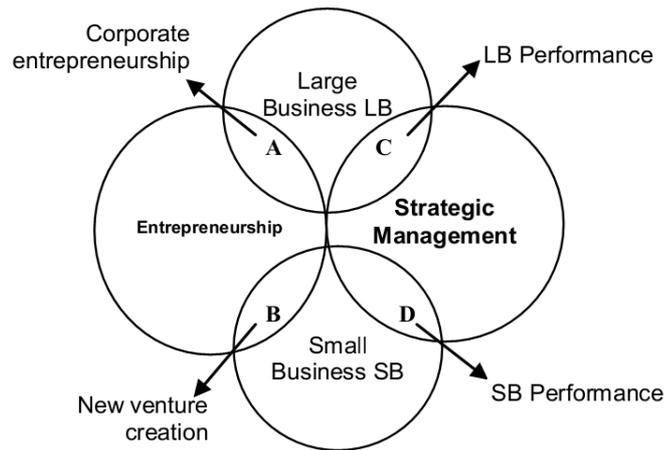


Figure 1 The entrepreneurship-strategic management interface

Source: Meyer, Neck, & Meeks, 2002, p. 34.

3. ENTREPRENEURIAL ORIENTATION

Entrepreneurial orientation refers to the organizational processes, activities and decisions leading to new venture creation (Lumpkin & Dess, 1996). While new venture reflects the *content* of entrepreneurship, entrepreneurial orientation describes the *process* of business creation. It refers to strategy formulation approach applied by key decision-makers (Rauch, Wikilund, Lumpkin, & Frese, 2009), based on the entrepreneurial potential within the organization. The entrepreneurial orientation concept enables organizations to be alert, promptly reacting to change in demand/technology, scanning the market trends, identifying opportunities and launching new ventures (Lumpkin, Coglisier, & Schneider, 2009).

Entrepreneurship is traditionally perceived as an individual initiative leading to development of new business, positively affecting economic growth and new jobs creation. Relatively recently the focus shifted toward corporate entrepreneurship as a mean of growth and strategic renewal, initiated by employees or business units within established companies (Guth & Ginsberg, 1990). Even though entrepreneurial orientation partially corresponded to the traditional perception of entrepreneurs as *alter ego* of the company, but it is at a same time more comprehensive because it describes the entrepreneurial processes on the level of entire organization. This is a strategic approach with conceptual domain covering not only activities, but also the behavior and attitudes of top management.

Numerous researchers have embraced an approach originally defined by Miller (1983), analyzing entrepreneurial organizations performances in friendly and hostile environment. "Entrepreneurial strategic attitude" was measured on a scale ranking the companies as a more or less entrepreneurial, depending on *innovation*, *risk propensity* and *proactive behavior* (Miller, 1983; Covin & Slevin, 1989). Over the years, considerable knowledge regarding the entrepreneurial orientation has been accumulated, based on measuring instrument also known as "Miler/Covin and Slevin scale". Aside from existing three, the scale has been extended with two more dimensions, autonomy and competitive aggressiveness (Lumpkin & Dess, 1996). However, the research studies have been focused on initial three dimensions.

Schumpeter was the first one emphasizing the importance of *innovativeness* for entrepreneurship, describing economic process of creative destruction, based on new combinations of resources accelerating the evolution of economy (Schumpeter, 1934).

Innovativeness reflects the willingness of the organization to make a detour from existing practices and support the development of new ideas, experimentation and creative processes that might lead to new products, services or technology improvements. Until recently, the focus was mainly on technology innovation and advanced production processes, while more recently increased attention is paid to social innovation.

The main factor distinguishing entrepreneurs from employees willingness to risk their job, in other words *risk propensity* (Cantillon, 1734). Business activities are closely related to risk, regardless if it is a relatively safe investment in government bonds or bank deposits, up to highly risky investments in new ventures. Risk propensity is traditionally attributed to individuals, not to organizations. The result was the discrepancy between individual employees willing to and resistant organization, and vice versa, risk-taking organizations with individuals unwilling to initiate or implement innovative ideas (Lumpkin & Dess, 1996).

Autonomy provides the freedom, flexibility and opportunity to initiate entrepreneurial activities (Lumpkin et al., 2009). It is the paramount for taking advantage of unutilized potentials of organization, identifying opportunities outside the core competence and new venture development. Entrepreneurial initiatives are frequently driven by employees acting autonomously in relation to the formal subordination system, often positioned on lower levels of hierarchy. They represent new energy and provide fresh impetus by problem solving beyond the cognitive and organizational patterns. Organizations must engage more to encourage these efforts, providing more space and allowing potential entrepreneurs to step outside of the given organizational framework and the established norms. Independent thinking and free action are *spiritus movens* of new value creation (Burgelman, 2001). If corporate entrepreneurship is integral part of the main strategy, entrepreneurial behavior and autonomous actions are encouraged by the highest managerial levels. This means that the essential determinant of entrepreneurial orientation of the organization is not only a number of new products/markets, but the adoption of entrepreneurship as style of doing business internally.

Autonomous strategic behavior is equivalent to entrepreneurship in organization, as it refers to new combinations of available resources. It arises from the current structural context and at the operational level represents the base for radical innovation (Burgelman, 1983a, 1983b). Autonomy is often viewed as a hierarchical-type construction, that is, different levels or degrees of autonomy depending on the types of actions or decisions. It is possible to identify so-called. *structural* autonomy ("autonomy of means") (Bouchard, 2002), enabling problem solving with self-determined means (within given resource constraints). By contrast, *strategic* autonomy ("autonomy of goals") (Bouchard, 2002) refers to the extent to which a group has control over ends, i.e., its goals. It enables operations outside normal organizational constraints in addressing what it will accomplish and how it will achieve its objectives. Viewing autonomy on a hierarchical scale, strategic autonomy would possess a superior (or higher) position relative to structural autonomy. Autonomy from the entrepreneurial orientation perspective refers primarily to strategic autonomy. The autonomy degree is positively correlated with knowledge creation, transfer and application. As autonomy becomes more strategic, ways of sharing and exchange of knowledge multiply, fostering entrepreneurial behavior and orientation. Insufficient research attention has been payed so far to autonomy, perceived as a prerequisite, but not an essential ingredient of entrepreneurial behavior.

Proactive behavior refers to action in line with the perceived needs or market changes. Being proactive means searching for new opportunities more or less distant from the core competence, pioneering in the new products launching, as well as a strategic withdrawing from declining markets. Entrepreneurial organization strives to be a leader, not a follower of

the market (Lumpkin & Dess, 1996). Lieberman and Montgomery (1988) have pointed out the advantage gained by the pioneers, by taking advantage of the information asymmetry in the market, to make valuable contributions and establish customer loyalty. Proactive behavior is closely (co)related with innovation, especially when it comes to new product launching.

4. INTERDEPENDENCE OF ENTREPRENEURIAL ORIENTATION AND STRATEGIC PROCESS

Entrepreneurial orientation is reversibly and inseparably interdependent with the strategic process, representing its complementary part, not the result. The strategic orientation is dependent on innovation and organizational learning, as the common points of both strategic management and entrepreneurship. *Innovating* should become a basis for a systematic strategy renewal, and innovation should rely on the core competence, directly affecting the competitive advantage (Ireland, Hitt, Camp, & Sexton, 2001). Entrepreneurial activities are necessary to promote creativity and spontaneous behavior, and strategic to provide a framework for these activities (Ireland et al., 2001). Entrepreneurially oriented companies act proactively, intensively scanning environment and constantly processing a large amount of information. Thus, entrepreneurial orientation extends knowledge acquisition domains through exploitation and experimentation, and becomes the starting point for *organizational learning*. The more company gets entrepreneurial, the more inclines to promotion of learning and sharing a common vision (Wang, 2008). Entrepreneurial organizations learn much faster and better than others, partly because their decision-making process is founded on extensive knowledge base (Covin et al., 2006). Recent research shows that entrepreneurial orientation is positively correlated with experimental learning, but an inverse U-shaped relationship with acquisitive learning has been identified (Zhao, Li, Hoon Lee, Bo & Chen, 2011).

The type of organizational structure is matched to the main strategy. If entrepreneurship and innovations are embraced as strategic directions in organization than structure should be appropriate. Open communication channels and ability to process information specific to organic organizational structure, contribute to expanding the knowledge base as the foundation for decision making process. Relying on intuition and *soft* information enables management to act spontaneously, demonstrate tendency to entrepreneurial initiatives and improve capability of strategy adaptation. In contrast, autocratic management style is characteristic for mechanistic structure, embodied in strict adherence to procedures and control mechanisms. These companies exhibit a high strategic reactivity and entrepreneurial orientation only if management decides to promote innovation and the necessity of embracing the change (Green, Covin, & Slevin, 2008).

Covin and Miles (2007) argue that companies with entrepreneurship embedded in main strategy will most likely outperform other organizations, in the long run. Organizations strategically implementing corporate entrepreneurship tend to have clearly defined entrepreneurial goals. Higher importance is attached to strategic in regard to financial aspects of the new venture, since the financial projections, although significant, are highly uncertain, while the strategic aspects, e.g. capacity building, skills, technology are much easier to predict. Strategies that favor innovation and new product development are associated with entrepreneurial orientation, while strategies based on costs and incremental improvements are typical for established organizations striving to maintain a competitive advantage (Dess, Lumpkin, & McGee, 1999). Porter claims that entrepreneurial orientation is more closely related to differentiation, then costs leadership. Organic structure corresponds with innovative differentiation; marketing emphasis is on new product, high quality, very high R & D and production flexibility. Porter argues that differentiation requires creativity, engineering and

marketing skills, while organizations implementing a costs leadership, mostly machine bureaucracy type of structure, highlight control, process skills, efficient distribution and structured set of organizational skills.

Burgelman (1984) states that the theory of typologies of organizations and of strategic process can be applied to the combination of corporate entrepreneurship and strategic management. Entrepreneurship represents a key dimension for classifying ventures to *defenders*, *prospectors*, *analyzers* and *reactors* (Table 1, Miles i Snow, 1978).

Table 1 Types of organizations

Type of organization	Main Features
DEFENDERS	- Narrow product/market domain
	- Top managers are product experts
	- Focus on improving efficacy of existing operations
	- Do not search for the external opportunities
PROSPECTORS	- Continually search for the new opportunities
	- Creators of change for competitors
	- Innovations-oriented
	- Underestimate the efficiency of existing operations and resources
ANALYZERS	- Operate in both types of product/market domains: proactive and stable
	- Require top-managers' ability to perform in strategies in different models
REACTORS	- Lack of consistent strategy-structure relationship
	- Make adjustments only under environmental pressure
	- Unable to react effectively to the changes

Source: Miles, & Snow, 1978

Defenders seek to create a stable business domain by defending existing products/markets and making ongoing progress through reliability and efficacy of existing operations. *Prospectors* take an active approach scanning the environment and continually looking for new products/markets opportunities. *Analyzers* are systematically trying to be more innovative than defenders, but they are more cautious and selective. In reality, this is the most complicated strategy for implementation, as it involves a dual focus, increasing the production efficiency and simultaneous new products/markets development. It is believed that the prospectors and the defenders are two extremes, with analysts in between. *Reactors* have the lowest ranking in terms of entrepreneurial orientation, mainly because this is the last option when all three previously mentioned strategies fail. The main difference comparing to defenders and analyzers is the type of organizational learning they rely on. They heavily invest in new technologies, ideas, markets, so they are engaged in generative learning and act as industry pioneers. Defenders mostly rely on adaptive learning, focused on existing products/markets within current business domain. Analysts are in the middle, often described as imitators, but when the chance arises they might precede prospectors. Thus, the impact entrepreneurial orientation might have on organizational performance through organizational learning is significantly influenced by the strategic orientation, with strongest interdependence in the most proactive companies (Wang, 2008).

5. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

There is no sufficient conceptual nor theoretical foundation for studying entrepreneurship within the organizational setting. Both strategic management and entrepreneurship have a

unique evolution and represent dynamic fields susceptible to change and adaptation to a turbulent competitive environment. Research in the field of entrepreneurship have been traditionally identified with small and medium-sized, while strategic management was focused predominantly on large companies, leaving thousands of new ventures founded every year within organizational context academically neglected. The quest for new opportunities is raising a series of issues on the theoretical and practical level, but limited knowledge is making the creation of internal environment favorable for entrepreneurial initiative even more challenging.

Innovativeness, risk propensity and proactive behavior are significant dimensions of entrepreneurial orientation, but not the only one. Besides, this approach is not comprehensive enough to explain other types of entrepreneurial behavior. Entrepreneurs may be very cautious and risk-averse depending on circumstances. Researchers have not been able to propose so far effective methodology for managing risk of starting a new venture within organization, therefore it remains prospective area for future research. Another thing is, sometimes companies can achieve more by imitating rather than innovating. Entering new market may be the result of not so risky acquisition, in terms of innovation. Attempts to restrict entrepreneurial behavior to anecdotal examples when all three dimensions are high, leave out of the sight a number of other options. A total of five dimensions the entrepreneurial orientation is based on may have different combinations, depending on the opportunities organization is seeking (Lumpkin & Dess, 1996). In other words they can vary independently of each other, depending on the context.

Recent research studies (Wales, Monsen & McKelvie, 2011) explore whether or not an entrepreneurial orientation can be approached differently in organizations and how. Until now, researchers assumed that, as an organizational phenomenon, entrepreneurial orientation equally permeates all hierarchical levels and organizational units, without proper empirical verification corroborating this view. From vertical perspective, the researchers raise the issue of the employees' entrepreneurial contribution, but even though entrepreneurial orientation can not be used for individual level analysis. For this purpose parameters have been developed in cognitive psychology. Future studies of entrepreneurial orientation will focus not only vertically and horizontally, but also through different stages of organizational development.

6. CONCLUSION

Entrepreneurship is increasingly acknowledged as an effective way of exploitation of the internal organizational potentials and building a sustainable competitive position in the global market. Adoption of entrepreneurial orientation is ongoing process yielding results in the foreseeable future, overwhelmed by a number of uncertainties. Therefore, the entrepreneurial orientation should be reflected through the vision and strategic processes inside the organization.

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THE PRELIMINARY RESEARCH ON INTRINSIC MOTIVATION: COMPARISON BETWEEN PRIVATE AND PUBLIC SECTOR EMPLOYEES

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Abstract: *Improving productivity, while realizing cost efficiency reduces the use of motivational instruments that are based on financial incentives. In such circumstances, HR managers use instruments to encourage intrinsic motivation of employees. This is of particular importance for the public sector in the Republic of Serbia in which employees' wages are at the same level for several years. The aim of the paper is to identify differences in internal motivation among employees in the private sector and public sector employees. In relation to the testimony of the observed results of the research showed that there is a statistically significant difference in all items except the domain of influence success or failure at work to private life. The practical implications of this study suggest the need for adaptation of motivational instruments depending on whether they are employed in the private or public sector.*

Keywords: *Intrinsic Motivation, Public Sector, Serbia*

JEL Classification: *M52, J45*

1. INTRODUCTION

Foreign direct investment realized in Serbia in the past few years in the real sector is significantly associated with two important features: 1) investment in labor-intensive production, which mainly meant hiring employees with skills and competences appropriate to manual labor, and to a lesser extent engaging talents with specific knowledge; and 2) relatively low compensation for this kind of work, generally not higher than the official average at the republic level. Such a tendency has been largely followed by domestic companies that build their competitive advantage through price competitiveness, which creates increased pressure on the minimization of all costs, including costs relating to labor. Bearing in mind the dominance of companies on the domestic market and the impossibility of a rapid change of the business model in the short term in a given environment, the need to analyze the factors affecting motivation of employees arose.

Companies use variety of tangible and intangible factors to stimulate human behavior towards a certain goal, i.e. direct it towards achieving a satisfactory level of work performance. The existence of certain visible rewards, such as salary and numerous compensation schemes, certainly motivate people towards achieving certain objectives, but achieving long-term motivation in the case of limited financial resources, and, therefore, long-term viability and stability of the organization, requires the use of certain intangible incentives, in order to develop intrinsic motivation in employees.

It is believed that a person is motivated from the inside if there is a sense of personal satisfaction, resulting from the performance of an activity, not because of some tangible

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reward (Deci, 1971). Taking into account the above, the organization can use appropriate combination of intangible factors, such as the provision of additional training, giving recognition and feedback, employee involvement in decision-making, as well as appropriate design of tasks to make them more challenging, to create such a working environment that will positively affect psychological satisfaction and the level of intrinsic motivation of people. It is believed that employees in the public sector are characterized by a higher level of intrinsic motivation (Lewis and Frank, 2002) compared to employees in the private sector, who are primarily driven by some visible, primarily financial rewards. This level of motivation is important because the results of certain jobs in the public sector are difficult to measure and, therefore, reward, but also due to the fact that certain visible rewards are at a low level, insufficient for proper initiation of human behavior towards achievement of the desired level of performance.

The process of globalization involved the Republic of Serbia in the contemporary global economic activity, so that bad results, growing problems, and decline in performance in the private and public sectors are typical for Serbia as well. Given the importance of intrinsic motivation to achieve results, inadequate compensation, and lack of budget funds, employers and public administration must have adequate awards and mechanisms to raise the level of intrinsic motivation of their employees, to thereby achieve cost-efficiency and improve productivity. That type of motivation will produce positive effects on job satisfaction and, therefore, performance, at the same time reducing employees' need to leave the organization (Alonso and Lewis, 2001).

The main objective of this study is to determine the degree of intrinsic motivation of employees in public and private companies operating on the territory of the Republic of Serbia. The importance of the work is reflected in the fact that so far no study of this type has been conducted on the territory of Serbia, so that theoretical and practical results obtained can serve as a basis for further research, but also as practical ideas that companies can apply to improve motivation of employees, as well as business performance.

2. LITERATURE REVIEW

Public sector in most countries is a key economic actor, since it provides a wide range of products, services, regulates economic activity of companies and households, and distributes large amounts of revenue generated by national policies (Tonin and Vlassopoulos, 2015). Proceeding from the above, but also from the fact that human resources are a key source of competitive advantage of an organization, employees in the public sector can have a big impact on the daily lives of people, so it is, therefore, reasonable to expect that they will do their job well (Palma and Sepe, 2016).

Successful performance of activities of public interest implies adequate human resource management strategy, with particular emphasis on the motivation of employees. There is a large number of approaches to motivation, but the focus is mainly on intrinsic motivation, relating to the performance of those activities that are inherently interesting and create satisfaction, and extrinsic motivation, relating to the performance of certain tasks leading to a certain reward (Ryan and Deci, 2000). Intrinsic motivation is associated with psychological rewards that people get from the task at hand, but also with making better decisions in work and a number of factors, such as cooperation, job satisfaction, and good results (Tekin and Erturk, 2014).

Numerous studies have shown that employees in the public sector, compared with employees in the private sector, are characterized by higher level of intrinsic motivation in the workplace

(Cowley and Smith, 2014). Intrinsic motivation of employees in the public sector is often determined by altruism, i.e. people's needs to help others, prosocial motives (Bozeman and Su, 2014), content of work, responsibility, learning possibility, desire to participate in the decisions of public importance, need to realize power (Raudeliūniene and Meidute-Kavaliauskienė, 2014), need to serve people and country (Liu et al. 2012), or, simply, activities that provide people with a sense of inner satisfaction (Lindenberg, 2001). This level of motivation is particularly important for the provision of certain public services, such as health and education, where individual efforts of people are difficult to measure and reward (Francois and Vlassopoulos, 2008).

Working in the public sector is often seen as a calling, a sense of responsibility, and less as a job, since it is about providing services to the society, so that the importance of work and pleasure arising from proper performance of work makes employees in the public sector primarily motivated intrinsically (Houston, 2000). These employees are more prone to compassion, equality, justice, need to help others (Raudeliūniene and Meidute-Kavaliauskienė, 2014), civic duty, sacrifice, etc. Proceeding from the above, it can be said that the motivation of employees in the public sector is a multidimensional structure, associated with three motives: instrumental, value-oriented, and identification motives (Kim and Vandanebee, 2010). Instrumental motives refer to all the reasons why someone wants to work in the public sector, while identification motives apply to all entities that employees need to serve: an individual, organization, local government, and so on. Finally, value-oriented motives include everything that a person receives at work in the public sector, and this is, starting from the concept of intrinsic motivation, primarily the sense of fulfillment and personal satisfaction resulting from job performance.

Unlike employees in the public sector, characterized by a higher level of ethics and intrinsic motivation, employees in the private sector are in most cases triggered by some extrinsic, i.e. visible motivators. Employees in private organizations place greater emphasis on job security, work efficiency, and external rewards, such as higher salary, status, promotion, and numerous other benefits (Houston, 2000).

Although intrinsic motivation, as an endogenous part of human connection with the task, is an important form of human motivation, there are still tasks that do not provide motivation from the inside, such as some jobs in private and profit-oriented organizations. Certain extrinsic motivators, such as, for example, salary and promotion, are deliberately based on the achieved performance, in order to know whether employee deserves them (Pate, 1978) and to make them invest higher level of effort. It is clear, of course, that, in the private sphere, there are jobs that motivate from the inside. Such jobs are characterized by challenge, responsibility, decision-making ability, getting feedback, learning possibility, as well as adequate salary and adequate visible rewards. In other words, it is likely that a combination of intrinsic and extrinsic motivation is most common in practice (Amabile, 1993). Cowley and Smith (2014) find that employees in the public and private sectors share interest in salary, as an extrinsic motivator.

Studies have shown that intrinsic motivation produces a large number of positive effects, both for the individual and for the organization. As a product of intrinsic motivation, employees are loyal to the company and achieve higher levels of productivity (Bhuvanaiah and Ray, 2015), have greater job satisfaction (Raza et al., 2015), better communication with colleagues (Quigley and Timon, 2006), which ultimately leads to better results throughout the organization. Bearing in mind the importance of public services to society in a country, as well as the noticeable trend of decreasing efficiency in the public sector over the past few

years (Raudeli niene and Meidute-Kavaliauskienė, 2014), jobs in the public sector should be designed to encourage intrinsic motivation of employees and, thus, achieve multiple benefits.

3. RESEARCH METHODOLOGY

The given theoretical framework provides a starting point to explore the degree of motivation of employees in the public and private sectors. The study involved employees in private and public companies in the Republic of Serbia, with the full sample consisting of 59 respondents. Respondents were randomly selected, regardless of the characteristics of the position they occupy in a given organization. The selected organizations, according to owners, i.e. founders, achieved satisfactory business performance.

Data collection among employees was conducted using “face-to-face” interviews, of an average duration of 15 minutes. Of the total number of employees who participated in the study, there were no invalid questionnaires, so the statistical data processing and analysis included 59 questionnaires, i.e. employees. The sample included 30 respondents employed in the public sector, while the remaining respondents, or, more precisely, 29 of them, were employed in the private sector. Approximately the same ratio of respondents in the public and private sectors allowed for mutual comparability of results obtained.

By analyzing the structure of the sample, it was found that there were: 1) 53% of men, 2) 47% of women. In terms of age, the total sample consisted of: 1) 15% of employees aged 20 to 30 years, 2) 32% of employees aged 31 to 40 years, 3) 27% of employees aged 41 to 50 years, 4) 25% employees over 51 years. In addition, the data obtained on years of service in the current organization pointed to: 1) 19% with up to 2 years of service, 2) 14% of those with work experience of 2 to 5 years, 3) 39% with 5 to 15 years of service, 4) 29% of those with work experience over 15 years. Bearing in mind the level of education of employees, it is possible to structure the sample as follows: 1) 32% of those with primary or secondary education, 2) 14% of respondents had college education or some form of specialization, 3) 54% of respondents completed university education. Based on employment contract of respondents in the analyzed organizations, the sample consists of: 1) 83% of those employed on a permanent basis, 2) 15% of those employed on a fixed-term basis, 3) 2% of temporary employees. The study included executive managers, sales staff, professional staff, external associates, and managers or heads of organizational units that are well acquainted with the subject of research.

The questionnaire, which was specifically designed for this research, included questions in the form of statements with a five-point Likert scale of (dis)agreement. The aim of questions thus posed was to determine the attitudes of employees and their motivation with the help of statements constructed to adequately cover different types of factors relevant to the motivation of employees.

Statistical analysis used SPSS 13 software package.

4. FINDINGS

In order to determine whether there is a difference in intrinsic motivation of employees in the private and public sector, statements relating to intrinsic motivation were used, which are presented in the following text:

IMO: Intrinsic motivation	
IMO 1	If you achieve above-average work performance, you have the possibility to improve and make progress.
IMO 2	Organization sufficiently invests in education and training of employees.
IMO 3	Organization in which you work gives you a sense of security.
IMO 4	There is room for the expression of creativity and innovation.
IMO 5	You are familiar with the values, goals, mission, and vision of the organization.
IMO 6	At your disposal is enough time to perform the tasks.
IMO 7	Work tasks and responsibilities are precisely and clearly defined.
IMO 8	Line manager takes care of your needs and helps you solve problems.
IMO 9	Success/failure at work affects your private life.
IMO 10	You regularly receive accolades from your superior for the results achieved.

In order to check the reliability of the above statements, Cronbach's alpha coefficient was calculated. The obtained value of 0.907 indicates a high level of internal consistency of those statements.

Table 1 Cronbach's alpha coefficient

Items	Cronbach's alpha coefficient of 0.907	Mean	Stand. dev.
IMO 1	If you achieve above-average work performance, you have the possibility to improve and make progress.	3.10	1.637
IMO 2	Organization sufficiently invests in education and training of employees.	3.73	1.243
IMO 3	Organization in which you work gives you a sense of security.	3.71	1.218
IMO 4	There is room for the expression of creativity and innovation.	3.29	1.451
IMO 5	You are familiar with the values, goals, mission, and vision of the organization.	3.88	1.190
IMO 6	At your disposal is enough time to perform the tasks.	3.64	1.283
IMO 7	Work tasks and responsibilities are precisely and clearly defined.	3.58	1.192
IMO 8	Line manager takes care of your needs and helps you solve problems.	4.00	1.174
IMO 9	Success/failure at work affects your private life.	3.49	1.369
IMO10	You regularly receive accolades from your superior for the results achieved.	2.78	1.415

Source: Authors' research

In order to test the existence of differences in the level of intrinsic motivation among employees in the public and private sectors, t test statistics was calculated.

The test results show that there is a statistically significant difference in the degree of intrinsic motivation among employees in public and private companies in almost all observed statements. A statistically significant difference in the degree of intrinsic motivation is not there only for elements that relate to the impact of success or failure at work on the private life of the employee.

Table 2 Results of t test of degree of intrinsic motivation of employees in public and private companies

Items	Mean difference	P value
IMO 1	1.970	0.000***
IMO 2	1.076	0.001***
IMO 3	1.177	0.000***
IMO 4	1.739	0.000***
IMO 5	1.454	0.000***
IMO 6	1.039	0.001***
IMO 7	0.630	0.041**
IMO 8	0.610	0.045**
IMO 9	-0.085	0.814
IMO10	1.315	0.000***
Note: p<0,001***; p<0,05**; p<0,1*		

Source: Authors' research

5. CONCLUSION

In conditions of the dynamic environment, in which the influences of various interest groups and factors intersect, the concept of human resource management gets a completely different dimension, which is why employees are an essential resource that is the most difficult to manage. In the long term, employees with their knowledge and skills are a tool for achieving competitive advantage, so the need arises to invest efforts to adequately direct employees towards the fulfillment of their tasks.

For years it has been known that human activity does not manifest itself on its own, but as a result of intrinsic motives and external stimuli. The challenge facing modern organizations is to determine the optimal motivation strategy and dominant factors that stand for essential drivers of appropriate employee engagement at given positions. Starting from the underlying hypotheses and based on the research conducted, it is possible to draw conclusions about the motivation of employees in the public and private sectors in the Republic of Serbia.

Data obtained by interviewing 59 respondents showed that there is a statistically significant difference in the degree of intrinsic motivation of employees in the public and private sectors. The instruments used for the purpose of motivating employees clearly vary when analyzing current practice in these two sectors, which confirms the often opposing views of employees on motivation in a given workplace.

Justification for the absence of statistically significant differences when analyzing the problems of the impact of duties on the private lives of employees can be found in features of our national culture. Commonly recorded impact of business success or failure on the family atmosphere may be the reason for not accepting challenging and stressful work tasks, for whose inadequate performance rest of the family suffers. Such a mood of our citizens can be seen in both the private and the public sector.

In addition, the obtained results can be used as a guide in improving organizational performance of the public sector in the Republic of Serbia. Management is given the recommendation to make efforts to create a suitable environment for competence improvement and development of employees, as well as appropriate ground to encourage creativity and innovation in solving tasks. At the same time, one must not omit clear definition of tasks and the time span in which it is necessary to realize them. The results presented and suggestions given may serve to create a suitable atmosphere that will contribute

to raising customer satisfaction, and, therefore, the motivation of employees, which will inevitably have a positive impact on the business success of the organization.

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ENTEPRISE PROFITABILITY ASSESSMENT IN LOCAL ECONOMY

Violeta Domanović¹

Abstract: *In market economy, profit is the comprehensive and the most important indicator of company's efficiency. A successful performance system is a set of performance measures that provides a company with useful information in order to manage the activities undertaken in the company. The information retrieved from the performance measurement systems must in turn be accurate, relevant, timely accessible for the persons who need it. Furthermore, performance measures must also be designed to reflect the most important factors influencing the efficiency of the different processes that could be found in the company. Designing of such a performance measurement system is a difficult task and what can be considered as the optimal performance measurement system will also differ from case to case. The paper is focused on financial measures and especially profitability measures. The paper investigates whether the private enterprises in local economy, which are the most successful regarding the net income in previous period, have been also successful regarding the return on assets (ROA) and return on equity (ROE) in the last three-year period. The research results show that it is not a case.*

Keywords: *profitability, return on assets, return on equity, private enterprises, local economy.*

JEL Classification: *M10, M21*

1. INTRODUCTION

In today's business environment, which can be described as complex, heterogeneous, dynamic and uncertain and unpredictable, those companies that generate growth and development could survive. This means, that companies must simultaneously be both effective and efficient. The effectiveness and efficiency are inevitable assumptions of growth and development of the company. In contemporary literature in economics and management, it is becoming increasingly used the term performance of the company. The term performance is multidimensional and expanding the effectiveness and efficiency of the company. Verweire, K. and L. Van Den Berghe believe that organizational performance is defined as the value that an organization makes using the productive assets in comparison to the value that the owners expect to get (Verweire & Van Den Berghe, 2004).

Namely, it is possible to speak about the performance of effectiveness and efficiency, as well. Accrued costs (expenses), for example, are one feature of the process of resource use - the so-called the performance of investments. From the process of utilization of resources, as a result there are some use value - products and services. The volume of production, the volume of services provided, sales volume, revenue and profit, are natural and financial results (effects) resulting from the process of resource use. It is wrong to identify with the performance results of the company. Results (effects, impacts) in qualitative and quantitative terms use the performance of resource. In addition, the concept of performance of resource use is complex and involves a wide complex of other economic performances, between which are performance effectiveness and efficiency of resource use. Thus, a term performance is the broader concept than effectiveness and efficiency.

Namely, it is possible to define them in financial terms (e.g. the market value, profitability), operational (efficiency, effectiveness, the number of output, quality of products or services,

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etc.), marketing (e.g. customer satisfaction, the number of customers retained for a certain period) and other (Verweire & Van Den Berghe, 2004, 6).

The quality of the enterprise economy, though last, is not the least important component in the system of enterprise economy. On the contrary, all of the aforementioned components are studied and measured in the function of measuring the quality of enterprise economy. Enterprise economy quality is a control instrument of the degree of application of economic principles and indicates whether and to what extent the company is complied with economic principles in its transformation process. True, the concept of quality economy enterprises can be used for different purposes and with different meanings. This is due primarily to differences in the respective definitions of phenomena and processes whose quality is determined by differences in essence of the same concept (Domanović, 2009, 69-70).

Quantitative expression of the quality of the economy is business success (Grozdanović & Sekulić, 2006, 33). Business success is contained in the relationship between the results achieved and the investments made. However, as the results and investments are heterogeneous, hence the partial expressions were derived. These partial expressions compare homogenous terms of results with homogeneous terms of investment which provides a clearer insight into the quality of the enterprise economy. These partial expressions are: productivity, economy and profitability.

Profitability is the last, but the most important expression of the efficiency and it includes all components and factors influencing the productivity and economy, as well. Thus, the subject of the research is the profitability of the selected private enterprises in local economy. The basic research goal is to examine whether the most successful enterprises concerning one profitability measure, could be also the most successful enterprises concerning some other profitability measures. Hence, the starting hypothesis is the most successful enterprises concerning the net income would be the most successful enterprises concerning the return on assets (ROA) and return on equity (ROE).

The paper is structured in the following sections. In the first next section, there is a theoretical background on performance measurement, generally, and profitability measures, especially. Then, research materials and methods have been explained. In the next one, the results are presented and discussed. In the last section, the conclusions are finally derived, where is taken the validity of the starting hypothesis. Also, there are highlighted the research limitations and proposed the direction of future research.

2. THEORETICAL BACKGROUND

Performance measurement and performance management have been the actual and widespread research area in the field of business economics and management and management accounting for more than two decades. There have been numerous discussions among researchers and practitioners in domestic and foreign literature, as well. Generally, each business activity and business process has impact on some kind of company's profitability. In market economy, profit is the comprehensive and the most important indicator of company's efficiency.

Kennerly & Neely (2003) considered the strategic performance measurement, which could be defined as a system of measurement and reporting, which quantifies the degree at which managers achieve defined aims. Performance measurement implies the fortification of responsibilities, making of decision on improvement and alignment of operation activities and

resources with the strategic aims. The planned activities would be understood better and there would be a clear communication of the expectations at all organisational levels.

The very important issue is what kind of performance system might be considered as a successful one in a contemporary business environment (Paranjape, B., Rossiter, M., Pantano, V., 2006). Performance measures must be designed to reflect the most important factors influencing the productivity of the different processes that can be found in the company. Designing of such a performance measurement system is a difficult task and what can be considered as the optimal performance measurement system will also differ from case to case (Tangen, 2005).

Performance measurement systems would differ from one company to the other, depending on their specific and unique needs. Also, performance measurement has been evolving throughout its history respecting not just the needs of a specific company but also specific features of the business environment (Taticchi *et al*, 2010). Tangen (2005) classified performance measurement models into the following groups: traditional performance measures, such as ROI, ROE, cash flow and labour productivity; multidimensional performance measurement models that include financial and non-financial measures, as well, and the most advanced models, which consider the needs from all relevant stakeholders.

In the modern business environment, traditional measures of profitability are becoming inadequate for assessing corporate strategy. Despite numerous criticisms of traditional accounting criteria, it still has - and will have - a central role in the life of the company. Whatever their limitations, they are too associated with legal and regulatory side of the business to be completely replaced with new approaches. Depending on whether the profitability is measured at the company level, business activities, organizational units with the status of profit centres, individual products, groups of products, there are profitability measures of enterprises, business activities, division or factories, products or product lines, respectively (Pokrajčić 2002, 347).

The most commonly used indicators of the viability of this approach are (Drake & Fabozzi, 2012, 122-123):

- Operating return on assets as the ratio of operating income to assets and results from the enterprise's investment in total assets. This profitability measure is useful for comparing enterprises' profitability when they are in the same line of business.
- Return on assets (ROA) as the ration of net income and total assets.²
- Return on equity (ROE) as the ratio of net income to shareholders' equity.
- Return on common equity (ROCE) as the ratio of net income available to common shareholders to common shareholders' equity.
- Return on invested capital (ROI) as the ratio of income from operating activities, less related taxes to invested capital.

Domanović & Bogičević (2015, 271) points out that some authors consider ROI as a summary indicator, which includes return on assets (ROA) and return on equity (ROE). On the other side, there are authors, which point out that ROE is not a manifestation of ROI, but an independent parameter. Bogičević & Stojanović (2014, 460-461) discussed about financial measures in narrow and broader sense. The narrower meaning is that financial indicators

² In the paper, return on assets (ROA) is calculated as the ratio of operating income to assets. This is because of the fact that operating income is the broader concept and involve costs of borrowed capital. The argument is that the total assets is funded not by shareholders' equity, but by borrowed capital also.

should be based only on enterprises' results, i.e. only profitability measures. In the broader sense, financial measures should include profitability measures, liquidity, solvency and business activities.

What is characteristic for all profitability measures, both at the enterprise level and at the level of business activity, it is a fact that all those partial measures expressed the efficient use of capital and resources. In order to eliminate the disadvantages of these partial indicators, there was introduced a synthetic model, which integrated the profitability measures of enterprises and profitability measures of business activities, such as DuPont model. Thus, the rate of return on total assets might be obtained when the profit margin is multiplied with turnover coefficient of total assets.

However, the existence of accounting profit does not necessarily mean the existence of cash as inevitable presumption of liquidity of the company. For this reason, it is necessary to converse the income in receipts and expenditures in cash outflows. The amount of cash may be calculated as follows (Palepy *et al*, 2004, 5-23):

Working capital from business activities

- increase (or + decrease)
- increase (or + decrease)
- increase (or + decrease) in other current assets excluding cash and cash equivalents
- increase of + (or - decrease) in short-term liabilities
- increase of + (or - decrease) in other current liabilities, excluding debt capital.

Bearing this in mind, and the economic importance of holding cash at a certain point, it is possible to conclude that the cash yield is more realistic benchmark of the yield power. One of the most popular indicators based on cash flow is the rate of return on investments cash flow (CFROI - Cash Flow Return on Investment). Is obtained as the ratio of cash flow from business activities and invested capital. In theory, CFROI and economic value added, give the same answer for economic profit. However, these metrics in practice vary for several reasons. Economic Value Added expresses economic profit in monetary units, and CFROI is the metric, which measures the expected rate of return in the life of the existing assets of the company. In contrast to the economic value added, CFROI uses gross cash flow and gross capital investment and the resulting internal rate of return is measured in real terms rather than in nominal terms.

Unlike the internal rate of return, which measures the expected yield of cash flow based on prospective investments, CFROI is, on the other hand, a historical measure. There are several important steps in assessing the CFROI (Bartley & Madden, 1999; Grant, 2003, 189; Young & O'Byrne, 2000, 383-388):

- calculate the average life span of existing deductible assets,
- calculation of real gross cash flow (adjusted rate of inflation)
- calculation of gross cash investment,
- calculation of the amounts net book assets (land and inventories)
- calculate CFROI (or internal rate of return).

In order to assess the effectiveness of the company on the basis of this indicator, a comparison is made with the average cost of capital. This difference is called net yield and can be positive or negative. If it is positive, it means that the created value and, conversely, if the difference is negative.

3. METHODOLOGY

The research was conducted by collecting data on the most successful private enterprises in local enterprises and selecting a sample of 5 leading enterprises regarding net income. In the first step, there is presented the list of the most successful private enterprises in the local economy - Kragujevac. In the second step, there are presented the data on relevant indicators - operating revenue, sales, operating income, net income, total assets and capital value. All data were obtained from the available business reports published by Serbian Business Registers Agency. In the third step, the relevant indices of return on assets and return on capital are calculated in order to measure and evaluate the enterprises' profitability.

ROA was obtained as the ratio of operating income/operating loss (from Income statement) and total assets value (from Balance sheet). Because of the lack of the total assets value at the beginning and the end of the year in 2015, it was not possible to calculate an average sum of the total assets in 2015. Thus, in order to calculate *ROA*, it is used the total assets value at the end of the each year. *ROA* can have a positive or negative value in dependence on whether the company achieved operating income or operating loss and it shows return/operating loss on 100 dinars of assets. *ROE* was obtained as the ratio of net income/net loss (from Income statement) and total equity (from Balance sheet), which represents a balanced expression of shareholders' equity, retained profit, unrealized losses from securities and loss. The research follows the trend of *ROA* and *ROE* in the last three-year period 2013-2015. Dynamics of *ROA* and *ROE* will be observed via fixed base and chain indices which will be obtained as ratio of *ROA* and *ROE* in the current year and value of *ROA* and *ROE* in the previous year.

4. RESULTS AND DISCUSSION

Industry of City of Kragujevac in the second half of the twentieth century was largely related to the operation of large economic systems in the metal complex, such as Grupa Zastava and Filip Kljajić. Significant capacities were found in the food-processing industry (IM Crvena zvezda, Žitoprodukt, Mladost Dairy), textile industry (22 December, Diork). Key export programs were cars, weapon and galvanized chains. The largest decline in industrial production was in 1991-2000. years because of the dissolution of the former SFRY and international economic sanctions (*Strategy of the sustainable development of City of Kragujevac from 2013 to 2018*).

Thus, the industry of City of Kragujevac, which has been export-oriented, almost completely lost the market. The industry of transport equipment up to 1990 in total industrial production accounted for 65%, and in the metal with even more than 90%. In the coming years, the metal complex, with manufacturers of transport equipment, reduces production by more than 10 times, and the capacity utilization in the sector has fallen below 10%. A smaller decline in production was achieved in the production of clothing production (3.5 times), production of large upper skin (5.1 times), production of fresh meat and pasteurized milk, while the program of defence industry (Zastava Arms) reduced by 2/3 compared to the former volume (*Strategy of the sustainable development of City of Kragujevac from 2013 to 2018*).

In 2001, there was a restructuring of the Group Zastava, so that a whole series of independent companies appeared, such as Zastava Arms, Flag Tapacirnica, Flag Forge, Zastava Elektro (Rača), Flag Tools, 21 October, Zastava and other machines, while in the rest of the group Zastava vehicles Zastava cars, Zastava trucks and transport home. Table 1 provides an overview of the most successful local private enterprises according to the rate of net income

(excluding the PUC, banks and insurance companies) in 2012 (*Strategy of the sustainable development of City of Kragujevac from 2013 to 2018*).

Table 1 Survey of the most successful local private enterprises according to the net income (except public utilities, banks and insurance companies) in 2012

Firm	Business Activity	Number of employees	Net income in dinars
Agromarket	Wholesale	244	542.172,000
Nikom	Production of parts and accessories for vehicles	59	127.627,000
Prizma	Production of orthopedic appliances and other equipment	62	109.391,000
Senal	Wholesale auto parts	69	92.139,000
Forma ideale	Furniture production	1150	90.030,000
KG-Uzor	Plumbing, heat and air conditioning system	18	83.903,000
Šumadija sirovine, konsalting usluge i transport	Wholesale of waste and scrap	12	67.190,000
Vulović transport	Urban and suburban passenger land transport	91	64.218,000
Društvo rolling-CO	Specialized wholesale trade	12	49.954,000
Trgovina 22 AD	Retail sale of clothing in specialized stores	20	48.798,000
Nova Sicilijana	Hotels and similar accommodation	37	45.568,000
GSG Group	Plumbing, heat and air conditioning system	1	44.617,000
OBI DOO	Construction of residential and non-residential buildings	73	41.663,000
Izgradnja R DOO	Construction of residential and non-residential buildings	6	40.325,000
Braća Popović	Specialized wholesale trade	75	38.564,000
ST prevoz DOO	Freight transport	44	37.720,000

Source: Serbian Business Registers Agency. According to the Strategy of the sustainable development of City of Kragujevac from 2013 to 2018

There are shown the data on operating revenue, sales, operating income, net income, and total assets at the end of the year and capital value for the five most successful enterprises in Table 2, Table 4, Table 6, Table 8 and Table 10. There are calculated ROA and ROE values for the selected enterprises and their dynamics in the last three-year period as well. Dynamics of ROA and ROE values are calculated by fixed base indices and chain indices (see Table 3, Table 5, Table 7, Table 9 and Table 11). Finally, Table 12 shows dynamics of ROA and ROE values in the last three-year period for the whole observed enterprises sample. Dynamics of ROA and ROE values has been also shown graphically for the each enterprises, separately (Figure 1-Figure10), and then for all enterprises together (Figure 11 and Figure 12).

Table 2 Društvo za proizvodnju, promet i usluge Agromarket DOO KG
(Company for production, trade and services Agromarket)

In 000 din.

Year	Operating Revenue	Sales	Operating Income	Net Income	Total Assets	Capital
2013.	13 365.809	13 293.608	1 717.370	1 142.950	9 594.981	5 332.619
2014.	14 133.814	14 026.387	1 885.478	859.992	9 873.390	6 343.971
2015.	15 436.557	15 273.965	1 886.521	1 408.706	12 281.410	8 066.553

Source: Serbian Business Registers Agency. <http://pretraga2.apr.gov.rs/pretragaObveznikaFI/>

Table 3 ROA and ROE values for AGROMARKET

Year	ROA (Operating Income/Assets*100)	Fixed Base Index	Chain Index	ROE (Net Income/Capital*100)	Fixed Base Index	Chain Index
2013.	17,89	100	/	21,43	100	/
2014.	19,10	106,8	106,8	13,56	63,28	63,28
2015.	15,36	85,86	80,42	17,46	81,47	128,8

Source: Author's calculation

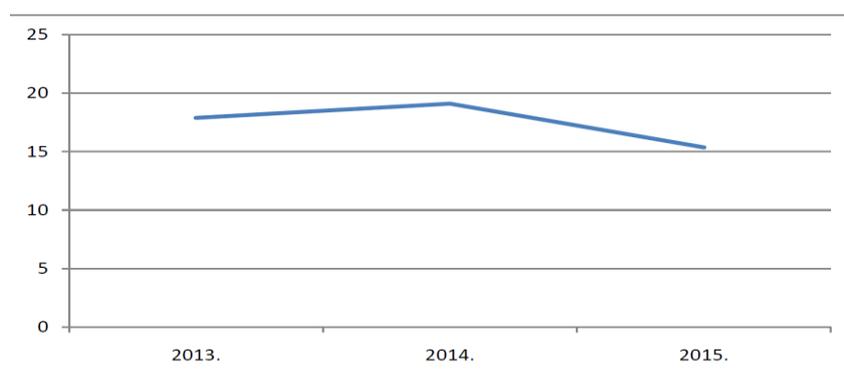


Figure 1 ROA values for Agromarket

Source: Author

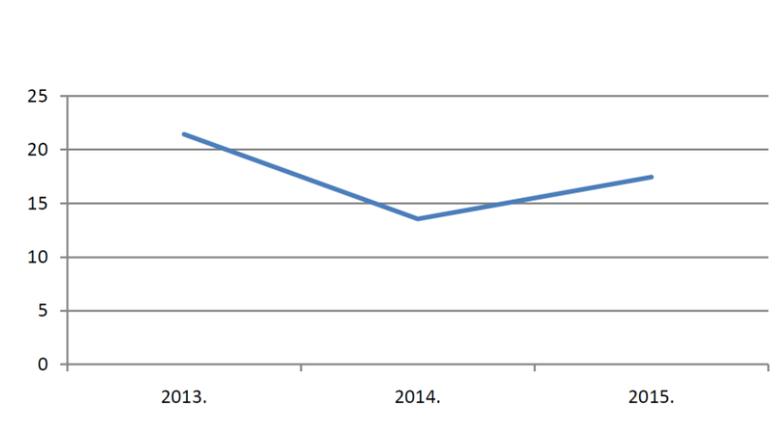


Figure 2 ROE values for Agromarket

Source: Author

According to the data presented in Table 3 for Agromarket enterprise, it could be concluded that ROA was higher in 2014 by 6,8 percentage than in 2013, and lower in 2015 by 14,14 percentage than in 2013, and by 19,58 lower than in 2014. ROE was lower in 2014 by 36,72 percentages than in 2013; in 2015 by 18,53 percentages lower than in 2013, but by 28,8 percentages higher than in 2014.

Table 4 Društvo sa ograničenom odgovornošću za proizvodnju, promet i posredovanje Nikom doo Kragujevac (Limited Liability Company for production, trade and mediation)

In 000 din.

Year	Operating Revenue	Sales	Operating Income	Net Income	Total Assets	Capital
2013.	1 362.291	1 358.284	126.950	77.574	1 422.425	903.889
2014.	1 253.001	1 248.612	44.806	80.755	1 805.069	984.644
2015.	1 486.068	1 463.665	61.646	74.287	1 989.923	1 058.931

Source: Serbian Business Registers Agency, <http://pretraga2.apr.gov.rs/pretragaObveznikaFI/>

Table 5 ROA and ROE values for NIKOM

Year	ROA (Operating Income/Assets*100)	Fixed Base Index	Chain Index	ROE (Net Income/Capital*100)	Fixed Base Index	Chain Index
2013.	8,92	100	/	8,58	100	/
2014.	2,48	27,80	27,80	8,20	95,57	95,57
2015.	3,10	34,75	125	7,02	81,82	85,61

Source: Author's calculation

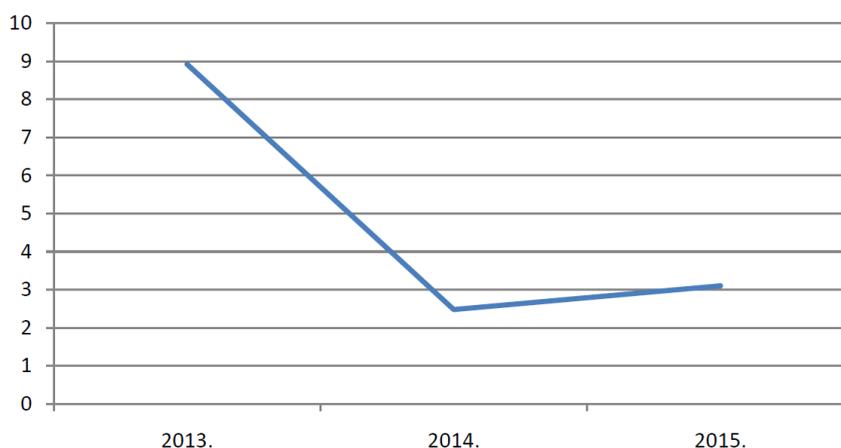


Figure 3 ROA values for Nikom

Source: Author

According to the data presented in Table 5 for Nikom enterprise, it could be concluded that ROA was lower in 2014 by 72,2 percentages than in 2013, and lower in 2015 by 65,25 percentages than in 2013, but higher by 25 percentages than in 2014. ROE was lower in 2014 by 4,43 percentages than in 2013; in 2015 by 18,18 percentages lower than in 2013, and by 14,39 percentage lower than in 2014.

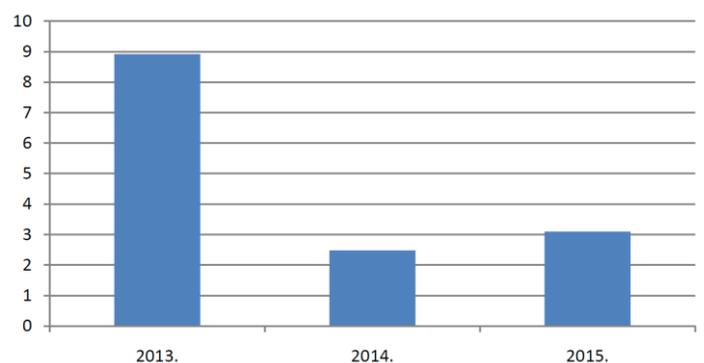


Figure 4 ROE values for Nikom

Source: Author

Table 6 Prizma preduzeće za proizvodnju, spoljnu i unutrašnju trgovinu, međunarodnu i unutrašnju špediciju, jednočlano društvo sa ograničenom odgovornošću, Kragujevac (Prizma enterprise for production, foreign and domestic trade, international and domestic freight forwarding, one-member limited liability company)

In 000 din.

Year	Operating Revenue	Sales	Operating Income	Net Income	Total Assets	Capital
2013.	674.723	603.255	87.679	80.622	1 103.479	945.038
2014.	717.411	623.801	96.351	101.094	1 171.746	1 011.131
2015.	704.564	580.846	47.086	65.719	1 190.814	1 041.890

Source: Serbian Business Registers Agency, <http://pretraga2.apr.gov.rs/pretragaObveznikaFI/>

Table 7 ROA and ROE values for PRIZMA

Year	ROA (Operating Income/Assets*100)	Fixed Base Index	Chain Index	ROE (Net Income/Capital*100)	Fixed Base Index	Chain Index
2013.	7,95	100	/	8,53	100	/
2014.	8,22	103,4	103,4	9,99	117	117
2015.	3,95	49,7	48,1	6,31	74	63

Source: Author's calculation

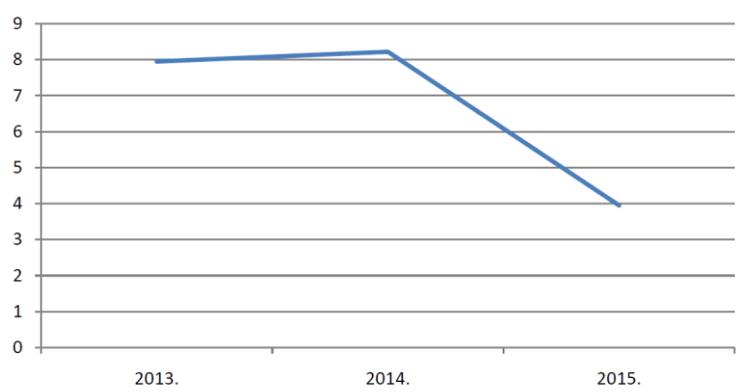


Figure 5 ROA values for Prizma

Source: Author

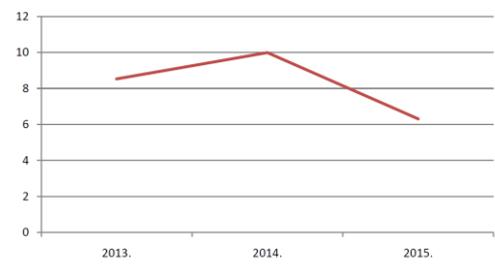


Figure 6 ROE values for Prizma

Source: Author

According to the data presented in Table 7 for Prizma enterprise, it could be concluded that ROA was higher in 2014 by 3,4 percentage than in 2013, while in 2015 lower even by 50,3 percentage than in 2013, and lower by 51,9 percentage than in 2014. ROE was also higher in 2014 by 17 percentages than in 2013, while in 2015 lower by 26 percentages than in 2013 and by 37 percentages than in 2014.

Table 8 Društvo sa ograničenom odgovornošću za proizvodnju trgovinu i agencijski marketing Sanel, Kragujevac
(Limited Liability Company for Production, Trade and agency marketing)

In 000 din.

Year	Operating Revenue	Sales	Operating Income	Net Income	Total Assets	Capital
2013.	1 342.916	1 336.074	35.590	46.253	1 015 571	781.277
2014.	1 379.308	1 367.156	31.926	44.465	1 094 866	817.842
2015.	1 622.957	1 610.756	42.254	57.446	1 174 052	863.687

Source: Serbian Business Registers Agency, <http://pretraga2.apr.gov.rs/pretragaObveznikaFI/>

Table 9 ROA and ROE values for SANEL

Year	ROA (Operating Income/Assets*100)	Fixed Base Index	Chain Index	ROE (Net Income/Capital*100)	Fixed Base Index	Chain Index
2013.	3,50	100	/	5,92	100	/
2014.	2,92	83,4	83,4	5,44	91,9	91,9
2015.	3,60	102,9	123,3	6,65	112,3	122,2

Source: Author's calculation

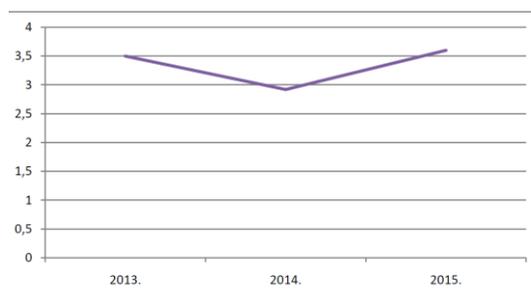


Figure 7 ROA values for Sanel

Source: Author

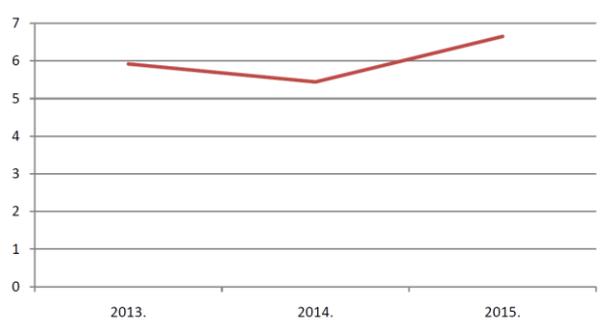


Figure 8 ROE values for Sanel

Source: Author

According to the data presented in Table 9 for Sanel enterprise, it could be concluded that ROA was lower in 2014 by 16,6 percentage than in 2013, while in 2015 higher by 2,9 percentages than in 2013, and by 23,3 percentages than in 2014. ROE was lower by 8,1 percentage in 2014 than in 2013, while in 2015 higher by 12,3 percentage than in 2013, and by 22,2 percentage than in 2014.

Table 10 Preduzeće za proizvodnju i promet nameštaja Forma Ideale doo Kragujevac
(Company for production and trade of furniture)

In 000 din.

Year	Operating Revenue	Sales	Operating Income	Net Income	Total Assets	Capital
2013.	6 457.804	2 570.101	628.558	383.457	4 840 924	2 298 046
2014.	6 614.852	2 684.482	614.877	403.664	4 891 797	2 504 113
2015.	7 138.087	2 799.223	638.444	441.231	5 372 658	2 835 831

Source: Serbian Business Registers Agency, <http://pretraga2.apr.gov.rs/pretragaObveznikaFI/>

Tabela 11 ROA and ROE values for Forma Ideale

Year	ROA (Operating Income/Assets*100)	Fixed Base Index	Chain Index	ROE (Net Income/Capital*100)	Fixed Base Index	Chain Index
2013.	12,9	100	/	16,7	100	/
2014.	12,6	97,7	97,7	16,1	96,4	96,4
2015.	11,9	92,2	94,4	15,6	93,4	96,8

Source: Author's calculation

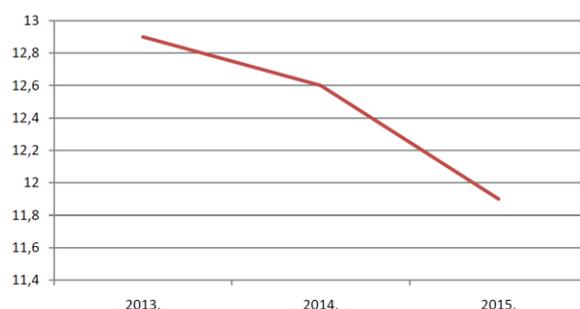


Figure 9 ROA values for Forma Ideale

Source: Author

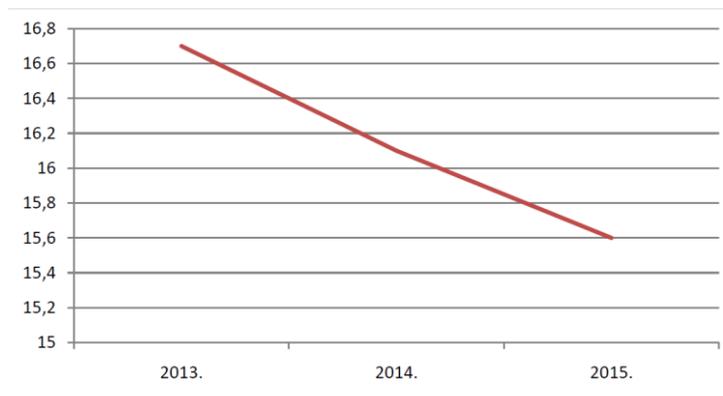


Figure 10 ROE values for Forma Ideale

Source: Author

According to the data presented in Table 11 for Forma Ideale enterprise, it could be concluded that ROA was lower in 2014 by 2,3 percentages than in 2013, while in 2015 lower by 7,8 percentages than in 2013, and by 5,6 percentages than in 2014. ROE was also lower by 3,6 percentages in 2014 than in 2013, while in 2015 lower by 6,6 percentages than in 2013, and by 3,2 percentages than in 2014.

Tabela 12 ROA and ROE values for observed enterprises sample

<i>Firm</i>	<i>2013.</i>		<i>2014.</i>		<i>2015.</i>	
	<i>ROA</i>	<i>ROE</i>	<i>ROA</i>	<i>ROE</i>	<i>ROA</i>	<i>ROE</i>
Agromarket	17,89	21,43	19,10	13,56	15,36	17,46
Nikom	8,92	8,58	2,48	8,20	3,10	7,02
Prizma	7,95	8,53	8,22	9,99	3,95	6,31
Sanel	3,50	5,92	2,92	5,44	3,60	6,65
Forma Ideale	12,9	16,7	12,6	16,1	11,9	15,6

Source: Author's calculation

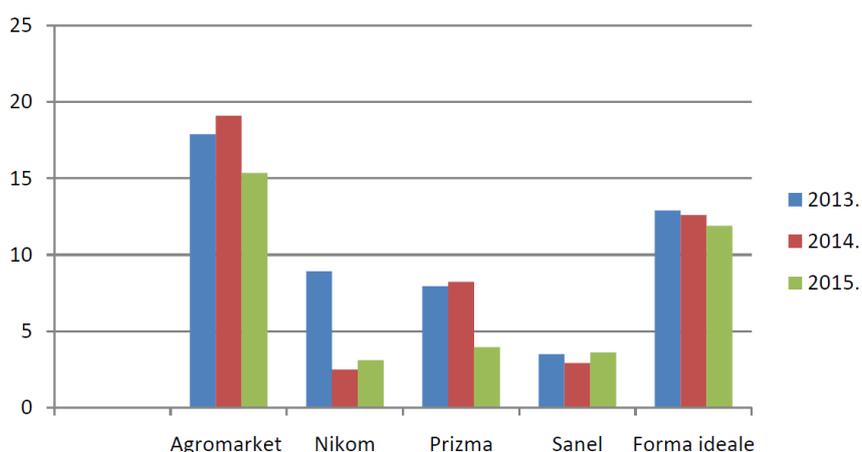


Figure 11 ROA values for observed enterprises sample

Source: Author

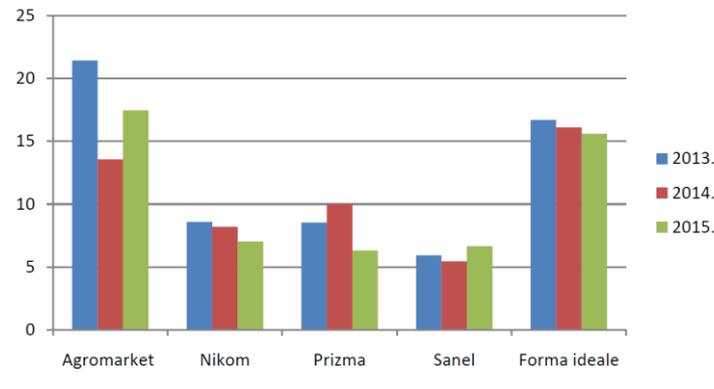


Figure 12 ROE values for observed enterprises sample

Source: Author

According to the data presented in Table 12 and concerning ROA values, it could be observed that during the last three-year period, Agromarket was at the top level. Then, it Forma Ideale comes, although it was the last one in this sample, respecting the net income in 2012. In 2013, Nikom is at the third place, but in 2014 and in 2015, Prizma is at the third place. In 2013, Prizma is at the fourth place, and in 2014 and in 2015, Sanel is at the fourth place. Finally, in 2013, Sanel is at the last place, and in 2014 and in 2015, Nikom is at the last place.

Concerning ROE values, it could be concluded that during the last three-year period, Agromarket was at the top level in 2013 and in 2015, while in 2014, Forma Ideale was at the top level. In 2013 and in 2015, Forma Ideale was at the second place, and in 2014, Agromarket was at the second place. In 2013 and in 2015, Nikom was at the third place, while in 2014, Prizma was at the third place. In 2013, Prizma was at the fourth place; in 2014, Nikom was at the fourth place and in 2015, Sanel was at the fourth place. Finally, Sanel was the last one in 2013 and in 2014, but in 2015 Prizma was the last one.

5. CONCLUSION

Profitability as the last, but not least important and the most comprehensive term business success and efficiency of the company measured and expresses the reproductive capacity of the company.

In the modern business environment, traditional measures of profitability are becoming inadequate for assessing corporate strategy. Despite numerous criticisms of traditional accounting criteria, it still has - and will have - a central role in the life of the company. Whatever their limitations, they are too associated with legal and regulatory side of the business to be completely replaced with new approaches. Profit is the comprehensive and the most important indicator of company's efficiency.

But profit is not a valid profitability measure in absolutely sense. Contrary, only in relative sense, as a ration, profit could be a valid profitability measure. In that context, profit is compared with assets, capital or invested capital, and only then we could say whether the profitability is increasing or decreasing in the observed period.

The research results deny the starting hypothesis, that the most successful enterprises regarding the net income would also be the most successful regarding the profitability measures, such as return on assets (ROA) and return on equity (ROE). It happened that the enterprise, which was the last one in respect to net income in 2012, was at the mere top level

concerning ROA values and conversely, the enterprises, which were at the mere top level concerning the net income, got last or penultimate place concerning ROA or ROE values in the last three-year period.

The research has its limitations. In order to calculate profitability measures, it is important to use an average sum of the assets or equity, but it was not possible to calculate in 2015 since there was no data for the assets at the beginning of the year. Thus, ROA was calculated with the total assets value at the end of the year. Further, the sample is too small. There are 16 the most successful enterprises in 2012 regarding the net income, but for this purpose because of time limitation, it was selected the first five enterprises. Finally, in order to rank the most successful enterprises, it is not enough to consider just ROA and ROE, but also some other financial measures and non-financial measures, as well.

In future, the research should span over more enterprises and it should be considered more financial and non-financial measures in order to rank the most successful enterprises in local economy. Thus, more realistic survey of the most successful enterprises in local economy would be provided.

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THE ROLE OF SOCIAL RESPONSIBILITY IN CREATING SUSTAINABLE COMPETITIVE ADVANTAGE OF COMPANIES

Aleksandra Ristović¹

Abstract: *This paper presents Corporate Social Responsibility (CSR) as a factor in creating a sustainable competitive advantage. The actuality of problem area emphasizes the significance of Corporate Social Responsibility as an important aspect of the third pillar of sustainable development and its role in modern business. The operations in this way should be seen as an instrument for achieving a long-term sustainable competitive advantage, not as a popular trend in which companies improve reputation in the short run. Research results based on literature review show the influence of social responsibility concept application on strengthening the brand position, improving the corporate identity, image, and reputation, the positive impact on employees and reduction in business operating costs.*

Keywords: *sustainable development, corporate social responsibility, competitive advantage*

JEL Classification: *M14*

1. INTRODUCTION

The modern world is significantly facing with the needs of global, shared responsibility for development according to the needs of humans and nature, and the understanding that the planet Earth should be preserved for both present and future generations in an acceptable manner. Sustainable development has become one of the key elements in the development policies formulation and implementation. It implies the harmonization of economic, social and environmental demands (Nadić, 2012).

It is necessary to bring into balance the three pillars of sustainable development (Giddings, Hopwood & O'Brien, 2002): an ecological dimension related to the rational use of natural resources, reducing environmental pollution, etc. (Hafner, 2009), then the economic dimension founded on principles of coherence between economic development, production capacities, and resources, and finally social dimension that refers to social relations, respect for human rights, achieving social welfare, transparency of social activities, etc. Corporate Social Responsibility (CSR) is an important aspect of the third pillar of sustainable development.

CSR is a concept that is still developing and for which there is not yet precisely defined a set of specific criteria that determine what it encompasses. Although there are different definitions of CSR, all of them agree on one thing – company should take responsibility for the impact of its business activities on stakeholders, community, and the environment, in order to voluntarily contribute to society welfare with these activities. This is yet another step further than what is prescribed by legal regulations (Veljkovic&Petrović, 2010).

Weber (2008, p. 249) systematized and presented a large number of scientific research about the connections between CSR and business performance, and about benefits that company has from adopting and developing socially responsible practice. Therefore, there are five basic categories of benefits: a positive impact on corporate image and reputation; a positive impact on employees' recruitment, motivation, and retention; operating cost reduction; increase

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revenue as a result of increased sales or market share, and risk reduction during new investments of the company.

Kotler & Li (2005, p.3) distinguish six key benefits of investing in socially responsible business: increasing sales and market share, strengthening the brand position, enhance corporate image and influence, boosting opportunities for attracting, motivating and retaining employees, reducing operating costs and increasing attractiveness for investors and financial analysts. In accordance with the key benefits of social responsibility, the purpose of this paper is to analyze the role of CSR in creating a sustainable competitive advantage of the company. Based on defined problem areas the research aim is to reach scientifically valid, theoretically based, socially relevant and practically useful knowledge about the influence of CSR concept on company's competitive advantage.

In the paper will be tested a general hypothesis: The concept of CSR is an instrument by which we can achieve a sustainable competitive advantage of enterprises. According to that, paper consists of the three sections. The first section emphasizes and explains the essence and importance of CSR. The second part highlights the benefits of socially responsible business practice and it influences on sustainable competitive advantages creation. Finally, the third part presents conclusions and recommendations for competitive advantage improvement based on CSR concept.

2. CORPORATE SOCIAL RESPONSIBILITY - THE ESSENCE AND IMPORTANCE

Economic globalization, liberalization of world trade and economic integration in the international market, allowed access to previously inaccessible markets. In such globalized economy, corporate sector continuously gains greater power and influence not only over the commercial but also over the wider social sphere. The result is an increased pressure and a growing public interest in the topic of corporate responsibility and transparency in business, which eventually formed CSR concept that goes beyond the narrow goal of increasing sales and short-term profit maximization and highlights the commitment of companies to coordinate their operations with the needs of society and environment.

In an effort to contribute to the community in which operates, company need to be involved in social problems solving in accordance with own capabilities, to offer a matching contribution through its investment in environmental protection, to provide the education and scholarships for different groups of citizens, to protect human rights and ensure the social construction of the necessary facilities, to improve the conditions for the preservation of health, etc. (Veljkovic&Petrović, 2010).

By this concept, companies integrate the community and environment interests into their operations and affect the interest groups on a voluntary basis. This term highlights three essential characteristics. First, CSR includes environmental issues. Second, CSR takes into consideration not only the interests of the company members (shareholders) but also different interest groups (stakeholders). Third, CSR is a voluntary concept (Arsic, 2011, p.45-52).

Socially responsible behavior is a desirable long-term marketing and business orientation of the company. Its essence is in operations that reach much more than what is prescribed by law and includes the idea that a reactive attitude to social problems should be replaced with proactive, voluntary and preventive activities, so to prevent limited resources wasting on removing the consequences of illegal and unethical behavior (Veljkovic&Petrović, 2010).

CSR is the concept of corporate governance that maintains a balance between economic and social objectives for the sake of "establishing higher standards of living, while keeping the

profitability of the company, for the people in and outside the company" (Cadbury, 2000; Hopkins, 2005). Business success in the global economy is related to the adaptation and appreciation of current challenges and trends. According to the above mentioned, we can conclude that for the creation of sustainable competitive advantage is crucial management's perception of social responsibility as an activity that creates value for the company and the local community, instead of being an expense.

CSR is a concept by which organization that adopts it, consciously and voluntarily surpasses primary function of gaining and distribution of profits and tends to have a positive impact on its working, social and natural environment. Corporate Social Responsibility represents awareness of the new position and importance of organizations in a global society and liabilities arising from them.

This concept represents the company's commitment to the internal and external public to contribute to better quality of life for employees and their families, the economic development of local communities, national economy, and the whole society. Being a socially responsible company does not mean only to fulfill a legal obligation but also involves investment in human capital, environment and relations with the stakeholders. Organizations are not only responsible for the profit that they make in front of shareholders but also in front of individuals and groups affected by profit in any way. Organized public more frequently and more effectively forces the organization to operate with more responsibility regarding the local community and the whole society, to have more sustainable behavior towards nature and more humane attitude towards employees.

CSR takes into account the interests of various social groups and brings benefits to society (mitigation of different problems) and to enterprises (by creating a sustainable competitive advantage). Thanks to that and due to the presence of numerous global social and environmental problems, CSR concept is becoming more and more acceptable. But since this is a relatively new concept, there are various approaches in its conceptual definition and methods of application (Ivanović & Đukić, 2011).

Socially responsible behavior of enterprises can be motivated by the law, consumers or other stakeholder requirements. Integration of legal, moral and ecological principles within the business processes and strategies does not mean minimization of the economic significance. On the contrary, involves the consideration of these liabilities from the perspective of the wider social benefits.

Porter and Kramer (2004) point out that besides the direct contribution of CSR to enterprises competitiveness; there is an indirect return impact through the community. As the economy and society are interconnected and conditioned elements, one element development positively influences on other and vice versa. For example, if companies are helping educational system improvement of a particular society, they will improve educational structure, which in turn will increase the performance of their business thanks to the supply of qualified labor.

Good impressions and benefits from investments in socially responsible business practices are related to the way in which company communicates with customers and other target groups and partners. Such communication requires understanding their perceptions of this concept. Therefore, for an adequate communication program creation, the emphasis must be on an effort to evaluate the significance that this concept has for customers. Informing customers about the company's activities for the benefit of the community is an essential part of a planned and systematic approach to this concept.

3. CORPORATE SOCIAL RESPONSIBILITY AS A WAY OF CREATING A COMPETITIVE ADVANTAGE

There are different benefits of socially responsible business practices among companies that operate in developing countries and large international companies. Transition countries benefit from reduced operating costs, while the multinational companies benefit from reputation advancing, strengthening the brand value, improving motivation and retention of employees. Key benefits of socially responsible practices are: strengthening the brand position, improving the corporate identity, image, and reputation, the positive impact on employees and reduction in business operating costs.

3.1. Strengthening the brand position

In conditions of higher competition and market saturation, companies need to find a way to demonstrate their uniqueness, innovation, differentiation, and care for stakeholder's interests. Over time there have been various methods and communication strategies of socially responsible activities among which are, branding based on the positive impact on health, causal, and environmental marketing. By applying these strategies, companies inform the public about its business, brands, initiatives and efforts to solve the problems of the local community. As Tepavac&Kostić-Stanković (2014) suggest connecting the brand with the responsible operations leads to numerous benefits, including the strengthening the company's brand image, products, and services, which can lead to better business results, loyal customer base, increased customer satisfaction, good reputation, increased demand for products and services.

Pornpratang, K., Lockard, D. W. and Ngamkroekjoti C. (2013) considered that corporate social initiatives generate many advantages for the companies, which are expressed through loyalty and consumer confidence, a positive attitude toward the brand, increasing profits, the negative publicity prevention, brand re-purchasing. That raises the question whether the consumers who buy the products of socially responsible companies concerned about the environment. Research results indicate that consumers will prefer to buy the products of companies that have socially responsible behavior and care about the environment because such products have a positive effect on the image that consumers have of themselves.

According to the research of Elen, PS, Web, DJ, and Mohr, LA, (2006), there is a connection between CSR and consumer attitudes. So it is important how consumers perceive the motives of companies to engage in the implementation of CSR, i.e. Companies can be involved in this activities because of their own profit interests or because of concern about the community in which operate. The positive perception will have a positive impact on consumers' purchase intentions.

In order to achieve brand differentiation over the competition, an enterprise should improve living conditions and solve problems in the community in which it operates through designed social initiatives and efforts, like donating large amounts of products to charitable organizations, creating new jobs, donating cash or other funds for different projects, employee volunteering, educating members of the community. Since the brand is a term without we could not imagine a successful, well-known company, particular attention must be paid to its creation. If consumers believe that the company is socially responsible, it is likely that they will be loyal to its brand, regardless the similar competition product, because famous brands go a step further and provoke emotional responses from their consumers. These emotions create a connection between the consumer and brand and according to them the real

difference between successful and less successful brands can be distinguished. Consumers have paid increasing attention to the emotional, psychological and sociological aspects of the brand image, overcoming issues of functionality and rational benefits which have the product. All this greatly facilitates making purchasing decisions and encourages greater interest in certain products.

According to the research of Garriga & Mele (2004), „Investing in philanthropic activities may be the only way to improve the context of the competitive advantage of a firm and usually creates greater social value than individual donors or government can.” Burke and Lodgson (1996) pointed out that when philanthropic activities are closer to the company’s goals, they make a larger contribution to the firm than others ways of donating. We can see this through an example of a telecommunications company teaching computer network administration to students of the local community.

So, CSR can lead to strengthening the brand position if consumers relate the brand and humanitarian activities or social goals that the company supports. What can particularly contribute to these initiatives is the allocation of earnings from the brand sale to certain humanitarian actions (Kotler, Lee 2003, 16). Due to this reason, socially responsible corporations much easier gain confidence and attract new customers, while customer’s loyalty brings sustainable competitive advantage.

3.2. Improving the corporate identity, image, and reputation

Each company has an identity, image, and reputation. As Margulies suggested (1997, p.66) corporate identity refers to how the organization perceives itself and how it wants to be seen by stakeholders. The identity of the company is the sum of all the ways in which it presents itself to the general public. The image of the company is inseparable from its identity.

The corporate image refers to the way in which the organization is perceived by stakeholders. It results from the interaction of the experiences, impressions, beliefs, and feelings that the public has of the company. Therefore, the image is the result of experienced and not actual quality of the company. This psychological creation determines business or market behavior toward the company’s product or services, changes very gradually and can be positive or negative. It must be properly designed, properly directed, and continuously managed. Through the corporate image, the company has to present to the general public what its scope of business is, what it stands for, what are its products and economic indicators. According to Ljubojevic & Ljubojevic (2010), the ideal situation is when the corporate image is identical to the corporate identity.

The word reputation is conducted from the Latin word "reputance" that means to assess, to judge, to observe. Contemporary research of elements that influence the success of companies shows a growing interest in the intangible values. Reputation with intellectual capital and organizational assets makes that intangible asset. It can be neither bought nor recovered, but can be lost in an instant. Reputation is integrated by the three intangible values: characteristics (what the company actually is), identity (what the company claims to be) and image (how other perceives the company). The essential elements of company’s reputation are reliability, credibility, trust, and responsibility.

According to a study conducted by Fombrun and Van Riel (2004) the coefficient of reputation consists of six categories by which the public explains reasons of good company's reputation: emotional judgment - liking, admiration, and trust in the company; products/services - high quality, innovation, reliability and cost-effectiveness; financial result - profitability, low

investment risk and confidence in further growth; vision and leadership - market opportunities, great leadership, and a clear future vision; working environment - a well-run company, excellent workplace 'opportunity' and good employees; corporate social responsibility - supporting good outcomes and general well-being, responsibility to the environment and the community and maintaining high standards in the way it treats people.

In one of the most frequently cited studies conducted by Sen and Bhattacharya (2001), one of the key conclusions is that the company's reputation in the eyes of the consumers is more sensitive to negative information related to CSR than a positive. In the research all consumers have reacted negatively to the information that the company uses children as labor in its production facilities, while only part of consumers responded positively to social initiatives that company has conducted and only those who were personally interested in that topic, while the others were neutral.

The local community expects from businesses to recognize and accept responsibility for the social and environment protection in which they carry out their business activity. Corporate philanthropy can improve the identity of the company and establish a reputation as a company that serves the common good. In this way, the company can differ from other companies and have a better-positioned image, i.e. reputation in the eyes of potential users. Hillman & Kerim (2010) point out that the corporation is obligated to establish and maintain relationships with primary stakeholders.

The reputation of one company is an invisible, but significant element of business strategy. A positive reputation is specific immaterial company's asset. The company may have a reputation as a socially responsible company if it takes into account the realization of wider social objectives and interests. Therefore, the reputation can be seen as a key resource. Reputation can be extremely valuable, rare, and difficult to copy and in this sense irreplaceable, providing a unique competitive advantage of companies (Đorđević, 2008, p.36).

After examining the literature sources following benefits from the reputation can be systematized (Gruning & Hung, 2002): higher market share; reduce in marketing and distribution costs; the possibility of a premium charging; the possibility of survival in difficult times; higher employee productivity; the ability to attract and retain talent and investors; provide access to new markets; and ensure greater media coverage. Reputation has paramount importance for all stakeholders. According to the research of Saeed & Arshad (2012), there is a positive relationship between CSR and reputation of the company. A positive individual perception of the firm's CSR activities has the significant influence on creating a positive reputation. Moreover, reputation is the part of the company's market value. That is how the company can be treated as a responsible citizen. Also, CSR activities will increase the corporate image of the organization in the eyes of its stakeholders.

Positive corporate image and reputation increase the value of company's stocks which boosts the attractiveness to new investors who want to invest in companies that are less exposed to social, ethical and environmental risks, rather than in those that do not adhere to a certain standard of living and social environment. Companies that have adopted concept and in this way built a positive corporate image and reputation, provide competitive advantages and better access to capital that might not otherwise be available.

3.3. The positive impact on employees

The participation of some company in socially beneficial initiatives has a positive impact on employees, managers, and those who are yet to be employed, in respect of their attracting,

motivating, and retaining. The reason for this is that employees besides the salary, job descriptions and opportunities for promotion are increasingly estimating companies based on CSR. This way is much easier for the company to recruit high-quality and competent staff.

Creating a safe and secure work environment that suits employees and meeting their needs, provides a greater degree of understanding companies' goals by employees and reduces conflict between individual and company aims. Such company will be positioned in the group of best employers, who conduct their business with higher productivity and profits, better sustainability and competitiveness, lower fluctuation and greater loyalty of the workforce. Because of the increased commitment, motivation, and employee satisfaction the company will achieve an advantage over the competition in the long run. The costs of re-recruitment and workforce training will be reduced as a result of workers loyalty which additionally creates the same outcome.

According to a study conducted by Brammer, Millington & Rayton (2007) about the relationship between employees' attachment to the organization and employees' perceptions of CSR, it has been determined that there is a positive correlation between CSR and its impact on attracting and retaining staff motivation. Also according to them the contribution of CSR is important equally as the job satisfaction of employees.

According to Weber (2008), CSR has a direct impact on employees to be more motivated due to a better operating environment, or due to participation in various CSR initiatives such as, for example, volunteer programs. Similarly, the company's CSR activities have a positive impact on the company's attractiveness to potential employees.

Employees are major stakeholders of companies (Green Paper, 2001). Brekke and Nyborg (2008) conduct that 'green' firms can recruit motivated employees who are a team oriented and that they will provide a long-term performance for the company. Turban and Greening (1997) also propose that CSR can attract good, qualified employees. High level of CSR can also reduce costly employee turnover (Portney, 2008).

CSR can improve the productivity of employees in different ways. According to the Delmas & Pekovic (2013), adoption of environmental standards might increase employee's identification with their firm and result in enhanced labor productivity. Second, the adoption of environmental standards is related to organizational changes, like the implementation of employee training programs and higher levels of interpersonal interactions, or greater employee engagement, which may result in increased productivity. Training can lead to more efficient workers, and interpersonal contacts can help employees to engage in knowledge transfer and leads to innovative ideas that improve productivity. Interpersonal contacts can also promote employees' satisfaction and motivation, which in turn lead to increased productivity. It is very important what investors and potential future employees believe the firm's true CSR level is (Crifo&Forget, 2014).

Companies that have socially responsible behavior towards the community in which they operate will influence their employees to be more devoted, especially if they live in the same environment. Besides that, employees will be more innovative, productive and more enthusiastic when they perform their duties, and all of that will increase the quality of products and company's services. In this way, employees can also be motivated to acquire new skills and encouraged to find innovative ways not only for costs reduction but also for the identification and exploitation of new profit maximization possibilities.

3.4. Reduction in business operating costs

In the field of environmental protection CSR includes production process, based on activities that use renewable sources of energy, raw materials, and material that are less harmful to the environment and that observe the standards of organic production and waste management. Such companies are using more efficient production system, less energy and do not pollute the environment. Recycling and products and raw materials reusing are also an important way of environmental protection. With the aim of minimizing the negative impact on the environment, companies are also using an innovative, modern technology.

Another subject of intense discussion in studies about sustainability is cost reduction. Epstein and Roy (2001) argue that an increase in efficiency may occur as a result of the material changing during the implementation of sustainability strategies. Further, improving contacts with certain stakeholders such as regulatory authorities, results in time savings and provides wider access to capital in conditions of greater investor sensitivity to issues of sustainability. Cost savings may also occur as a result of tax exemptions or reduction of other obligations which are guaranteed by the state in exchange for the promotion of CSR (Schaltegger, 1998).

If company develop positive relationships in the community, that will contribute to achieving tax advantages and decrease the amount of regulation, because the firm will be perceived as CSR member of the society (Caroll & Shabana 1, 2010). According to the research conducted by the Fortune (2003), 73% of respondents emphasize that “cost reduction” is one of the three most important reasons for making organizations more socially responsible.

Socially responsible business operating in the area of environmental protection is aimed at reducing waste, reusing materials, recycling, water and energy savings, reduce operating costs and increase revenue from grants and allowances, which they receive as a result of implemented corporate social initiatives. Another area of potential cost reduction is free advertising, thanks to increased publicity. Large positive publicity due to the implementation of some important social initiatives represents pure profit for the company concerning costs and benefits.

By reducing operating costs, the company generates a significant advantage over competitors. The lowest costs in the industry give the company privileged status: the possibility to set lower prices than rivals and achieve greater market share or profits than its competitors.

4. CONCLUSION

Through this paper, the general hypothesis has been confirmed. CSR concept can enable the company to achieve sustainable competitive advantage through strengthening the brand position, improving the corporate identity, image, and reputation, the positive impact on employees and reduction in business operating costs.

The scientific contribution reflected in highlighting the essential elements of corporate social responsibility i.e. the operations in this way should be seen as an instrument for achieving a long-term sustainable competitive advantage, not as a popular trend in which companies improve reputation in the short run.

CSR is a concept by which companies integrate the interests of the community into their business. There is a growing number of successful companies that are trying to fully understand the complex relationships between the business world and society and to involve public welfare in their decision-making processes. The paper indicates the importance of companies participation in solving the problems facing humanity, their employees,

consumers, or suppliers. Investing in community improvement creates long-term benefits for both the organization and society and achieves more stable and predictable company operations.

The use of CSR concept in the management of the companies is significant for achieving competitive advantage. In order to reach that target, companies should develop a variety of methods and strategies for communicating socially responsible activities. By applying these strategies, the company informed public about its business, brands, initiatives and efforts to solve problems of the local community. So, if the company is perceived as CSR firm that will lead to better business results, create a loyal customer base, increase consumers and customers satisfaction, and retain good reputation, etc. As a final result, the company will have a competitive advantage over its competitors.

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GLOBALIZATION AND REGIONALIZATION

THE ROLE OF LPI AS AN INDICATOR OF MACROECONOMIC PERFORMANCE: POSITION OF SERBIA

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Abstract: *Improving the cumulative logistics performance on a micro level represents the core of global economic growth and competitiveness strengthening. That is the reason why the creators of economic policies worldwide have recognized the logistics sector as one of the key bearers of economic development and devised the logistics performance index (LPI) as its indicator. The aim of this paper is to perform an in-depth analysis of the LPI, as an indicator of macroeconomic performance, focusing on its most important aspects. These aspects include the review of key LPI components (customs, infrastructure, ease of arranging shipments, logistics services quality, tracking and tracing, timeliness) and its general importance; the methodology setting for LPI measurement; and finally the review of latest LPI results for Serbia. Results obtained from this analysis should serve as a set of guidelines for improving the national logistics system, and in due course, general competitiveness of the Serbian economy.*

Keywords: *Logistics performance index (LPI), macroeconomic indicator, competitiveness, World Bank, Serbia.*

JEL Classification: *M20, M21, M29*

1. INTRODUCTION

In the era of general globalization, shortening of product life-cycles and ever growing intensive competitive relations on the global market, logistics has defined itself as a strategic source of competitive advantage (Mentzer et al., 2001). Freight-forwarders and transporters have become the core of the current wave of globalization: they simplify the complex process of connecting companies, suppliers and consumers, united under the term space internet (Ballou, 2004). The access to space internet is free for all countries, but in a great deal depends on the quality of their infrastructure, as well as the effectiveness of their policies and institutions (Kam et al., 2003).

The improvement of logistics performance represents the core of the economic growth and competition strengthening. The creators of economic policies around the world have recognized the logistics sector as one of the key bearers of economic development (Božić, Aćimović, 2014).

For that reason, the governments of different countries emphasise the effectuation of numerous measures and projects with the aim to simplify trade and transport, with the aid of the World Bank and numerous other development agencies. But, the lack of performance indicators needed to compare and estimate the logistics outcomes, significantly hardens the efforts of governments and private sector to identify the obstacles which may be encountered on the global market (Lambert, 2008). Due to such a state, numerous global experts, under

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the patronage of the World Bank, have started to devise indicators which shall allow the estimate and comparison of logistics performance of individual states. In such a manner, the first report on state logistics performance was created in 2007, under the title *Connecting to Compete 2007: Trade Logistics in the Global Economy - The Logistics Performance Index and Its Indicators*. This report was created as a result of more than 5.000 individual grades of logistics performance and it has 150 countries ranked and graded within it. Since 2007 up to now, in every two years, the World Bank has published three more reports on country logistics performance. The rule of the Bank is to carry out a research during every two years concerning the performance of individual country logistics system and to publish those results in the upcoming „Connecting to Compete“ reports (Arvis et al., 2014).

2. LPI COMPONENTS AND IT'S GENERAL IMPORTANCE

The Logistics Performance Index- LPI represents an interactive benchmarking tool developed by the World Bank, which serves to measure the effects of logistics performance in individual country supply chains. The LPI helps countries to identify challenges and possibilities which they encounter while managing logistics, but also to point out the manner in which performance of those countries can be improved (Aćimović, Mijušković, 2015).

The data needed to calculate the LPI are gathered via an on-line survey filled out by professionals doing business in the logistics sector. The survey is comprised of two parts. The first part refers to the qualitative assesment of the state of basic categories of logistics performance, i.e. the LPI indicators of chosen countries where the survey participants are located. The second part is formed of questions which demand giving quantitative data and qualitative assesments on logistics performance of the country where the participants work.

Based on these two groups of data, two types of LPI indicators are formed (Arvis et al., 2014):

- The international LPI- it demonstrates the image of the general state of logistics performance on the level of the global market, the region, group of countries formed on the basis of the same income.
- The domestic LPI- it demonstrates the state of the logistics sector at the level of an individual state, it identifies the possible weak links of the supply chain and it points out the possibilities of their ellimination, i.e. which segments of the supply chain could be improved.

Within the first issue of the report *Connecting to Compete: Trade Logistics in the Global Economy*, the individual country logistics performance are analyzed based on seven performance components, while today the estimate is made only based on six components. Namely, the domestic logistics costs have been excluded from the analysis. Therefore, the components of logistics performance which are analyzed for the needs of forming the LPI are (Arvis et al., 2014):

- Efficiency of customs and accompanying procedures (speed, simplicity and predictability of formal procedures);
- Quality of trade and transport infrastructure (roads, railway and information technologies);
- The ease of arranging pricely competitive international shipments;
- The competitiveness and quality of logistics services- transport, freight forwarding, customs intermediation;

- The possibility of tracking and tracing the shipment;
- The shipment timeliness.

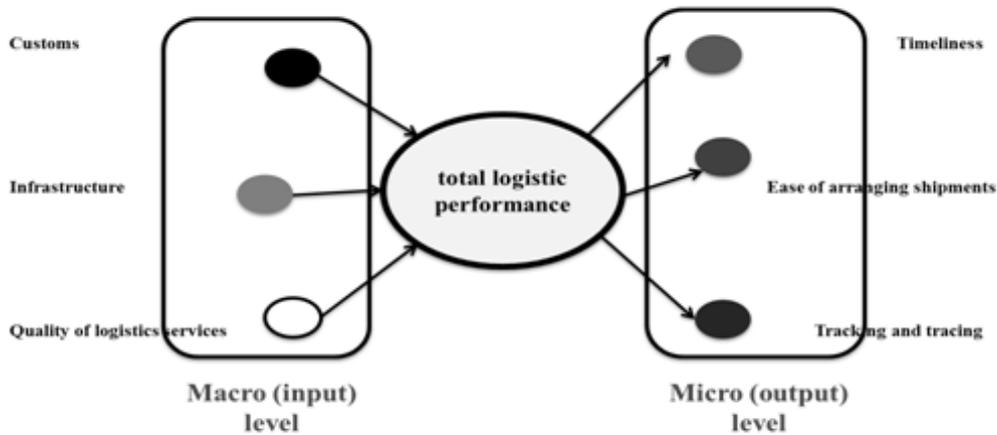


Figure 1 Basic components of the LPI

Source: Arvis, J., Mustra, M., Ojala, L., Shepard, B. and D. Saslavsky (2014).

As can be seen in Figure 1, six key LPI components can be divided into two main level groups:

- The macro areas which can be improved by changing regulations and procedures, that include the main supply chain inputs: customs, infrastructure and quality of logistics services;
- The micro areas which include timeliness, ease of arranging shipments and shipment tracking and tracing.

The LPI uses the standard statistical techniques to convert the gathered data into a unique indicator which can be used for comparing countries, regions and groups formed based on the level of income. Approximately 1.000 professionals from 125 countries have participated in LPI research carried out at the end of 2013, with the results presented in the forth issue of the World bank report on logistics performance entitled *Connecting to Compete 2014: Trade Logistics in the Global Economy, The Logistics Performance Index and Its Indicators* (Arvis et al, 2014).

The LPI represents an excellent indicator of logistics performance of the host country of Foreign direct investments (FDI) and an ideal benchmarking tool while choosing a location for different business activities. This is one of th main reasons why the states have focused on their LPI rank rather than on precise improvements of their logistics performance. As a part of their strategic development plan, some countries have even published a targeted height of LPI value and LPI rank. In order to improve their attractiveness, countries have focused on projects in numerous areas which could improve their LPI position (Ojala, Queiroz 2004).

However, it can not be said that this is the correct attitude. Namely, the quality of logistics performance of a country is much better described by its result compared to other states, than the very rank on the World Bank list. Countries which have a similar level of performance can have significantly value ranks of LPI, which is particularly expressed with countries of middle or low income (Daugherty, 2011).

The LPI gap which appears when the actual country LPI rank is different from the expected rank based on the level of its income, also stresses the connectedness between logistics performance, trade and FDI. Those countries which do manage logistics efficiently and effectively have bigger advantages from globalization (Leenders and Johnson, 2000). Countries which achieve a higher level of logistics performance, more often have better integrated global value chains and more easily attract the export-oriented FDI (Monczka et al., 2006). Bearing in mind that trade and FDI are the key channels for international knowledge spreading, a badly developed logistics sector can interrupt the country approach to new technologies and know-how and thus contribute to slowing down the growth of economy productivity (Hannon, 2009). Opposite to that, the trade growth creates increased demand for efficient logistics, obliging the creators of economics policy to approach the reform effectuation in order to facilitate the trade business (Daniels et al., 2002).

Countries which are highly positioned on the LPI list, also tend to have a much diversified export. Countries which record an increase in trade, generally have a higher LPI rank compared to the expected one. For example, a country with a positive LPI gap of 0,5 experiences 2 percent more of commerce spreading, 1 percent more of annual growth or 40 percent more of varied export than some other country which has the same level of income. The supply chain improvements significantly contribute to the competitiveness by reducing the transaction costs (Oliver and Weber, 1982). At the same time, the diversified economy tends to improve its logistics performance (Axelsson and Wynstra, 2002). Countries which tend to achieve more gain from globalization, must identify the key aspects of logistics performance, especially in the sense of their influence onto the competitiveness (Murphey et al., 1993).

3. THE METHODOLOGY SETTING FOR LPI MEASUREMENT

The first part of the LPI survey offers information which represents the basis for calculating the international LPI. Every survey participant marks the six most important components of logistics performance onto eight foreign markets. Countries which have their logistics performance graded, are the most important trade partner countries (export/import) for the country where the survey participant is located, while the very country selection is by chance.

For countries which do not have the access to the sea, the selection of eight most important countries is based on neighbor countries which for the country where the survey participant is located represent some sort of bridge connecting it with international markets. The precise method of choosing the group of most important countries is different from country to country and depends on the very characteristics of the state where the respondent is dwelling (Arvis *et al.*, 2014).

Grading the logistics performance of selected countries is performed by filling out an on-line questionnaire. The very mechanism of filling out the survey and summing up the obtained data has not changed a lot since the first report on values of LPI. The report from 2012 has brought about one significant novelty, and that is the introduction of the USR approach. The survey has been devised in such a manner that it mostly relies on specialized methodology of choosing the participant countries based on a large volume of trade among countries. The USR approach enables countries with smaller trade volume to find themselves on top while making a selection.

Based on the rules valid while choosing the survey participants, and which are presented in T Table 1, the on-line survey mechanism forms a group of countries for every participant individually. After 200 surveys, the USR approach is included into the process of country selection. For every new participant, the USR seeks the answer of the country which has been

chosen by chance, but with a weighted probability, while the weights are used in order for the sampling to evaluate towards a unique probability. Precisely, the country is chosen with the probability of $(N-n_i)/2N$, where n_i stands for sample of state size, while N is the size of the total sample.

Table 1 Methodology of country group selection for the participants of LPI survey

	Participants from country group with low income	Participants from country group with middle income	Participants from country group with high income
Participants from countries which have access to the sea	Five most important countries-export partners + Three most important general partner countries	Three most important countries-export partners + The most important country-import partner + Four freely chosen countries, one from each area group: a) Africa b) Eastern and Central Asia c) Latin America d) OECD and Europe	Two randomly chosen countries from the list of five countries-most important export partners + Four freely chosen countries, one from each area group: a) Africa b) Eastern and Central Asia c) Latin America d) OECD and Europe + Two randomly chosen countries from the combined groups of countries a,b,c and d
Participants from countries which do not have access to the sea	Four most important countries-export partners + Two most important countries-import partners + Two bordering countries	Three most important countries-export partners + The most important general partner country + Two bordering countries + Two freely chosen countries, one from each area group: a) Africa b) Eastern and Central Asia c) Latin America d) OECD and Europe	

Source: Arvis, J., Mustra, M., Ojala, L., Shepard, B. and D. Saslavsky (2014).

While calculating the LPI, a method called the Analysis of main components-PCA is used, in order to reduce the data dimension. While calculating the LPI, the input data for the PCA are the answers obtained for 10 to 15 questions, i.e. the mean of all obtained answers on questions on logistics performance of a certain, chosen country. The weight factors are presented within Table 2.

In order to obtain a comparable value of the international LPI, a normalized result of every of the six original indicators is multiplied by the weight factors, and then those values are added. The weight factors represent weight values of basic components of logistics performance which participate in the calculation of the international LPI.

Bearing in mind that the weight factors are similar for all six indicators, the international LPI is roughly close to the average value of the original indicators. That is the reason why there is

such a high degree of comparability of the obtained results in all four issues of the report on LPI values.

Table 2 Weight factors of international LPI

Component	Weight
Customs	0.40
Infrastructure	0.42
Ease of arranging shipments	0.40
Quality of logistics services	0.42
Tracking and tracing	0.41
Timeliness	0.40

Source: Arvis, J., Mustra, M., Ojala, L., Shepard, B. and D. Saslavsky 2014

4. THE LATEST LPI RESULTS FOR SERBIA

Since the issue of the first report of the World Bank on logistics performance, Serbia is its part. Unfortunately, although the professionals from Serbia regularly participate in the survey carried out by the World Bank for the needs of this report, it cannot be said that the expert public in Serbia pays adequate attention to the data contained within them.

Within the first report, Serbia was ranked at the 115th place, with the value of LPI index of 2.28. In the following issues, Serbia has improved its logistics performance, i.e. it has recorded bigger and bigger value of LPI and a higher LPI rank. The results of the latest LPI from 2014 are shown in Table 3.

Table 3 LPI results for the region and Serbia for 2014

Country	Total LPI rank (out of 160 countries)	Total LPI score (from 1 to 5)	% compared to the best ranked in the world (Germany)	LPI score for customs	LPI score for infrastructure	LPI score for ease of arranging shipments	LPI score for quality of logistic services	LPI score for tracking and tracing	LPI score for timeliness	Change of position compared to 2012
Hungary	33	3.46	78.9	2.97	3.18	3.40	3.33	3.82	4.06	40 ↑
Slovenia	38	3.38	76.3	3.11	3.35	3.05	3.51	3.51	3.82	34 ↓
Romania	40	3.26	72.4	2.83	2.77	3.32	3.20	3.39	4.00	54 ↑
Bulgaria	47	3.16	69.1	2.75	2.94	3.31	3.00	2.88	4.04	36 ↓
Croatia	55	3.05	65.8	2.95	2.92	2.98	3.00	3.11	3.37	42 ↓
Serbia	63	2.96	62.9	2.37	2.73	3.12	3.02	2.94	3.55	75 ↑
Montenegro	67	2.88	60.1	2.83	2.84	3.15	2.45	2.76	3.19	120 ↑
B&H	81	2.75	56.0	2.41	2.55	2.78	2.73	2.55	3.44	55 ↓
Macedonia	117	2.50	48.0	2.35	2.50	2.38	2.51	2.46	2.81	99 ↓

Source: Arvis, J., Mustra, M., Ojala, L., Shepard, B. and D. Saslavsky (2014).

As can be seen from the previous table, Serbia has achieved the best results compared to other regional countries which are not the members of the EU. On the other hand, Serbian logistics

performance are much weaker compared to regional countries which are a part of the EU. Bearing in mind the excellent geographic position, it can be concluded that Serbia is not using well enough its advantages, although the result from 2014 is much better compared to 2007, when Serbia was positioned as on the 115th place of the LPI rank list. It is obvious that the logistics system is being reformed, but unfortunately, in quite a slow and insufficient manner.

The thing that worries the most is the pace of reforms which is too slow in the segment of customs activities. As can be seen in Table 3, in the part dealing with customs business, procedures and regulations, Serbia is positioned on the 113th place, which is a downfall compared to previous report of up to 20 positions. Impartially seen, the reform of the customs business is something which needs huge money investments. That is a hard and complex task, but up to now, Serbia has not had enough will, desire nor the financial funds to carry out that task to the end.

5. CONCLUSION

The analysis within the paper has shown that the logistics management and its accompanying activities do have a multiple effect. On one hand, that effect can be seen on a micro level, i.e. the level of individual companies and company groups, as part of a wider supply chain, and on the other hand, on the macro level, as well.

The macro level impact is directly visible via various indices which use the most important logistics elements (for example, infrastructure, customs procedures, procurement etc.) in the process of their creation. The basic focus of the carried out analysis is on a specific index- LPI.

The effectuated research has shown that LPI, which has two forms (the domestic and the international one) is used to grade a country based on a score given for the performance of its 6 main logistic components later comprised in an index. The research has also indicated that even though this index is measured for Serbia and its score is getting better, there are no direct improvements based on the grades of the components. Within the following period, a serious government initiative is needed in order to use the LPI measurements as a good benchmark to improve the "bottle neck" areas and increase the quality level of total logistic performance of our country and all its entities. In that manner, in due course, the general competitiveness of the Serbian economy shall also improve.

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THE TRENDS IN HOUSEHOLD SAVING IN POLAND

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***Abstract:** On the basis of economic theories it is proved that saving play significant role in economic growth. That is the reason for governments interest in them. The article presents the state of saving in Poland against the situation in the European Union and the Euro area. The conclusion is that although saving in Poland is correlated with saving in the EU its growth rate and structure should be improved. It is acknowledged by the Polish government as stated in long-term development strategies.*

***Keywords:** Saving, Financial Assets, Household Finance*

***JEL Classification:** E 21, O 16,*

1. INTRODUCTION

In 2010 the European Committee adopted the document 'Europe 2020. A strategy for smart, sustainable and inclusive growth'. In this document there were implemented several objectives the main aim of which was to help the European Union in fighting the existing economic crisis. In order to ensure that these objectives will be achieved the EU - as a whole and every country separately - established a set of indicators. The indicators are in five areas: supporting employment growth, raising funds invested in the Research and Development sector, fighting against climate change and ensuring energy sustainability, improving a level of education and fighting poverty as well as social exclusion (Europe 2020). At least two out of five areas of activity require a stable financial system and access to long term secure funding. As many economists admit the best funding for long term development are domestic saving with household saving in particular. Therefore, the aim of this paper is to present the state of household saving in Poland against situation in the EU and the Euro area. It is hypothesised that Polish household saving is too small to ensure stable development for the Polish economy and its structure as well as other characteristics allow to state that it is not a secure and stable factor in Poland.

2. LITERATURE REVIEW

According to the Harrod-Domar model, to accomplish economic growth, there are two factors required: labour and capital. Capital is essential for investments and simultaneously the growth in investment leads to capital accumulation. The model assumes that economic growth depends on the policy of increasing investment throughout saving acceleration.

The explication of this growth model was the research published in 1956 by R. Solow. In his traditional growth model there is such an amount of capital per one employed in which the economy is determined as the one of a steady state. The labour and capital can grow to the same extent which leads to steady economic growth. The capital growth results from the growth in saving. The same goes for the 'new growth models' of Romer (1987) and other researchers. They claim that higher saving brings about a higher rate of growth (Carroll Ch.D, Weil D.N. 1994).

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As it is proved on many occasions by the principles of both classic economics and the works of J.M.Keynes in stable economy saving is equal to investment and consists of private part and public one. The most stable and almost always positive is private saving mainly this one of households.

Recognising the importance of saving for economic growth, the Polish government incorporated accelerating of household saving into different programmes and long-term strategies of development. The two most important are *StrategiaRozwojuKraju 2020* (Country Development Strategy 2020) and *Polska 2030* (Long-term Country Development Strategy 2030). In the first one there is the area No 2 distinguished - ‘Competitive economy’. Its realisation is divided into several goals, one of which is No II.1 ‘Strengthening macroeconomic stability’ and part of this is ‘Increasing the rate of saving and investment’. The *Polska 2030* strategy goes even further because in order to achieve its goals some indicators and their minimal expected values are fixed. And in the area of improving the competitiveness and innovation of Polish economy there are two indicators related to saving. The Polish government declares that up to the year 2030 the gross saving rate (as a % of GDP) will strive up to 22% and the ratio of active accounts in the third pillar of the pension system in relation to the number of people employed will strike from 3.3% in 2010 to at least 50% in 2030.

3. METHODOLOGY

In order to accomplish the aim of this paper a set of data was collected and analysed. They were provided from the databases of OECD, Eurostat and GUS (the Polish Central Statistical Office). The situation of the Polish economy is compared to economies of other EU countries or the average values for the EU economy. Additionally, the simple statistics are being used. The research period for the data collected covers the years 2000-2014.

4. RESULTS AND DISCUSSION

In the years 2003-2013 GDP in Poland raised from 845.9 bln PLN (192.3 bln EUR) to 1 656.3 bln PLN (394.6 bln EUR). Its dynamics in constant prices fluctuated from 103.6% to 101.3% coming up to its maximum in 2007 that is to the level of 107%. At the same time a gross saving rate in relation to GDP varied from 14.4% to 18.3% whit is highest values in 2004, 2007 and 2011 as presented in Figure 1. Furthermore, since 2008 one can observe a declining trend in consumption growth whose dynamics in the years 2012-2013 was lower than 1%.

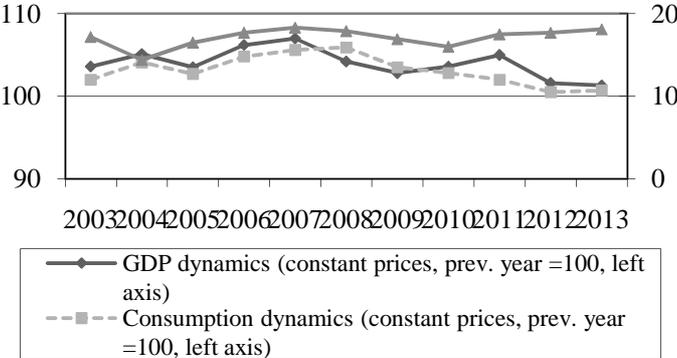


Figure 1: GDP dynamics and gross saving rate in relation to GDP in Poland

Source: www.stat.gov.pl (STRATEG)

However, as the main part of saving comes from households, the saving rate depends not only on GDP but primarily on disposable income. Therefore, the gross investment and gross saving rates of households would be worth analysing.

The paper aims to compare these rates both for Poland, the EU and the Euro area. The research findings are presented in Figures 2 and 3. It is clear that there is a downturn in household gross saving rate in all these three investigated areas. From 2004 to 2008 it was systematically decreasing to go up in 2009, just after the crisis outbreak, and then again went down slowly. The Polish gross household saving rate is approximately half the size of the EU one. Its decrease in the years 2004-2009 cannot be accounted for the negative changes in disposable income as this was going up by 1.24% in 2005, and then between 4.47% and 5.79% in the years 2006-2009.

The linear trend for Poland can be presented with the following equation:

$$Y = - 0.4773X + 6.8482; R^2 = 0.7267$$

where : Y – gross household saving rate,
X – time.

For the European Union the equation is:

$$Y = - 0.0789X + 11,743; R^2 = 0.1228,$$

and for the Euro area it is:

$$Y = - 0.147X + 14.08; R^2 = 0.444$$

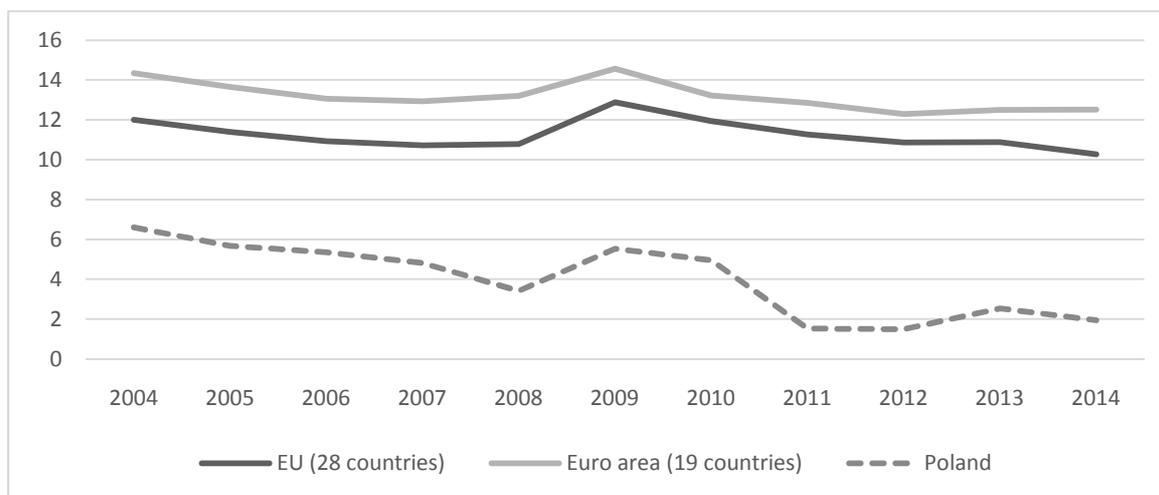


Figure 2 The gross saving rate of households (including Non-Profit Institutions Serving Households, in relation to gross disposable income)

Source: own calculations on the basis of Eurostat data, <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tsdec240>, access 19.09.2016.

In addition, the Pearson correlation coefficients were calculated for such pairs as: Poland and the EU, Poland and the Euro area. Their values were 0.708381 and 0.650943 respectively, which means that there is a strong positive reliance between gross household saving in Poland and the EU.

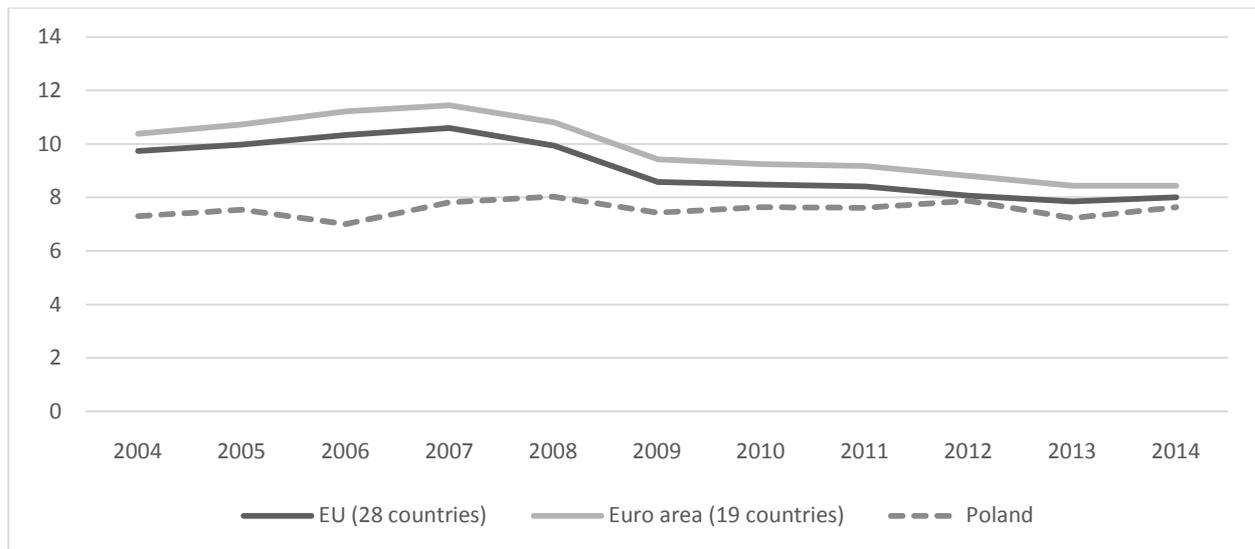


Figure 3 The gross investment rate of households (including Non-Profit Institutions Serving Households, in relation to gross disposable income)

Source: own calculations on the basis of Eurostat data,

<http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tec00098>, access 19.09.2016.

In turn, the linear trend for households gross investment rate in Poland is growing contrary to its equivalents in the EU and in the Euro area. Their equations are as follows:

$$Y = 0.0203X + 7.4329; R^2 = 0.0497 \text{ (Poland),}$$

$$Y = -0.02709X + 10.714; R^2 = 0.7618 \text{ (the EU),}$$

$$Y = -0.2932X + 11.585; R^2 = 0.7582 \text{ (the Euro area).}$$

The Pearson correlation coefficient for this rate for Poland and the EU is slightly negative and accounts for - 0.02991, while for Poland and the Euro area it is - 0.01115.

The data presented above indicate that household saving in the EU was decreasing in relation to household disposable income which can be viewed as a negative forecast for the future economic growth. The same holds true for households investments in the EU and in the Euro area. Yet, for Polish households their investment rate is raising marginally.

An essential part of the household saving are households financial assets. Table 1 presents the dynamics of their growth in Poland, and Figure 4 presents their structure in the years 2003-2015. As presented, in this period there was only one year when these assets lost in their value. In 2008 there was a drop by 8.67% in comparison to 2007.

The main component of household financial assets in Poland are currency and deposits in banks as well as parabanks. According to the Polish Central Bank statistics, about half of household deposits are current or short-term ones. The next component are shares and other equities and other one are pension funds (Figure 4). A significant fall in the share of the least ones in 2014 was brought about by the reform in which some part of their funds were transferred from OFEs (Open Pension Funds) to ZUS (the Social Security Institution). According to Eurostat database in 2012 in the EU (28 countries) and in the Euro area (18 countries) in 2012 the share of currency and deposits in household financial assets was 33.7% and 35.8% respectively, while shares and other equities - 21.46% and 22.81%.

Table 1 The dynamics of household financial assets in Poland

Period	Dynamics of household financial assets (previous year = 100)
2004	110.70
2005	114.09
2006	116.25
2007	116.87
2008	91.37
2009	114.56
2010	111.52
2011	103.16
2012	115.06
2013	111.56
2014	105.77
2015	105.25

Source: own calculations on the basis of: OECD 2016?

In contrast to countries with higher developed financial markets, such as Germany or the United Kingdom, Polish households seem less interested in using insurance instruments as means to locate their assets. Taking into consideration the EU it can be stated that insurance instruments take the biggest part in household financial assets. By Eurostat their share was more than 36.8% in 2012. At the same time this percentage for the Euro area was 31.74% and it was lower than currency and deposits only.

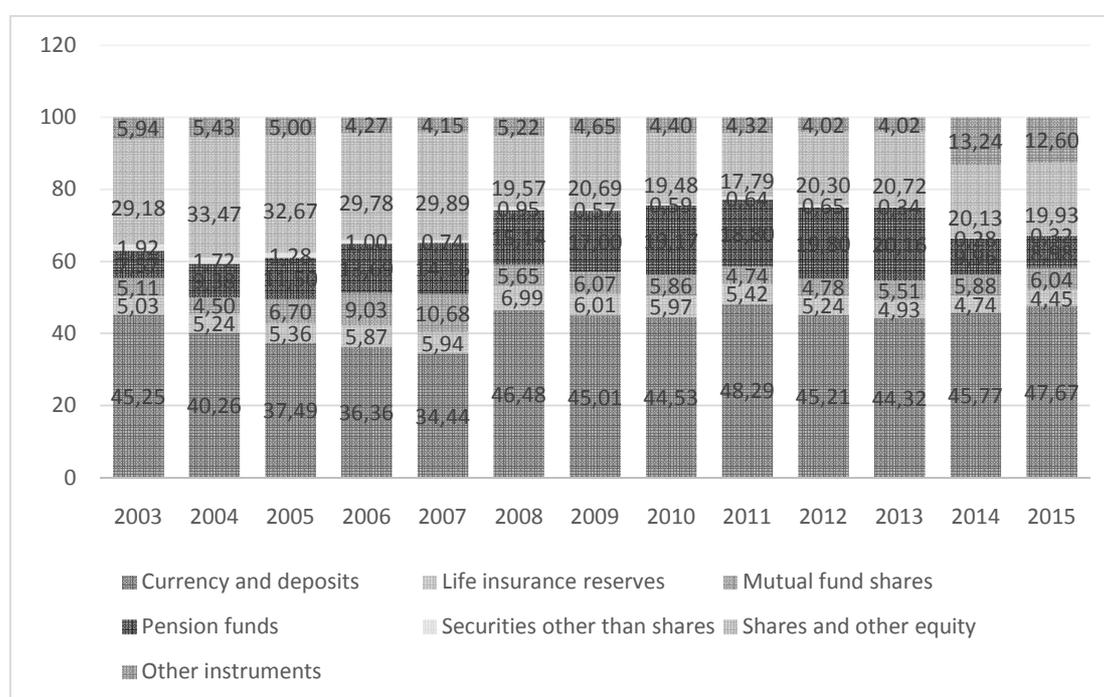


Figure 4 The structure of household financial assets in Poland

Source: own calculations on the basis of: OECD 2016

Similarly, there is a noticeably low share of securities in household portfolios in Poland amounting to less than 1%, whereas in 2012 in the EU it was 5.07% and in the Euro area 6.6%.

5. CONCLUSION

The research presented above implies that Polish household saving rises faster than GDP, therefore, it can be a reliable factor of economic growth. More so, its rise trend allows to assume that the goal intended by the Polish government (22% in the year 2030) can be achieved. Although, if saving in relation to disposable income are researched, one can observe that saving rate is lowering and its trend is positively correlated with the situation in the EU as well as in the Euro area. Fortunately, for the Polish economy the household investment trend is positive in opposition to the European area.

But primarily, the structure of household saving should be taken into consideration. Actually, the short-term financial assets hold prevailing share in household portfolio. This is not a positive development given that these assets should be used as a source of financing long-term investment activities. Taking into account the impact of long-term saving on economy, the Polish government is in need to prepare and implement programs and solutions to change the private saving structure. Some of them are actually in realization such as: tax relieves or extending the offer of treasury bond to make them more attractive for the owners of IKE and IKZE accounts². Although, according to the data published by the Polish Financial Supervising Authority only about a quarter of IKZE accounts and about half of IKEs are active ones.

In view of the recent crisis and the resulting further problems in the financial markets the trust of households in financial institutions is lower than trust in business (Korzeniowska A., 2015). That and the trends presented above impose improving the promotion of saving in financial institution through education and information.

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² IKE (The Individual Pension Scheme), IKZE (Individual Account Pension Security Scheme) and PPE (Voluntary Occupational Pension Plans) are the examples of The Third Pillar of the Polish Pension System. IKE and IKZE can be run in a form of a saving account, a mutual fund account, an insurance policy or a security account.

GERMAN ECONOMIC MODEL - ITS INTELLECTUAL ORIGINS AND CONTEMPORARY CHARACTERISTICS

Vladan Ivanović¹

***Abstract:** Since of the outbreak of the financial crisis, the importance and influence of German economy, both because of its distinctive economic performances and its influence on the other EU national economies, especially members of EMU, became particularly evident. We are highlighting the essential characteristics contributing to specific efficiency of German economy. It will be done both analysing its theoretical foundations dating back in period between two World wars and after Second World War, as well as contemporary evidence on economic policy. It should contribute to better understanding of the place and importance of German economy in global world as well as its implications on other European national economies - accessing or already part of E(M)U.*

***Keywords:** Social Market Economy, Germany, Economic Policy, Institutions*

1. INTRODUCTION

It was fewer examples in history with such an extraordinary economic performance as it was the case with the German after World War II (WWII). Figures regarding the economic growth, counting for real average growth rates of 8.2 % during the 1950s (Hagemann, 2013, 37) as well as quickly reached full employment inspite of more then 12 million of refugees (Tietmeyer, 1999, 24), are illustrating remarkably the outstanding economic outcome known as *Wirtschaftswunder* (economic miracle). An important part of explanation lies in its specific institutional structure built right after the WWII ended. Namely, after the more than the decade of extensive state presence in economy and broad regulation of almost every aspect of economic life during the reign of National Socialists, the foundations of liberal market economy were established and democratic political system were introduced. This political and economic institutions facilitated not only the economic performance, then also made the system more resistant to the shocks and uncertainties coming from the external environment.

There are several reasons why is understanding the German economy important for the Serbia as well as other European countries, especially those which were almost a half of the century under socialist economic and political order. First, the long-run results of German economic system as well as its proven sustainability could be an useful benchmark and the source of finding solutions for the many other former socialist countries with the chronic problems within their economies. Second, this solutions are even more interesting, bearing in mind the German economy was functioning in highly centralised economic and political system prior to the reforms introduced after WWII. In some degree there are similarities between institutional legacies of Germany and other former socialist countries. Third, the fundamental features of institutional structure in EU and EMU are closely related or even inspired by those in Germany. This is the most obvious in the domain of European Central Bank (ECB) and its strong institutional independency. It has very important implications for the process of European integration as well as the proces of functioning within the single European market. And forth, for the large number of former socialist countries Germany is an important export as well as import market. In the case of close economic tights between different countries or

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regions, the economic results will be maximized and more balanced when strong complementarity in institutional framework exists. So, knowing the origins of German economy and the characteristics of contemporary economic order could bring useful solutions for the further institutional transformation and existing deficiencies within the majority of former socialist countries.

The paper is organized as follows. First part covers theoretical origins of German economic model after WWII and main ideas coming from so called Social Market Economy (SME). The second part addresses the characteristics of contemporary economic policy from a specific perspective. It analyses the academic background and research interests of key expert figure in Ministry of Finance (*Finanzministerium*) and German Council of Experts (*Sachverständigenrat*) staff academic research profiles. The both institutions are having the strong influences on strategic decisions made in the domain of economic policy as well as present direction of economic policy. In concluding section, we summarize main findings and point out a strong intellectual connection between contemporary economic policy and its main ideas after the WWII.

2. INTELLECTUAL ANCESTRY OF GERMAN ECONOMIC MODEL

Already with the outbreak of Great Depression in 1930s and disturbing political changes, the group of German economists was starting to outline the main ideas on which the system should be built in order to escape sharp decline (in case of Germany there were several crisis episodes already during the 1920s) and which would be able to offer sustainable solutions for deep economic and social crunch. Ruling economic thought embodied predominantly in historical school was not capable to make needed proposals. Economic disaster and disorder paved the way to the political one in 1933. On the other side, a group of academics started the work on the new model which entered into the force after the WWII was finished. The main representatives of this school of thought, later known as fathers of SME, refer to Walter Eucken, Alfred Müller-Armack, Alexander Rüstow, Franz Böhm, Ludwig Erhard and Wilhelm Röpke. Although the circle of persons is much more comprehensive, the academic work of all of them and, later after the WWII was finished, active role in political life and strategic decision making regarding the way German economic system and its main institutions should look like, are the key points in understanding the fundamentals of economic system established in West Germany. The specificity of this system lies in the fact that the role of government was pushed back not only compared with the regulation during the war time, then also compared to previous peace-time period of 1930s. There is almost no such example recorded in history, with the exception of Italy, but with the much bigger presence of government in economy (Huchinson, 1979, 431).

The core idea within SME refers to the requirement that one system, in order to achieve efficiency, have to be shaped according to the constitutive principles (Figure 1). The institutional structure has to embody all of this principles inseparably, because every deviation from it will prevent the smooth and efficient operation of market economy. But if it would happen, it would produce divergences from efficient path simply because all of them are interdependent and the absence of fulfilment in one aspect will eventually lead to distortions in others.

The productive behaviour of economic agents is dependant on every single principle in numerous ways. But the full efficiency of economy and thus the main precondition of achieving it is competitive market structure. All of the principles should warranty the highest

possible freedom in meeting decisions by market participants and in the same time protect every economic agent from predatory behaviour of other agents or the state.

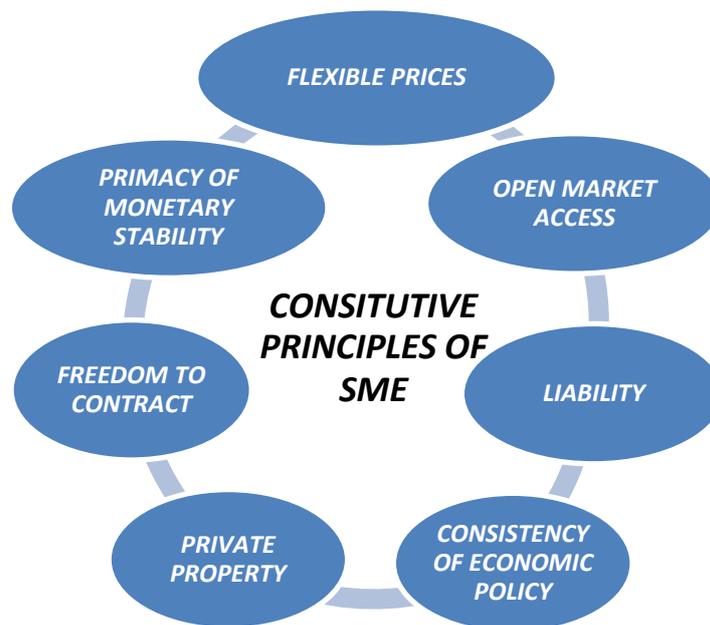


Figure 1 Constitutive principles of SME

Source: Ivanović, 2015, 9-10

In order to achieve freedom of economic transactions, every decision has to be bound over liability, i.e. economic agents have to be fully responsible for their decisions and completely carry over the consequences of them. The socialisation and externalisation is not allowed. Only undivided relationship between freedom and responsibility are incentivising productive behaviour and restraining irresponsible one (Schleussner, 1953, 79-80). Efficient transacting is taking a place on market where the prices are free and stable with open markets and within private property regime. When this preconditions are met and under the preservation of accountable and consistent economic policy and warranted free choice of contracting parties, economy will be on its production-possibility frontier.

On the other hand, free operation of the market forces inevitably leads to unwanted outcomes in economic order as well as in other social suborders. From that reason is demanded a corrective role of state. But it has to follow strictly a set of the regulative principles. They refer on broad range of policies in three domains: social policy, state regulation of market structures and structural policies (Ivanovic, 2016, 77). Particularly, Eucken divided regulative principles in four broad categories: regulation of monopolies, accountability, income distribution and erratic shifts in supply (e.g. Eucken, 1952, 291-304). The social policy issues took a large part of academic debate (Rüstow, 1956; Briefs, 1957; Erhard, 1961; Nawroth, 1961). The function of regulative principles is to neutralise negative consequences of free market, but also to make constitutive principles sustainable in the long run. The need for regulative principles is motivated by the fact that there is a strong dependancy not only between different parts of economic order then also between economic and all other „life orders“ (Eucken, 1952, 14). If a free market economy produces negative effects, e.g. in social sphaera by rising inequality, it will eventual undermine itself. The conjunction between constitutive and regulative principles is based on scientific-objective insights into material

economic nexuses (Reuter, 2010, 76) and not derived from abstract theoretical ideals or models.

3. CONTEMPORARY CHARACTERISTICS OF GERMAN ECONOMIC ORDER - MINISTRY OF FINANCE AND „WEISER RAT“

In this part we try to address the main academic ideas and research interests of those persons importantly influencing strategic decisions regarding German economic system. Although it encompasses a broad range of people, in our approach it is related to the key economic expert in Ministry of Finance (MF) as well as the members of Council of Experts (CoE). We try to access through that not only the specificity of leading contemporary economic ideas than also the range of continuity between its present day character and features of its origins right after WWII.

We elaborate the academic profile of the key expert figure in MF, not aiming to analyse the position of Finance Minister - Wolfgang Schäuble, although it would perfectly match with the story of early days of West Germany. Coming from conservative and thrifty province of Baden-Württemberg, his leadership perfectly reflects the strong continuity, adjusted for the political role, with the ideas of SME. He alone was the student of Freiburger professor Fritz Rittner, finding himself under the strong influence of the ideas of *Ordoliberalismus*, but also liberal intellectuals such as Friedrich von Hayek. Much more interesting and to the subject of this paper is the work of Ludgar Schucknet, main economist in MF and one of the few in MF with economic background. Namely, majority of the staff are layers pronouncing indirectly the importance and dominance of „rule“ based character of economic policy and subordinated role of discretionary policy (Schieritz, 2015).

One of Schucknet's latest works addresses an influence of large financial investors on inflation and requires their strong monitoring (*Gattini et al*, 2012, 23), which is directly in line with core ideas within SME, i.e. functional system of relative prices and regulation of monopolies. Further, in analysing problems with the fiscal domain in EMU area, he points out on the key challenges of fiscal policies and proposes more concentration and coordination on supra-national level of fiscal policy. On the other hand, responsibility for financial obligations as well as decisions about composition of expenditures have to remain on national level (*Schucknecht et al*, 2011, 17). The look on the austerity of fiscal policies is also clear: the role of ambitious public expenditures retrenchment tends to lead to improvements in fiscal and growth prospects of national economies (*Hauptmeier et al*, 2007). In case of supersized budgets and high public debts it is the first best solution which preserves the fundamentals of market economy.

The members of CoE are also following very closely the line of reasoning and the main ideas of SME. CoE was formally established in 1963. Its main goals are to facilitate the process of decision making within all public entities as well as to inform public about the issues important for quality and sustainability of German economy (*Über uns/Aufgaben und Organisation*, 2016). The link with intellectual origins of SME is twofold. First, the main ideas of SME were under the strong influence of Catholic social teaching, especially those of O.v. Nell-Breuning. He looked on the idea of CoE as an important tool for objectification of economic policy (Nell-Breuning, 1963). The part of political elite, especially chancellor Konrad Adenauer, was, on the other hand, very sceptical about its role, but not the key figure in economic issues and one of the founders of SME - L. Erhard (*Tietmeyer*, 2011). Second, the high academic profile of the protagonists of SME and CoE as well as high visibility and influence in public are additional common feature. The current members of CoE are

Christoph M. Schmidt, Peter Bofinger, Lars P. Feld, Isabel Schnabel and V. Wieland. The look on their academic work contributes to an understanding of the characteristics of contemporary economic policy, at least the strategic dimensions of it.

Stability of legal framework is understood as a cornerstone of economic and social order by all members of CoE. The importance of strong and independent judiciary is, *in concreto*, crucial for economic growth (Voigt et al 2015, Feld and Voigt, 2003), which is closely related to property rights protection, efficient contracting and minimizing transaction costs as well as to the key institutional pillar within SME - private property.

The urgent issues were and are shaping the direction of academic debate in the past and in present days. Namely, as it was the case with social policy within SME, the problems of public debt and imbalances in public finances are dominantly determining the academic debate within CoE. Rule based fiscal policy with strong orientation on stability and balanced expenditures should contribute escaping the risks of government default (Bofinger, 2010). It does not exclude the need for smaller countries to have more „room“ for fiscal policy which should enable them to cope with the risks of external shocks (Bofinger, 2002). Sound fiscal positions are the best warranted within the appropriate decentralised institutional infrastructure (Feld, 2016), which better promotes the sustainability of public finances (Feld, 2015). In context of current euro crisis, the Keynesian multiplier is also questioned (Cwik and Wieland, 2011), returning the focal point to the constitutive principles and *Ordnung* as an solution for the economic problems in euro area countries.

Although the regulatory work of of monetary authorities is crucial in combating „financial bubbles“, there are also the risks of state capturing on the part of financial sector (Hanekes and Schnabel, 2014a) as well as potentially incentive wrecking impact of regulation (Hanekes and Schnabel, 2014b).

The risks of further centralisation in EU, the lack of democratic legitimacy as well as the problems of enforcement of more centralised rules are pointed out (Dullien *et al.*, 2015), implying evolutive and cautious approach to firmer institutional transformation and centralisation in the EU.

The concentration on acute problems of economic policy in the EU as a whole and in member states particularly made some other issues less pronounced, but not completely. The EU structure is even observed by some members of CoE (see more: Boefinger, 2016) as a framework for solving the social issues. Thus, the importance of EU as a community overreaches simply economic character of it and it is in line with the views within SME (see further: Müller-Armack, 1966).

4. CONSLUSION

Two main conclusions could be made. There are strong correspondences between after WWII and contemporary economic ideas in Germany. In a way in which the social question played an important role in after war period, the fiscal policy in after-crisis period plays the role in work of members of CoE today. Both past and present ideas pronounce the importance of positive and less normative approach to analysis, although there are strong consistency in normative positions between observed academicians and periods.

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THE IMPACT OF PUBLIC SECTOR ON FUNCTIONING CONDITIONS OF SMES IN SELECTED COUNTRIES OF THE EU

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Abstract: *The purpose of this paper is to show to what extent the state interference in the economy affects the conditions of functioning for small and medium-sized enterprises in selected EU countries. Countries selected for the analysis are economies of the former Eastern bloc which have already gone through the accession process. The data on SMEs' situation were taken from the Fact Sheets of the EU program Small Business Act. Due to the fact that the variables proposed to describe the business environment differ significantly it was necessary to standardize them. The zero unitarization method was applied to rank countries correctly. Special attention in this paper is devoted to Poland and the situation of businesses operating in this country. The research has identified some areas requiring urgent changes. It is crucial to improve the situation so that companies could play its role in the economy. It has also been marked out which country could be an example of good solutions that support business development.*

Keywords: *SMEs, Small Business Act, formemr Eastern Bloc*

JEL Classification: *L26, O57, P20*

1. INTRODUCTION

The purpose of this paper is to show to what extent the state interference in the economy affects the conditions of functioning for small and medium-sized enterprises (SMEs) operating in the former Eastern bloc countries, which now belong to the European Union. The SME sector plays a special role in development of individual economies. They are considered to be stimulants for a country's economic situation. Their operation is a sign of fair competition and reflects society's entrepreneurship (Ignatiuk, 2011).

The companies that have been prepared to take opportunities offered by globalization and acceleration of technological change are significant elements for further improvement of competitiveness and dynamic development of the EU economy, allowing creation of new jobs and ensuring a higher level of social cohesion. The ability to exploit the potential of small and medium-sized enterprises will be decisive for the future prosperity of the European Union (European Commission [EC], 2008a).

Because of the important role of the SME sector for the further development of the EU, it was positioned in the center of the Lisbon Strategy for growth and jobs through the use of partnership approach (European Commission, 2005). Diversity of environment in which individual economic entities operate makes it very important to create the right program to support SMEs - program which would take into account the diversity. Thus, in June 2008 the European Commission presented an initiative which would further strengthen sustainable

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growth and competitiveness of SMEs, called the Small Business Act (SBA) for Europe (European Commission, 2008b).

The fundamental assumption of the SBA was an idea that the most important thing to achieve success is to change the perception of entrepreneurs in society. Positive perception of aspects concerning the SMEs functioning, in the form of increased employment and economic prosperity, should encourage people to start a business. It is a pivotal point, crucial for creation of a business friendly environment, that's why the culture of entrepreneurship and the associated willingness to take risk should be supported by political leaders, the media, and the authorities.

The program aims to create a new policy framework, consolidating already operating support instruments for businesses. Its implementation is to take place through the political partnership between the EU and Member States that respects the principles of subsidiarity and proportionality. A comprehensive policy framework is based on 10 principles employed to guide the development and implementation of policies at the EU and Member States level. These principles are essential to contribute added value, ensure equal conditions for SMEs and improve the legal and administrative environment throughout the European Union (European Commission, 2008b).

2. LITERATURE REVIEW

Research shows that due to the fact that former Eastern bloc economies were operating under the ideology of communism and later went through the EU accession process, there may be noticed a number of similarities between them (Czarnecka, 2007).

For this reason many researchers bring up the subject of functioning conditions of entrepreneurship in these countries. The final shape of business environment in each country is tied to historical and cultural issues. This situation led to development of solutions which appeared not to be efficient enough in post-socialist countries (Estrin, Mickiewicz, 2012). The strong attachment of post-socialist countries to the past (path dependency) is referred to in the Douglass North's theory (North, 1990). Other studies confirm that historical burden in these countries enhances tendency towards corruption, which is intensified by weak institutions, bureaucracy and inefficient law (Tonoyan, et. al., 2010). Furthermore, there is a lower acceptance for entrepreneurial activities (Manolova, Eunni, Gyoshev, 2008).

Moreover, it is pointed out in literature on the issue of entrepreneurship in countries of the former Eastern bloc, that the transition economies have lower rates of entrepreneurship than are observed in other economies (Estrin, Mickiewicz, 2010). Some other studies also confirm this state of affairs (McMillan and Woodruff, 2002; Estrin, Meyer and Bychkova, 2006; Aidis and Mickiewicz, 2006). There are also significant differences that occur among the countries. The development of entrepreneurship in a given country corresponds to its level of economic development. Innovation-driven economies have higher institutional and individual level of development than similarly developed efficiency-driven economies (Trumbull, Szerb, 2016). It is important to recognise the reasons for this differentiation.

Literature indicates that a large public sector has a negative impact on the functioning conditions of enterprises, both due to high taxes and high state spending (Henrekson, 2005; Minniti, 2008). High public debt can lead to limitation of funds available to private entities for financing their spending, i.e. the phenomenon of "crowding out" (Markiewicz, Miłaszewicz, 2006). On this basis, it was decided to formulate a hypothesis (H1), that a state's

considerable participation in the economy has a negative effect on the functioning conditions of enterprises.

On the other hand, business support programs carried out by the state have a significant impact on improvement of the functioning conditions and development of enterprises. A study conducted in Argentina showed that the support significantly influenced the level of employment in enterprises, level of wages and profitability of export (Castillo, et. al., 2010). The positive impact of public programs on the level of employment was also noted in Sweden (Norrman, Bager-Sjögren, 2010). The impact of local initiatives, launched by the Enterprise Insight, on the newly formed enterprises and self-employment rates was examined in the Great Britain and turned out to be positive (Botham, 2012). The second hypothesis (H2) assumes that business support programs carried out by the State have a positive effect on functioning conditions of enterprises.

3. METHODOLOGY

As a part of the paper there was an analysis carried out on small and medium-sized enterprises in countries of the former Eastern bloc which are now members of the European Union. Relying on the literature, 11 countries were selected for a detailed analysis of the functioning conditions of enterprises, such as: Bulgaria, Croatia, Czech Republic, Estonia, Lithuania, Latvia, Poland, Romania, Slovakia, Slovenia, Hungary. The countries of the former Eastern bloc also include the states of former Yugoslavia.

The information used in this article come from the Fact Sheets of individual countries on the degree of implementation of the Programme of the Small Business Act in 2015. The advantages of employing this source are: statistical credibility, completeness of contained data, and high comparability. A significant drawback, on the other hand, are emerging delays in publishing parts of information by certain countries or total lack of them.

As a part of the Small Business Act program, different areas concerning the functioning of small and medium-sized enterprises are presented in accordance with its 10 principles. They include:

- Entrepreneurship
- "Second chance"
- "Think small first"
- "Responsive administration"
- State aid and public procurement
- Access to finance
- Single Market
- Skills and innovation
- Environment
- Internationalisation

Because of a large extent of these analyses, aspects presented in the article focus only on flexibility of administration and availability of financing for SMEs. These areas were selected because of their importance for functioning and formation of business entities.

Due to the fact that the variables proposed to describe the business environment differ significantly it was necessary to standardize them. The zero unitarization method was applied

to rank countries correctly. This method is applicable with both quantitative and qualitative variables and its simplicity leads to easy interpretation of gained results. Moreover, this method fulfil three important criteria:

- After normalisation lengths of intervals of variability for all features are the same.
- The lower and upper limits of intervals of variability for all features are the same: [0,1].
- Features which have a zero value can be also normalised (Kukuła, 2012).

In the case of boosters (their growth causes the growth in the level of analysed phenomena) there was used the distance indicator which divides individual countries from the best result (including the EU average). The following formula of standardization is used then in the form:

$$x_{s,K} = \frac{x_K - x_{Kmin}}{x_{Kmax} - x_{Kmin}}$$

where:

$x_{s,K}$ – value of a normalized variable x for a given country,

x_K – value of a raw variable x for a given country,

x_{Kmin} , x_{Kmax} – value of indicator in the weakest and the best country for a variable x.

In the case of inhibitors (if it increases, the value of analysed phenomena decreases) opposite scaling formula for standardizing was applied. It took the form of:

$$x_{s,K} = 1 - \frac{x_K - x_{Kmin}}{x_{Kmax} - x_{Kmin}}$$

By using this type of standardization data can be compared and aggregated. In addition, the diversification of scaling for boosters and inhibitors allow to determine the correct direction and strength of an occurring phenomenon.

Data concerning the participation of state in the economy and business support programs were taken from the Global Entrepreneurship Monitor (Kelley, Singer, Herrington, 2016). Spearman's rank correlation coefficient which is a nonparametric measure of rank correlation, was employed to verify presented hypotheses (Lieberson, 1964).

4. RESULTS AND DISCUSSION

The formation of the SME sector and its impact on the functioning of economies proceed differently in individual countries. Its specificity depends on a level of development and socio-political system achieved by a given state. Even if there is a great similarity of operating conditions, the role of small and medium-sized enterprises will be different, and the degree of development will be differentiated (Ignatiuk, 2011).

When analyzing the proportion of the number of small and medium-sized enterprises in the total number of economic entities it must be made clear that it stood at a similar level in selected countries of the European Union (they accounted for more than 99.5% of all companies in all analyzed economies), so the information was not the subject of deeper inquiry. However, presentation of data concerning participation of people employed in the SME sector in relation to the total number of employees in enterprises and share in the added value of the various types of entities should be given more attention (table 1).

Small and medium-sized enterprises employed from 67% to almost 79% of all company employees in 2015, so this share was significantly different in different countries analyzed.

The smallest percentage in this respect was noticed in Romania, Poland and Croatia (about 68%). Nonetheless, it should be mentioned that it did not differ significantly from the EU average and even surpassed it. The largest number of employed in the SME sector was in Latvia and also where such companies generated high (higher than the EU average) percentage of the added value. This may be due to the almost equal dispersion of employment between the micro, small and medium enterprises. The highest share in the added value area, however, belonged to SMEs operating in Estonia (over 75%). The main asset in favour of such a high level seems to be a large percentage of companies in *the information technology and communication* sector. Moreover, the public sector of this country contributed significantly to the development of innovation.

Table 1 The share of employed in the micro, small and medium enterprises in the total number of employees in enterprises and share in the added value of individual entities in selected EU countries

Country	Micro		Small		Medium - sized		SME	
	Employed	Value added	Employed	Value added	Employed	Value added	Employed	Value added
Poland	35,80%	15,00%	13,90%	13,90%	18,20%	21,60%	67,80%	50,50%
Bulgaria	30,20%	19,30%	23,80%	20,60%	22,10%	22,10%	76,10%	62,00%
Croatia	30,30%	18,70%	19,10%	17,50%	18,10%	19,00%	67,40%	55,20%
Czech Republic	32,60%	19,20%	18,10%	15,30%	18,90%	21,00%	69,60%	55,50%
Estonia	30,90%	25,20%	24,20%	23,70%	23,00%	26,60%	78,00%	75,60%
Lithuania	26,60%	15,40%	25,70%	24,10%	24,30%	29,20%	76,70%	68,50%
Latvia	29,40%	18,60%	25,70%	23,40%	23,60%	26,90%	78,60%	68,80%
Romania	22,20%	13,50%	23,30%	16,10%	21,70%	20,00%	67,20%	49,60%
Slovakia	39,00%	27,10%	15,80%	17,70%	15,90%	16,50%	70,70%	61,20%
Slovenia	35,10%	21,70%	18,20%	19,10%	19,40%	22,30%	72,70%	63,10%
Hungary	34,60%	18,70%	18,60%	16,10%	16,30%	18,80%	69,90%	53,60%
UE-28	29,20%	21,10%	20,40%	18,20%	17,30%	18,50%	66,90%	57,80%

Source: Author's own elaboration based on 2015 SBA Fact Sheets

The lowest added value in relation to SMEs from other countries was created by the sector in Romania. The problems to which attention was drawn primarily were the lack of a national tourism strategy as well as underdeveloped and uncompetitive hotel infrastructure. Low participation in this regard was also presented by small and medium-sized enterprises operating in Poland. It was probably due to a high proportion of people employed in the smallest entities - micro (over 35%), as well as the sectoral structure of enterprises itself (low share of companies in *the business requiring professional expertise*).

Subsequently, the impact of the SME sector, expressed through the percentage of created jobs and created added value, on the economies of selected for the analysis European Union countries, did not differ significantly from the EU average. It should be noted, however, that the situation in northern countries (Lithuania, Latvia and Estonia) was much better than in other countries. They can therefore be a role model for other economies, such as Poland, where the SME sector's share in generated added value is still quite low.

Responsive administration is an important element evaluated in the framework of the Small Business Act which determines the degree of public sector's capacity to respond to the needs of SMEs (table 2). It should be stressed that in this regard the northern countries like Lithuania, Latvia and Estonia perform the best. The authorities in these countries try to create

a friendly business environment. Therefore, different solutions are implemented such as the Latvian single customer service network, which integrates services of seven national institutions, considerably reducing administrative burden. It may be accordingly assumed that creating favourable conditions for the development of the SME sector by the public authorities conduces to subsequent high added value generated by these entities.

Table 2 Responsive Administration in the selected EU countries (normalized data, marking: BG - Bulgaria, PL - Poland, CZ - Czech Republic, EW - Estonia, H - Hungary, HR - Croatia, LV - Latvia, LT - Lithuania, R - Romania, SK - Slovakia, SLO – Slovenia)

Aspects	PL	BG	CZ	EW	H	HR	LV	LT	R	SK	SLO	UE
Time to start a business	1,00	0,67	0,78	0,72	0,89	0,78	0,89	0,67	0,89	0,00	0,79	0,72
Cost of starting a business	0,70	0,90	0,00	0,54	0,40	0,04	0,91	0,66	0,75	0,40	1,00	0,22
Paid-in-minimum capital	0,77	1,00	1,00	0,66	0,00	0,51	1,00	1,00	0,99	0,64	0,18	0,79
Time required to transfer property	0,71	0,93	0,80	0,86	0,87	0,35	0,86	1,00	0,85	0,87	0,00	0,78
Cost required to transfer property	0,94	0,42	0,20	0,92	0,00	0,00	0,60	0,84	0,70	1,00	0,60	0,11
Number of taxpayments per year	0,14	0,50	1,00	0,93	0,64	0,07	0,93	0,64	0,43	0,00	0,64	0,59
Time it takes to pay taxes	0,45	0,00	0,11	1,00	0,47	0,66	0,70	0,75	0,79	0,66	0,52	0,71
Cost of enforcing contracts	0,67	0,45	0,00	0,55	0,89	0,95	0,49	0,46	0,20	0,15	1,00	0,56
Fast-changing legislation and policies are a problem for doing business	0,34	0,45	0,20	1,00	0,09	0,06	0,38	0,57	0,00	0,08	0,25	0,28
The complexity of administrative procedures is a problem for doing business	0,34	0,01	0,22	1,00	0,22	0,10	0,59	0,66	0,00	0,12	0,10	0,28
SMEs interacting online with public authorities	0,74	0,53	0,83	0,89	0,55	0,81	0,80	1,00	0,00	0,80	0,81	0,66
Licenses and permit systems	0,55	0,08	1,00	0,78	0,53	0,00	0,60	0,27	0,15	0,44	0,01	0,34
Burden of government regulations	0,67	0,57	0,81	0,00	0,81	1,00	0,43	0,62	0,52	0,90	0,86	0,51
Sum	8,02	6,50	6,95	9,83	6,36	5,32	9,17	9,14	6,27	6,06	6,77	6,57

Source: Author's own estimations based on 2015 SBA Fact Sheets

It is also worth paying attention to the fact that the indicators calculated for Poland are high as well. We can be proud of a short time necessary for the establishment of an enterprise and low cost of such process. Problems occur in the tax system, especially in a large number of and much time spent on making tax payments. Enterprises also have to face high volatility in legal provisions and state policy, as well as complexity of administrative procedures.

The biggest challenges, however, await the companies that operate in Croatia and Slovakia. The most important issues there are a considerable lack of stability of the law and complicated administrative practices. The high cost of starting own business and time needed for it also seem to be problematic issues.

The analysis of access to financing for SMEs in the selected EU countries was hampered due to the lack of partial data from some of the countries. However, on the basis of the available information, it should be noted that companies operating in Estonia have to struggle with the least problems in this area (table 3). Problems are only caused by high losses from bad debts. Other aspects such as the total time of getting paid or banks' willingness to lend do not cause significant difficulties to economic entities.

There are also no major impediments in the access to financing for small and medium-sized enterprises in Poland. Nonetheless, the area that needs some repair indeed is the amount of venture capital investment in relation to GDP. It should be highlighted though, that this problem exists in most countries, the only exception being previously mentioned Estonia.

The biggest problems in terms of acquiring capital, endure the companies operating in Slovakia. The country has the lowest level of access to public financial support including guarantees, and low willingness of banks to lend. Moreover, the indicator of strength of legal regulations reached the lowest value in relation to the other countries. It is a measure that indicates whether legal provisions protect the rights of lenders and how it affects the ease of access to credit. The higher its value, the easier it is to obtain this form of financing (M. Zalewska, W. Zalewski, 2012).

Table 3 Access to financing for SMEs in the selected EU countries (normalized data, marking: BG - Bulgaria, PL - Poland, CZ - Czech Republic, EW - Estonia, H - Hungary, HR - Croatia, LV - Latvia, LT - Lithuania, R - Romania, SK - Slovakia, SLO – Slovenia)

Aspects	PL	BG	CZ	EW	H	HR	LV	LT	R	SK	SLO	UE
Rejected loan applications and unacceptable loan offers	0,64	0,46	1,00	0,87	0,44	0,68	0,27	0,00	0,65	0,70	0,41	0,72
Access to public financial support including guarantees	0,81	0,51	0,91	0,61	0,78	0,54	0,95	1,00	0,79	0,89	0,00	0,57
Willingness of banks to provide a loan	0,86	0,89	1,00	0,76	0,61	0,67	0,73	0,88	0,75	0,81	0,00	0,48
Cost of borrowing for small loans relative to large loans	0,98	1,00	0,40	0,64	0,57	0,39	0,46	0,49	0,73	0,00	0,60	0,44
Total amount of time it takes to get paid	0,51	0,45	0,46	1,00	0,42	0,00	0,64	0,38	0,57	0,39	0,04	0,17
Bad debt loss	0,98	0,84	1,00	0,00	0,96	0,70	0,92	1,00	0,88	0,97	0,88	0,97
Venture capital investments	0,00	0,00	0,00	1,00	0,01	ND	ND	ND	0,00	ND	ND	0,01
Strength of legal rights index	0,57	0,86	0,57	0,57	1,00	0,29	0,86	0,43	1,00	0,57	0,00	0,39
Sum	5,35	5,01	5,34	5,44	4,79	3,27	4,81	4,17	5,36	4,34	1,93	3,75

Description: ND - no data available

Source: Author's own estimations based on 2015 SBA Fact Sheets

In order to verify the presented hypotheses the Spearman's rank correlation coefficient was calculated between the functioning conditions of enterprises in respect of flexible administration, access to financing and public debt counted in relation to GDP, assessment of state policy in terms of taxes and bureaucracy (carried out by the Global Entrepreneurship Monitor [GEM]), claims on central government in relation to GDP, assessment of state policy in terms of support and relevance (GEM), as well as the assessment of government entrepreneurship programs.

Table 4 Spearman's rank correlation coefficient between examined characteristics.

Features	Responsive administration	Access to finance
Public debt counted in relation to GDP	-0,591	-0,755**
Government policies: taxes and bureaucracy	0,583	0,833**
Claims on central government in relation to GDP	-0,745**	-0,518
Government policies: support and relevance	0,667*	0,200
Government entrepreneurship programs	0,788*	0,520

*Correlation is significant at the 0.05 level, **Correlation is significant at the 0.01 level

Source: Own estimations based on Small Business Act Fact Sheets and Global Entrepreneurship Monitor

Calculated Spearman's rank correlation coefficients (table 4) show that the functioning conditions of enterprises are strongly negatively related with the level of public debt expressed in GDP (in relation to GDP) and claims on central government to GDP. They are however strongly positively correlated with the appropriate state policy on taxes and bureaucracy. This confirms the first hypothesis assuming that a considerable state's participation in the economy has a negative effect on the functioning conditions of enterprises.

State policy in the field of support and relevance, as well as government business support programs are strongly positively correlated with functioning conditions of enterprises, what confirms the second hypothesis.

5. CONCLUSION

There is a significant difference in the conditions under which businesses in the selected for the analysis EU countries operate. The cause of this situation is a different level of state's participation in individual economies, as well as a different effectiveness of business support programmes. An example of a state which to a large extent supports the development of entrepreneurship and creates conditions for a suitable business environment can be Estonia. Lithuania and Latvia stand out as well in comparison to the other economies. Poland fell quite average however.

In order to improve the functioning conditions of enterprises, the government must introduce business support programs. It has to be stressed however, that an increase in taxes cannot be the source of their funding because it is related to the limitation of income in the private sector. It is crucial to maintain public spending at the appropriate level so as not to trigger a budget deficit, which would lead to an increase in the public debt for it negatively affects the business environment. It is therefore important to keep a correct balance between the state's participation in the economy, expressed in public debt, the amount of taxes, bureaucracy and government business support programmes.

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ASSESSMENT OF THE POSSIBILITIES OF HUMAN POTENTIAL FOR ECONOMIC GROWTH

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Abstract: *There are increasingly more contemporary economists and sociologists who believe that economic growth should be assessed through human development, based on the potential possibilities of an individual, accumulation of the human potential, and its utilization to accelerate economic growth. A great number of studies deal with the idea of human development in relation to resolving socio-economic issues, but little has been accomplished with regard to its empirical measurement. In the contemporary stage of understanding the phenomenon of human potential, it is necessary to assess the quality of social life and current economic conditions significant for the formation and realization of people's possibilities in their activities. This paper provides a general review of the results of an empirical research, which focuses not only on the assessment of accumulated human potential, but also on the analysis of an entire group of factors that influence the formation of personality.*

Keywords: *Human potential, Quality of life, Economic growth*

JEL Classification: *F 43, O 15*

1. INTRODUCTION

Numerous studies on the human potential and its assessment have revealed the following: the main difficulty in assessing the given category is that the majority of significant indicators of the state and development of human potential are qualitative indicators, which means that they are difficult to interpret from the standpoint of managerial decisions. We believe that there are not enough comprehensive studies of criteria for human potential assessment for the purpose of understanding the weak and strong aspects of human potential development, and finding and realizing the way to increase the level of human potential.

2. METHODOLOGY

To confirm the above hypothesis, a public opinion survey was conducted by an expert group, whereby the respondents were divided into the following age categories: 23-29, 30-39, and 40 and over

3. RESULTS AND DISCUSSION

In our opinion, it is the assessment of human potential in its basic form that constitutes a highly complex task, not the attempt to replace it with the concept of human capital assessment or quality of life assessment, which unconditionally affects the development of

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human potential. The assessment of the quality of social life and of the current economic conditions for the formation and realization of human potential in work or in any other socially acknowledged activity is doubtless important in order to understand the phenomenon of human potential within the contemporary stage of research. If such conditions exist, the human potential can be realized as human capital by representing a source of income for its holder. Nevertheless, the presence of specific conditions is no guarantee that the human potential will be fully realized. The value of human potential cannot be expressed solely in terms of value indicators. Generally, it cannot be reduced to mere quantitative assessment, since there are no methods for direct measurement.

By highlighting a similar hypothesis on the content and assessment of human potential, we will attempt to present the assessment criteria. We propose the following classification of indicators that could constitute criteria for human potential assessment:

- Attitude towards oneself as the holder of potential: dealing with health, emotions;
- Work activities;
- Tendency towards improvement and acquisition of new knowledge;
- Activity, life energy.

We will analyze the obtained results and explain on which level the inner human potential lies, how much people take care of their own health (personal physiological potential), how willing they are to self-improve (professional potential), what the level of people's life activity is, and their tendency to study the new and not be afraid of the unknown (creative potential).

The first group of criteria is based on people's attitude towards their health. We believe that this aspect is significant as a person's physical condition is primarily the basis of their living activity. The results revealed that 67% of the respondents regularly take measures to maintain and improve their health, 60% of whom are engaged in individual physical exercising to maintain their muscle tone. It is noticeable that the respondents aged 30 to 39 are more responsible towards their health, as opposed to those aged 23-29, who appear to be careless about their health: 23% do not spend any time on physical exercise, and 46% do not care about preserving or improving their health. Regarding their mental state, the young respondents said that they are able to control their emotions (100%). At the same time, one third of the respondents from age group 30 to 39 are doubtful as to the calmness of their nerves, just as one fifth of the age group 40 or over are (20%). This suggests that there are sufficiently strong indicators of expressing care for oneself and one's own health, both physical and mental. However, there is also a tendency of modern young people to give little attention to their health, with their expressing complete confidence about having 'steel nerves'.

The second group of criteria includes interest in the work and tendency towards professional development. To form an opinion according to these criteria, we analyzed the responses to the following questions: *Do you strive towards professional self-improvement and do you like your work? Do you think some of your ideas might significantly accelerate progress in your field of work?* and the like. The results are shown in Figure 1. In our opinion, the results are somewhat puzzling due to their illogical connection. For instance, 93% of the respondents claimed that they like their work and that they strive towards professional self-improvement, whereby the response was given by 100% of the age group 40 and over, while the youngest age group 23 to 29 expressed some dissatisfaction with their professional activity. Regardless of the high percentage of those who are interested in their work, only 13% of the respondents said they were willing to read professional literature during their free

time, while 10% of all respondents and as many as 15% of the 23 to 29 age group did not give free-time reading any thought at all. Concerning work, it is perhaps worth mentioning the possible strategic capabilities, which are manifested through searching for one or several alternatives of solving a set task. In this case, the tendency is similar for all three age groups of respondents, whereby an average of 77% claim that it is necessary to have several alternatives for a solution.

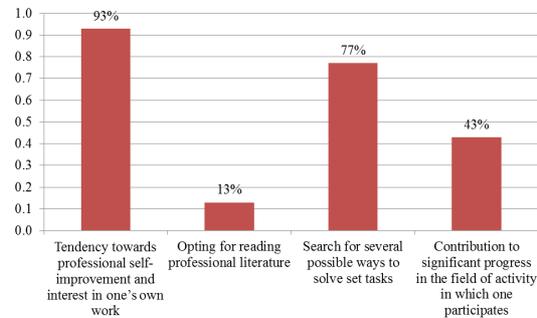


Figure 1 Results according to the second group of criteria for human potential assessment

Source: Own source

The results of how much the respondents acknowledge their own significance in their professional sphere are fairly interesting (Figure 2). Forty-three per cent of all respondents believe their ideas can only partially affect the course of events, whereby this indicator of ‘doubt’ is even higher among the youngest age group 23 to 29 (54%), which suggests that the younger generation is unsure of their own strength, lacks ambition, and regards work only as a source of income, not as a means of realizing their potential or actualizing their ideas in the professional sphere. The mature generation (40 and over), taught by experience, are 60% certain that their ideas could be sought and accepted by the professional community, with a slight caveat included - favorable conditions.

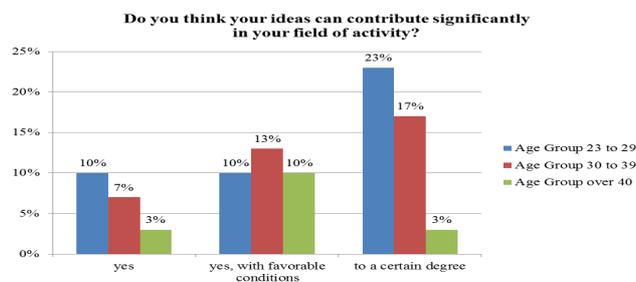


Figure 2 Results of the survey on how respondents experience their own significance in their professional field

Source: Own source

This leads to a conclusion that people who are interested in their professional self-improvement are prone to contribute to the professional sphere one way or another. Yet, this interest is by no means unconditional. Since any accomplishment in modern times requires hard work and persistent effort, people are left with little time out of their working hours to individually study the issues professional character, which was confirmed by the survey on the favorite literary genre. Unfortunately, negative tendencies were observed among the younger generations, who are supposed to be the engines of success.

The third group of criteria is oriented towards the human tendency towards self-improvement and acquisition of new knowledge as a prerequisite for the manifestation and realization of their potential. Most respondents (58%) understand that achieving a result they expect is a form of success, and they are convinced they know in which direction they should be heading in order to achieve a desired result. This indicator is high in the age group 30 to 39 (over 60%), but decreases in the age group 40 and over (40%). Thirty-eight per cent from the youngest group desire to be sought after and successful, which makes one think about the material aspect of such an opinion. In our opinion, this tendency is manifested through the desire to work in a prestigious position (if possible, a management position), to receive a high salary with a minimum effort; interestingly enough, only one respondent from the youngest age group holds a managerial position. Young generation does not think about creating value for other people and how their work might be beneficial for the society. In contrast, among the more mature generation, which recognized life values, 20-30% are willing to create value for other people through their favorite work.

It is obvious that success requires more than mere wishing. It is necessary to expend the effort into self-improvement and both personal and professional development. A half of all respondents are willing to acquire new information and knowledge, but only if it is absolutely necessary. In addition, 33% of all respondents are willing to discover their own capabilities and possibilities through acquiring new knowledge, out of which only 10% are from the youngest age group. In the age group 40 and over, respondents showed much less initiative with only 3% responding affirmatively.

Respondents over the age of 40 are already professionals in their line of work and possess considerable knowledge and experience.

Responses to the question whether people are willing to acquire additional knowledge at their own expense are shown in Figure 3. Knowing their possibilities, recognizing the demands the society makes, and accepting modern tendencies of development and the necessity of new information, the respondents from age group 30 to 39 are willing to invest in themselves for their own development (50% from the age group). The younger generation is only slightly behind concerning this indicator (46%), admitting the knowledge they already have is insufficient for them to achieve their desired results and ambitions. There is a noticeable declining tendency of the willingness to self-improve from the youngest age group towards the oldest (15-17-20% from each respective group do not wish to invest in their own development), whereby the 15% of the youngest age group should be considered a fairly high value for the indicator. The percentage of those undecided on this issue is also high (33% to 60%).

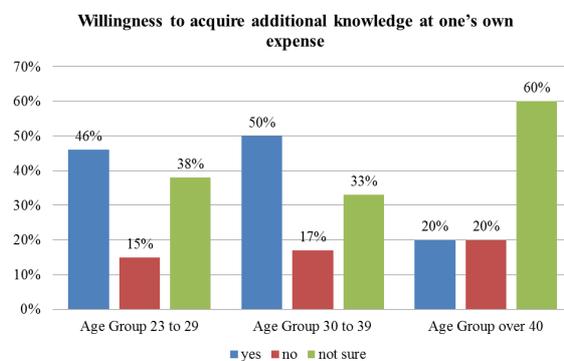


Figure 3 Results of the survey on whether respondents are willing to acquire additional knowledge at their own expense

Source: Own source

It makes sense to study the respondents' opinion on whether they are willing to continue their education on the foundation of their previous education (Figure 4).

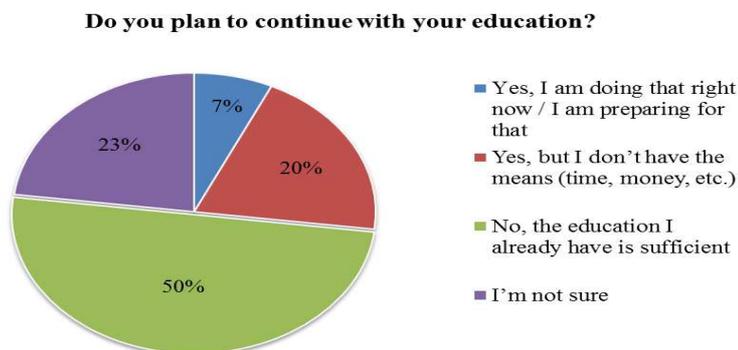


Figure 4 Results of the survey on whether respondents are willing to get further education as a continuation of their current education

Source: Own source

A half of all respondents said they did not feel any need for additional education. This indicator can be partially connected to the data from Figure 3 with strong negative indicators of acquiring new information at one's own expense and a high share of undecidedness. Twenty per cent said they were interested in further education and development but they lacked the means. Only 7% (for which the credit goes to the younger group) are currently involved in getting new education.

The respondents' motivation for acquiring new knowledge is particularly interesting (Figure 5).

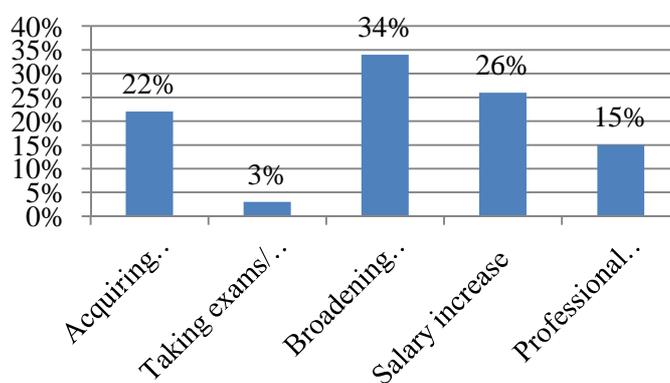


Figure 5 Results of the survey on what motivates respondents' self-development

Source: Own source

Thirty-four per cent of all respondents are willing to broaden their horizons and develop new competences by receiving additional education, whereby this tendency increases from one age group to another: 57% of the older generation are invested in broadening their horizons through additional education as opposed to only 17% of the younger generation. Among the motivating factors for additional education, salary increase is ranked second with 26%. However, this factor is more prominent among the younger (31%) than among the older

generation (17%). Professional advancement, as motivation for additional education, is of relevant interest to the age groups 23 to 29 (16%) and 30 to 39 (15%) (Figures 6-8).

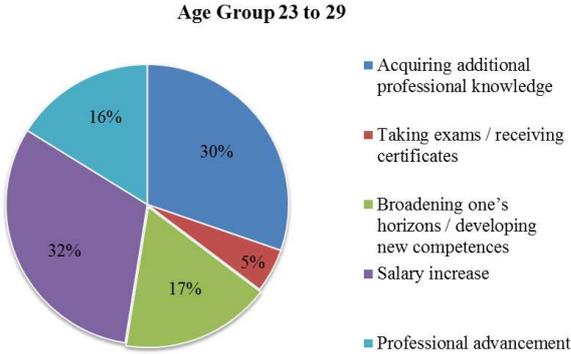


Figure 6 Results of the survey on what motivates respondents' self-development (Age Group 23 to 29)

Source: Own source

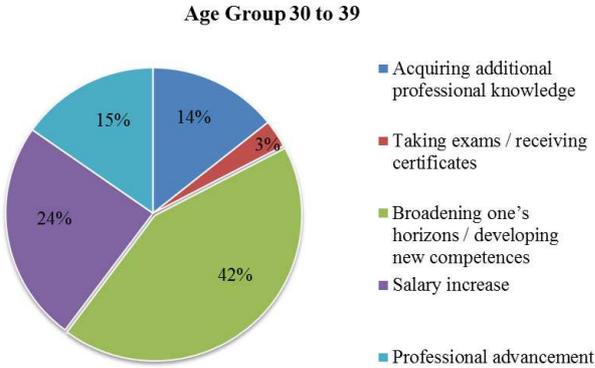


Figure 7 Results of the survey on what motivates respondents' self-development (Age Group 30 to 39)

Source: Own source

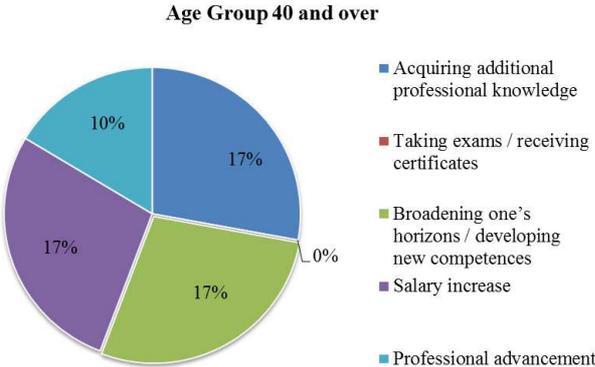


Figure 8 Results of the survey on what motivates respondents' self-development (Age Group 40 and over)

Source: Own source

Therefore, the respondents are certain about the direction they need to take in order to achieve desired results and they have high ambitions. It should be noted, however, that they consider

acquiring new knowledge and information only if it is necessary. A half of the respondents do not consider getting additional education in the future, but salary increase is still given as a motivating factor. This implies that their claims about willingness to accomplish goals do not correlate strongly with the willingness to work on themselves by acquiring theoretical and practical knowledge.

The fourth group of criteria is oriented towards understanding how much people are active and interested in the various phenomena surrounding them, and how and in which direction the life energy moves them.

In order to manifest the potential present in every person, it is necessary to strive for development and new knowledge, to adopt a proactive attitude to life, and to pursue set goals. It would be interesting to learn how developed the adventurous spirit is in modern people – the engines of progress. Sixty per cent of all the respondents said that they would think about an idea that preoccupied them regardless of where and with whom they were, with the age group 40 and over prevailing with 80%. In case someone dismisses their idea, 60% said they would abandon it provided they are presented with convincing arguments.

One of the survey questions, “*Would you be willing to do a job with which you are completely unfamiliar?*”, was aimed at understanding the aspiration and willingness people manifest when attempting to extract at least a portion of their hidden potential. The obtained results suggest that the level of adventurousness increases, despite all logic, from the youngest towards the older age groups.

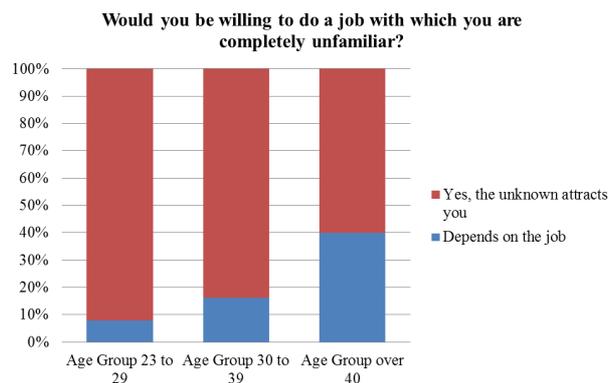


Figure 9 Results of the survey on respondents’ willingness to do a job with which they are completely unfamiliar

Source: Own source

The survey revealed that 77% of the respondents were willing to take initiative at the beginning of any activity, with an interesting tendency observed: 69% from the youngest age group, 75% from the middle age group, and 100% from the oldest age group are willing to take initiative. We must stress that one fifth of the age group 23 to 29 had difficulty answering the question about taking initiative. Likewise, 54% of the young respondents would not answer the question “*Are you convinced that your work will be successful?*” stating the type of work as the reason. As few as 3% of all respondents often believe they will not be able to complete the set task and all 3% belong to the youngest age group. However, if they were to begin work and fail at it, 60% of all respondents claimed they would continue with the work, even when it was apparent the obstacles are difficult to overcome, which shows persistence in dealing with set tasks.

In our opinion, manifestation of the human potential is impossible without additional effort and new ideas. Since both companies, which operate in a competitive surrounding, and people are quicker to understand the necessity of self-improvement under the circumstances that require personal development. A portion of the respondents said they felt comfortable in an atmosphere of confrontation, competition, and realization of one's thoughts. Accomplishment of set goals is by all means impossible without inner aspiration. The human potential is manifested through willingness to show initiative, through confidence in one's own strengths, and through the ability to stoically endure failure and move forward with one's development.

4. CONCLUSION

The conducted survey was an attempt to learn what the respondents think about the notion of 'human potential'. Similar to the literature on the topic, most respondents spoke of human 'possibilities' and 'capabilities', which again confirms that there is no qualitative definition that could serve as a basis for further investigation of human potential. Thirty per cent of the respondents had difficulty answering this question. We find the following definition noteworthy: "human capital is a set of the biggest non-manifested human capabilities, possibilities, and qualities which, under favorable conditions for their development, transition from the state of potential into a state of existence", as it is the closest to our hypothesis.

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INFORMAL EMPLOYMENT IN THE WESTERN BALKANS

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Abstract: *Despite being a wide-spread phenomenon, there is limited research on labour informality in the Western Balkans. The main reason for lack of research has been related to lack of appropriate data. This paper attempts to enrich our understanding of informal employment in this region. This is first done by assessing informal employment definitions applied in Western Balkan countries and then by examining the most vulnerable groups towards informality. We find that the incidence of informal employment depends on the definition used and, consequently, that measures of informality are not fully comparable between countries. Profile of workers most likely to be informal appears roughly the same across countries. Men, oldest and youngest workers, those with the lowest level of education, and employed in agricultural sector are most exposed to informality, although some caution is needed, given different definitions applied in defining informal employment.*

Keywords: *informal employment, operational definitions, vulnerable groups, Western Balkan countries*

JEL Classification: *J46, J82, J78, O57*

1. INTRODUCTION

Labour markets in Western Balkan countries are characterized by low labour force participation, high unemployment and low employment rates. In 2012, on average, half of the working age population was inactive, the highest rate being in Bosnia and Herzegovina (56%) and lowest found in Macedonia (43%). The unemployment rate in Western Balkan countries remains high, averaging almost 25 percent in 2015 (World Bank, 2016). The highest rate of unemployment is found in Bosnia and Herzegovina with 27.7 percent and the lowest rate recorded in Albania at 17.1 percent. About one quarter of youth in the five Western Balkan countries are neither in employment, education, or training (NEET). Unemployment rates of youth and women are higher and a vast majority of unemployed are jobless for prolonged periods (World Bank, 2016).

The presence of an informal sector in the economy may pose unfair competition to formal firms; it deprives governments of potential tax revenue and diminishes a government's capacity for regulatory oversight. According to the World Bank Enterprise Survey of 2013, on average, 49.2 percent of firms in Western Balkan countries (Albania, Bosnia and Herzegovina, Macedonia, Montenegro and Serbia) competed against unregistered or informal firms, compared to the average of 39.1 percent of enterprises in South east Europe and Central Asia. The lowest share of firms declared to have competed against unregistered firms is found in Serbia with 38 percent of such firms. The informal sector is found to be a serious development constraint, since 26 percent of firms in the above noted countries identified practices of competitors in the informal sector as a major constraint, while the average in South east Europe and Central Asia is recorded to be 21 percent.³

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³ <http://www.enterprisesurveys.org/data/exploretopics/informality#all-countries>

Although different and imperfect definitions are applied in depicting informal employment in covered countries, it is certain that a significant share of employees work informally, ranging from 20 to 30 percent of the workforce (Table 1). Working informally, employees do not contribute to pension funds and as such they become a burden for future generations³; they cannot benefit from legal rights as defined by laws; and usually these employees are paid less than their peers who work formally. On the other hand, the burden of safeguarding social development rests on registered employees who have to contribute more to make up for the unregistered employees and the unemployed workforce.

By not declaring employees businesses and the employees prioritise personal short-term cash solutions rather than long term social benefits, thereby stifling economic growth and prosperity⁴. Despite being a wide-spread phenomenon, there is limited research on labour informality in Western Balkan countries. The main reason for lack of research has been related to lack of appropriate data. Given that informal employees represent a sizable segment of the workforce and the negative impact to businesses, employees and the country as a whole, this paper focuses on informal employment.

The paper is organized as follows: Section 2 provides a literature review on informal employment in Western Balkans; Section 3 outlines methodology; Section 4 presents main findings and Section 5 outlines concluding remarks and recommendations.

2. LITERATURE REVIEW

This section first presents regional studies focusing on informal employment in Western Balkan countries, and then a literature review for each country.

Informal labour markets have not been studied intensively in these countries, although informal employment is wide-spread in this region. The three regional ILO reports provided an overview of informal employment in some of these countries. ILO (2011) study presents comparative overview of the nature and extent of informal employment in Albania, Bosnia and Herzegovina, and Montenegro. The study reports that on average at least 30% of all employees are employed informally. Women, youth, elderly and less educated and low skilled labour are more prone to informal employment. The other ILO report (2012) compiled statistics on non-agricultural employment in informal economy in 47 countries covering two countries from the Western Balkans region, Serbia and Macedonia.⁵ The lowest level of informal employment (as a percent of non-agricultural employment) is recorded in the countries of Central and Eastern Europe; Serbia (6.1%) and Macedonia (12.6%) are the best positioned among them.

According to the ILO report Global Employment trends in 2013 (ILO 2013), high and increasing informal employment remains one of the major challenges in most of the countries of Central and Eastern Europe, despite improvements in other labour market indicators. All Western Balkan countries recorded an increase in the informal employment rate between 2000 and 2010. The study also shows that Serbia and Montenegro had the lowest incidence of informal employment in 2010 (19 percent), while Albania the highest (around 30 percent).

⁴ <http://ebrd-beeps.com/wp-content/uploads/2015/07/BEEPSV-complete.pdf>

⁵ Both ILO studies used new concept of informality adopted by the International Conference of Labour Statisticians (ICLS, 2003).

2.1. The Republic of Serbia

A number of studies on informal employment have been conducted in Serbia. Several studies found that the informal sector is a significant source of labour mobility in Serbia, providing more job opportunities for the unemployed and inactive, but also having more job closures than the formal sector (World Bank 2004, Krstić 2012, Arandarenko 2011). Koettle (2013) found that high labour taxes for low wage workers and benefit design provided incentives for informal employment. Krstić and Sanfey (2011) also pointed to the regressiveness of the wage taxation system as a possible reason for the significant rise in informal employment between 2002 and 2007 based on the LSMS data. The authors showed that informal employees earned significantly less than those in the formal sector, even when controlled for a range of other characteristics, and that informality played an important role in explaining earnings inequality. Blunch (2015) also found a large formal-informal earnings gap, favouring the formal sector, using the LFS data for 2008 and 2009. Similarly, using 2013 LFS data, Radvanský and Štefánik (2016) reported that informal employees are more likely to be at the lower end of wage distribution and that there is only a 20% likelihood of middle income groups being informally employed.

Krstić and Schneider eds. (2015) developed policy measures to enhance the formalization of the shadow economy in Serbia. The authors estimate the shadow economy in Serbia to be from 21% to 30.5% of GDP using three different approaches based on available macro data and on a special survey of registered business entities in Serbia. A recent study by Arandarenko (2016) argues the need to reform the tax benefit system and to lower labour taxation in general, by reducing the labour tax wedge for low wage labour, and partially compensating for the revenue loss by introducing direct progressivity of income tax.

2.2. Montenegro

Several studies on informal employment have been conducted in Montenegro. The Institute for Strategic Studies and Prognoses (2007) analysed informal employment based on the survey of households conducted in 2007. The authors estimated that 36.9 percent of all employed individuals aged 15-64 years were informal workers, and provided a profile of these workers. The other study ‘Strengthening of Social Dialog in Montenegro – Reducing Undeclared Labour and the Grey Economy through Social Partnership’ focused on undeclared work, which amounted to between 15 percent and 20 percent of total employment in Montenegro in 2009. According to the study prepared by the Faculty of Economics (2013), informal employment constituted 29.3 percent of total employment, based on surveys on businesses and households conducted in 2013. Key causes of informal employment were examined in the report prepared by the Union of Employers of Montenegro (2014).

Informal work was a special topic of the 2016 National Human Development Report (UNDP, 2016), which provided a comprehensive analysis of the causes and consequences of the informal economy, and strategies for its formalization. The report shows a very high informal employment rate of 32.7 percent based on surveys of households and businesses.

2.3. Bosnia and Herzegovina

The World Bank (2005), using the LSMS data, found that informal employment accounted for 37 percent of total employment in 2001 and 42 percent in 2004, and that it is heavily concentrated in the agricultural sector. Similarly, the European Training Foundation (2006)

confirmed that increased overall employment between 2001 and 2004 was largely facilitated by the growth in informal employment. The report also found that the mobility of the labour force in Bosnia and Herzegovina was much higher than in other transitional countries, mainly due to high informal employment and large inflows into and outflows from informal employment. Krstić and Sanfey (2007) analysed informal employment, poverty and mobility using the LSMS data for 2001 and 2004. The authors confirm that the informal sector is a significant source of labour mobility, providing more job opportunities for the unemployed and inactive but also having more job closures than the formal sector; the pattern is similar to that observed in Serbia. The Economics Institute of Sarajevo (2015) and Oruč (2016) provided an overview of the labour market, with a focus on informal employment using the LFS data. The authors showed that informal employment constituted between 25 percent and 29 percent of overall employment in Bosnia and Herzegovina, and that it is mostly concentrated in rural areas.

2.4. Albania

Focusing on informal employment in rural areas, Mece (2016) claims out that the high level of unemployment in rural areas may shadow under employment or informal employment. The study also highlights that women and youngsters in rural areas are particularly those engaged in unpaid labor, which in Albania artificially increase labor force participation and employment statistics while underestimating the rate of unemployment. Mara and Narazani (2013), using data from the Albanian LSMS for 2005 and 2008 found that the 10 percent flat tax introduced in 2007 has not contributed to the reduction of labour informality but the impact has been driven by increases in formal sector wages, which have motivated individuals to move to this sector. Additionally, the study found that compared to fines, controls and audits were more efficient mechanisms in pushing employees to move from informal to formal labour market. Authors conclude that a kind of progressivity should be back in the taxation.

2.5. Macedonia

Given lack of accurate measures of informal employment, Garvanlieva et al. (2012) estimated the shadow employment based on a simple approximation using the shadow rate as percentage of the GDP applying the energy consumption method. Using a simplified estimation, authors calculated that in 2010 the recalculated unemployment rate is 24%, compared to the official 31%, by reducing the total number of official unemployed by almost 71,000 officially unemployed. Dzhekova et al. (2014) using LFS data, found that women were mainly informally involved as unpaid workers in agriculture, whereas men as self-employed or employers in unregistered firms. To measure informal employment, Garvanlieva et al. (2012) estimate discrepancies between data on registered employment from the LFS and data on salary payments processed by the Bureau of Payments Operations. Related to the accuracy of informal employment, Mojsoska-Blazevski et al., (2009) claim that the provision of health insurance is a factor inflating registered unemployment and supporting informal employment and inactivity since these persons have access to health insurance (pp.112).

Evidence suggests that informal workers in Macedonia hold temporary contracts, are paid low wages and hence more prone to be poor (Novkovska, 2008; Mojsoska-Blazevski et al., 2013). Main factors pushing workers to work informally in Macedonia are considered to be the social benefit system and the high labour taxation (Mojsoska-Blazevski et al., 2009). Moreover, this study also claims that the provision of health insurance is a factor inflating

registered unemployment and supporting informal employment and inactivity since these persons have access to health insurance (pp.112).

3. METHODOLOGY

This section reviews available data sources and operational definitions for measuring informal employment in the Western Balkans region. The LFS and the LSMS data have been used so far for measuring the informal employment in five Western Balkan countries. The LFS is used in most of the countries considered, while the LSMS is used to explore informal employment in Serbia, Bosnia and Herzegovina, and Albania. The Survey of Income and Living Conditions (SILC) has been conducted in Serbia, Montenegro and Macedonia.

Although the LFS exists in all considered countries in the region, in most countries it does not contain all information necessary for defining informal employment according to the methodology proposed by the ILO (ICLS, 2003). For these countries, for the purposes of this research, we will use other proxies for informal employment based on the LFS, or rely on unofficial data sources. Special ad hoc national representative population surveys focusing on informal employment were conducted in Serbia, Montenegro, Macedonia and Albania.

Estimates of the informal employment rate in Western Balkan countries and operational definitions of informal employment based on data provided by official LFS reports are presented in Table 1. For some countries, we include alternative definitions of informal employment. They are based either on expert estimates using the LFS data or on unofficial data sources which provide better coverage of informal employment.

Before providing estimates of informal employment that will be used in this study, we examine what information can be obtained from the official LFS reports for each country.

Information on informal employment in Serbia has regularly been published since 2008 based on the LFS. The LFS questionnaire contains most of the specific questions necessary for measuring informal employment according to the ILO (2013). The SORS definition of informal employment covers: (a) workers in unregistered firms; (b) workers in registered firms but with no written contract and with no health or pension insurance paid; and (c) unpaid family workers. Besides the LFS, the Survey of Income and Living Conditions (SILC) can be also used for measuring and analyzing informal employment in Serbia, as it collects all information required for a proper definition of informal employment. It has been conducted on a regular basis since 2013.

The LFS is regular official survey in Montenegro based on which some components of informal employment can be continually tracked. It allows partial estimates of informal employment, given that only two components of informal employment can be estimated, i.e., employees without a contract and unpaid family workers. They constituted only 6.4% of total employment in 2015 (MONSTAT, 2014).

Given these constraints in the LFS data, for the purpose of this research we will use the Montenegrin household survey on working conditions which was conducted by the IPSOS Strategic marketing agency in 2014. The survey was designed to encompass the concept of informality in the best possible way. Thus, informal employment covers: (a) employers, self-employed and employees in unregistered firms; (b) employees in registered firms but with no written contract and with no health or pension insurance paid; (c) employees with a contract who receive an envelope wage (part of their salary is not taxed nor are social contributions paid). This definition is broader than the one used in Serbia as it also includes employees with a contract but with only partially paid contributions. However, due to comparability

issues we will use the same definition as applied in Serbia. The survey was carried out on a representative sample of 1,273 household members, aged 15 and above, who had a job, or were seeking one in the week preceding the interview.

Similar to Montenegro, official estimates of informal employment for Bosnia and Herzegovina based on the LFS data are not available. However, the LFS collects information on health and pension insurance paid, which can serve as a good proxy for informal employment. We use the definition of informal employment provided by Oruč (2016), which covers employees with pension insurance paid based on the LFS data.

For Macedonia LFS survey contains information on employed persons who are not registered (in their main job) in the Pension Fund, the Health Fund and/or an Employment Agency, which is used to measure informal employment. Using this definition, the regular LFS annual report explicitly provides data on informality.

Table 1 Informal employment rate in the Western Balkans region

Country & Data source	Informal employment rate (%)	Operational definitions of informal employment
Serbia		
LFS report, 2015	20.4	Workers in unregistered firm; workers in registered firm but with no written contract and with no health or pension insurance paid; unpaid family workers.
Montenegro		
LFS report, 2015	6.4	Employees without written contract or with oral agreement; family workers
Survey of households, IPSOS, 2014	22.3	Employers, self-employed and employees in unregistered firm; employees in registered firm but with no written contract and with no health or pension insurance paid.
Survey of households, IPSOS, 2014	32.7	Employers, self-employed and employees in unregistered firm; employees in registered firm but with no written contract and with no health or pension insurance paid; employees who receive an envelope wage (part of their salary is not taxed nor is social contributions paid).
Bosnia and Herzegovina		
LFS report, 2015	5.9	Unpaid family workers
LFS, 2014	29.1	Employees with no pension insurance paid (Oruč 2016).
Macedonia		
LFS report, 2015	19.9	Employed persons who are not registered (in their main job) in the Pension Fund, the Health Fund and/or an Employment Agency.
Albania		
LFS report, 2015	30.0	Contributing family workers

Source: LFS reports for each country

For Albania, LFS survey gathers information on self-employed without employees and unpaid family workers. In the 2015 LFS report, in defining informality a reference is made to the ILO definition, based on which informal employment accounts only for unpaid family workers but does not include self-employed without employees. Besides the LFS, for Albania, the LSMS survey can be used as a data source to measure informality, as indicated in previous section.

The LSMS questionnaire includes a question on whether employed persons are entitled to benefits of social security which can be used as an approximation for informality. However, the survey is not done on a regular basis and so far, four rounds have been undertaken (in 2002, 2005, 2008 and 2012).

4. RESULTS AND DISCUSSION

This section provides evidence for labour informality in Western Balkan countries and presents groups of workers that are more prone to informality.

Based on assessment in the previous section, we derive three conclusions related to incidence of informal employment. First, the operational definition of informal employment differs between countries depending on data availability, from the most exhaustive provided for Serbia and Montenegro to the narrowest one for Albania, where it includes only contributing family workers. Second, different measures of informality have different quantitative implications which can be observed within a single country and/or between countries. While the lowest incidence of informal employment for Montenegro is given by employees without a written contract or family workers based on the LFS (6.4%), the highest number emerges if we use Montenegrin household survey on working conditions and a definition based on envelope wages (32.4%). A similar situation is detected for Bosnia and Herzegovina, given that incidence of informal employment varies from 5.9% to 29.1% depending on the definition used. Third, measures of informality are not fully comparable between countries. Comparability is achieved for Serbia and Montenegro, as both countries use the same set of questions for distinguishing informal from formal work. Broad comparability appears for Bosnia and Herzegovina and Macedonia, given their similar measures of informality based on payment of social security contribution.

4.1. Informal employment by gender

In Serbia, more men than women are informally employed (55% vs. 45%), but women are more likely to be in informal employment as compared to men, given that the informal employment rate of women is higher than that of men (21.3% vs. 19.6%). This is explained by the higher share of men in total employment than in informal employment.

In Montenegro, men are more likely to be involved in informal employment than women, which is in line with the low level of employment in agriculture (8.7%), where women dominate as unpaid family workers.

In Bosnia and Herzegovina, typical informal workers are men, as they account for about two thirds of the informally employed. The difference between the informal employment rate of men and women is 3.4 percentage points, which confirms that men are also more likely to be engaged in informal employment. This is due to the higher share of men engaged in agriculture, than women, which is the sector in which informal employment dominates.

Based on 2015 LFS, men in Macedonia constitute nearly two thirds of informally employed persons and compared to women they are also more likely to be informally employed: the informality rate of men is 21.1 percent compared to 18.2 percent for women.

In Albania, informality rates are almost identical for women and men. However, men seem more likely to be self-employed without employees while women are more likely to be engaged in unpaid family work.

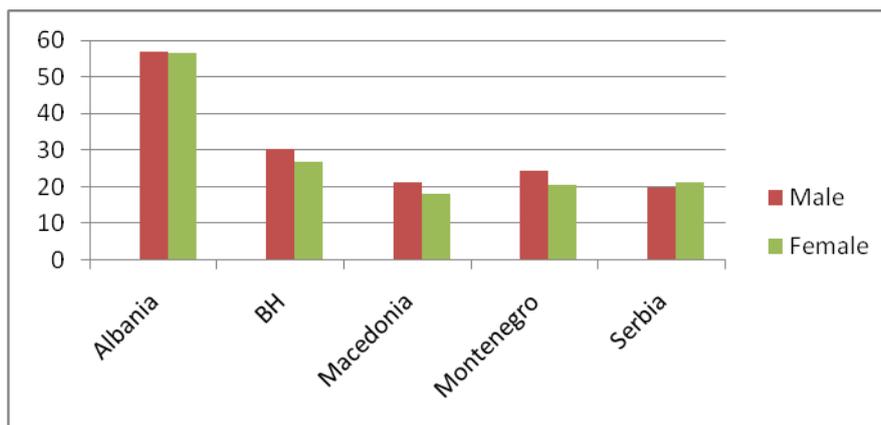


Figure 1 Informal employment rate by gender, latest available year

Source: 2015 LFS for Albania, Macedonia, Serbia; 2014 LFS for Bosnia and Herzegovina; 2014 HSWC for Montenegro.

4.2. Informal employment by age

In Serbia, workers who are most likely to be informally employed are those who are at the margin of the labour market, namely the oldest ones, who are about to leave the labour market, and the youngest, who have just entered it. Thus, the informal employment rate is highest for the oldest and the youngest age groups (57% and 39% respectively), although these two age categories have the lowest share in informal employment (11% and 10%).

In Montenegro, the informal employment rate decreases up to the age of 35-45, and then it increases. This is in contrast to the employment rate which increases up to 35-45 and then decreases (MONSTAT, 2014). Although most informal workers are aged 35-60 (59.9%), the informal employment rate is the highest for the oldest age group (73% for those aged 65 and above) and for the youngest (34% for those aged 15-24).

In Bosnia and Herzegovina, the oldest workers are also most exposed to informal employment with the informal employment rate amounting to 86%. However, this group does not have a large share in informal employment. The next age categories with the highest exposure to informal employment are the youth and those aged between 55 and 64. These two age groups have informal employment rates of about 36%.

In Macedonia, among the working age population, the informality rate is higher among youth (aged 15-24 years) as nearly 40 percent are informally employed compared to the country average of 19.9 percent. The informality rate among youth is higher for men than women. The second age group which is most at risk of working informally is the age group 55-64 years old. The vast majority of those aged over 65 years are informally employed.

In Serbia, the majority of informal workers have primary education or less (55%). Workers with a low level of education are most likely to be engaged in informal employment. The informal employment rate for workers with primary education or less is around 50%, while it is only around 14% for those with secondary education and 3% for those with higher education.

In Montenegro, as in Serbia, the higher the education level, the lower the informal employment rate. While around 70% of workers with no education and 50% of workers with

primary education work informally, this is the case with only around 8% of those with high school and 5% of those with university education.

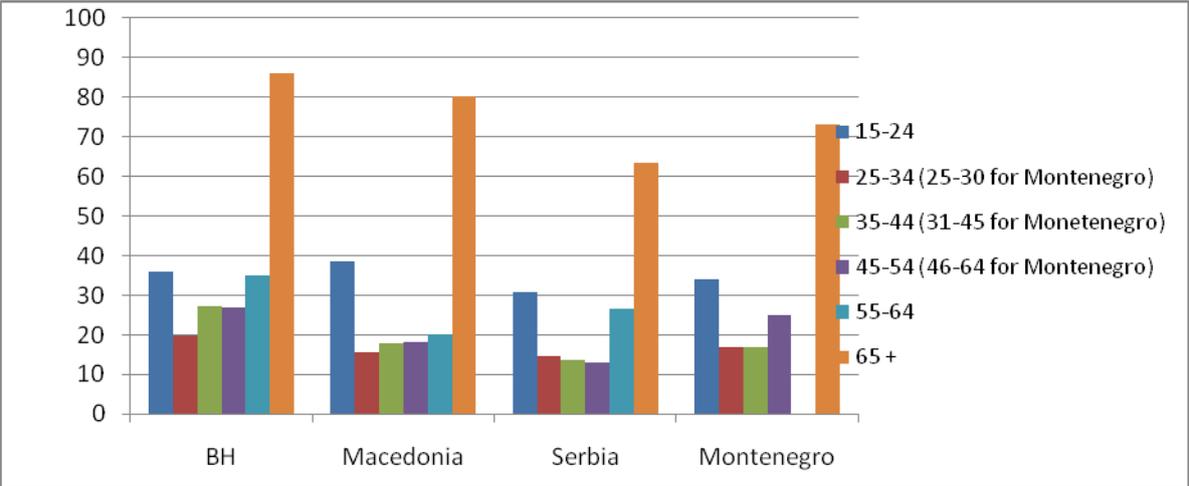


Figure 2 Informal employment rate by age groups, latest available year

Source: 2014 LFS for Bosnia and Herzegovina; 2015 LFS for Macedonia; 2013 LFS for Serbia; 2014 HSWC for Montenegro.

4.3. Informal employment by level of education

In Bosnia and Herzegovina, informal employment rates by level of education appear similar to that of Montenegro, where around 86% of workers with no education work informally, while this is the case for only 8% of those with higher education.

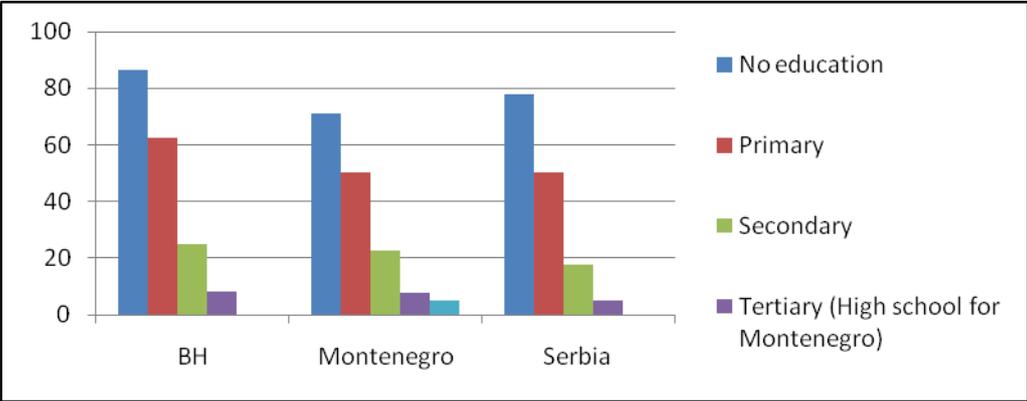


Figure 3 Informal employment rate by level of education, latest available year

Source: 2014 LFS for Bosnia and Herzegovina; 2014 HSWC for Montenegro; 2015 LFS for Serbia.

4.4. Informal employment by sectors of economic activity

In Serbia, informal employment is most prevalent in agriculture, which is confirmed by very high informality rate in this sector. Informal workers accounted for 62% of all workers in agriculture, since unpaid family workers, who are by definition informal, are mostly concentrated in this sector. Informal employment rates in industry and services are less than 10%.

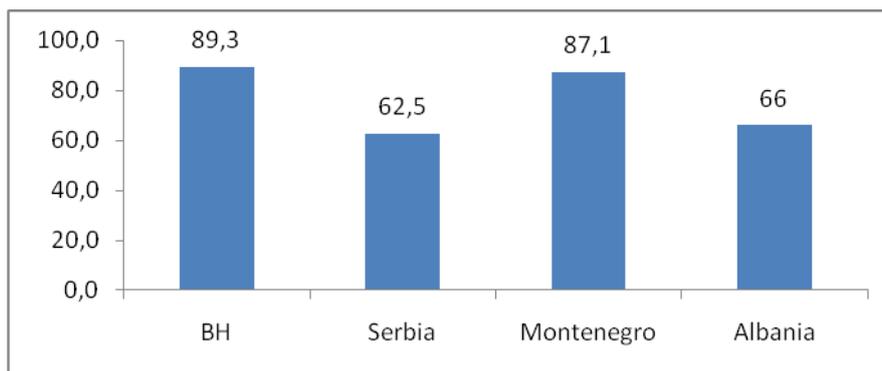


Figure 4 Informal employment rate in agriculture, latest available year

Source: 2014 LFS for Bosnia and Herzegovina; 2013 LFS for Serbia; 2014 HSWC for Montenegro; LFS 2015 for Albania.

In Montenegro and in Bosnia and Herzegovina, informal employment in agriculture is even more pronounced than in Serbia, since the informal employment rates in agriculture are 87% and 90% respectively. In Montenegro, informal workers also dominated in households as employers (91%) and in construction (36%). In Bosnia and Herzegovina, construction has the largest share of informal workers (35%), after agriculture. In Albania, two thirds of informal employment was present in the agriculture sector.

In summary, we can conclude that the profile of workers most likely to be informal across countries is roughly the same, although some caution is needed when making comparisons, given the different definitions of informal employment. Men are more likely to be involved in informal employment in Montenegro and Macedonia, women are more likely to be informally employed in Serbia, while no gender difference appears for Albania. The oldest and youngest workers are most likely to be informally employed in all countries examined for which data is available (Serbia, Montenegro, Macedonia, Bosnia and Herzegovina). Workers with primary or lower education and those employed in agriculture are more exposed to informal employment (Serbia, Montenegro, Bosnia and Herzegovina). In Albania, agricultural workers are also most exposed to informality.

5. CONCLUSION

Although informal employment is wide-spread in Western Balkan countries, informal labour markets have not been studied intensively in this region, and our knowledge of this phenomenon is relatively limited. This paper takes stock of most relevant literature discussing some important issues and provides evidence of the incidence and profile of these workers.

We demonstrate that the incidence of informal employment depends on the definition used and, consequently, that measures of informality are not fully comparable between countries. Comparability of measures can be achieved between Serbia and Montenegro, as both countries use the same set of questions for distinguishing informal from formal work, as well as between Bosnia and Herzegovina and Macedonia. The profile of workers most likely to be informal appears roughly the same across countries, although some caution is needed, given different definitions of informal employment. Men, oldest and youngest workers, those with the lowest level of education, and employed in the agricultural sector are most exposed to informality.

We also identify the potential avenues for data collection and for further research. Regarding data, the main recommendation for official statistics of most Western Balkan countries is the collection of additional information in the LFS (and in SILC) required for the adequate measurement of informal employment according to the ILO guidelines. From the policy perspective, we identified two potential research areas: 1) determinants of informal employment, mobility analysis, linkages with poverty and social protection; 2) assessment of policies and mechanisms in combating informal employment in these countries and in countries that managed to reduce informal employment.

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DEVELOPMENT OF INDUSTRIAL CLUSTERS - THE SPECIFICITIES AND FEATURES OF IT CLUSTERS

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Abstract: In modern conditions, increasingly important trend is linking small and medium enterprises (SMEs) into industrial clusters. Permanent changes occurring in the global market, increased competition and changes in the operations of many companies have encouraged the SMEs to join the clusters, and thus to be competitors to large enterprises. Clusters are increasingly important because they affect the progress and prosperity of small and medium-sized enterprises in every respect. It is easier for these SMEs to face the changes that are evident in today's changing environment. Likewise, it is easier for enterprises that join together in clusters to face the competition, because there is a joint venture, cooperation and support of local institutions. Except joint ventures and cooperation, the other factors influencing development of the clusters are common interests of the members related to the procurement, sales, labor and technology. The specific type of industrial clusters are Information Technology (IT) clusters and investment in this type of clusters can cause positive impact on economic development. This paper pays special attention on specificities, characteristics, types of IT clusters and resources important for its development as well.

Keywords: Features of industrial clusters, specificities of IT clusters, development of IT clusters

JEL classification: L86, M15, O14

1. INTRODUCTION

In the economic literature, clusters mentioned since 1990 when Porter (1990) emphasized the importance of clusters to increase the competitive position of companies in the domestic and international markets. He defines them as a geographic concentration of interconnected companies, specialized suppliers, service providers, firms in related industries, and relevant institutions (e.g. universities, standardization agencies, tourism and trade associations), which in certain areas compete with each other, but also cooperate. (Porter, 1998)

On the basis of this concept is cooperation, as a joint operation of at least two companies, in order to increase business performance, and the realization of synergy effect - when the combined effect is greater than the sum of the individual effects. A strong competitive advantage in the global economy lie mainly in local factors - knowledge, relationships, motivation. These factors make differences that competitors can not easily copy, which can best be developed through clusters. (Bošković, Kostadinović, 2011)

Clusters, therefore, arise primarily because of the necessity of survival of small and medium-sized enterprises. Through their union, these companies simulate the operation of large enterprises, while retaining legal and business independence (Bošković, Jovanović, 2009). In addition, the clusters are drivers of innovation and economic development (Porter, 1990). Clusters represent one of the possible answers to the process of globalization and the uneven

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regional development. Pooling of companies can lower operating costs through unified procurement, joint delivery, public performance, sharing training costs, transportation, marketing and the like.(Đorđević *et al*, 2010)

Experience in the development of clusters in the European Union (EU) and the world indicate that the concept of clusters is an important part of the policy instrument of the local and regional economic development, development of small and medium-sized enterprises (SMEs), stimulating competitiveness and innovation.(Maksimovic, Micic, 2015). The aim of this paper is to explain specificities of IT clusters and how these specific characteristics and particular types of IT clusters influence development process and success of IT clusters. Before explanation of the specificities of IT clusters development, characteristics, types advantages, establishment, development and strategy of industrial clusters are presented.

2. FEATURES, TYPES AND ADVANTAGES OF INDUSTRIAL CLUSTERS

The cluster, which is developing at a location, certainly depends on the business environment. Since this term is very broad, Porter in 1990 introduced the "diamond" as an analytical tool to explain the business environment. Overall, the diamond involves four elements: (1) the production factors (physical infrastructure, skills, etc.), (2) demand conditions (the sophistication of local consumers, production and consumer regulation), (3) strategy and competitiveness (tax structure, laws on competitiveness, strategies of competitiveness of local companies) and (4) the presence of appropriate, supportive industry. These elements are interconnected and impact on the companies and clusters. The diamond can be used to analyze the quality of the business environment at the regional and national level. (Kostadinović, Petrović-Ranđelović, 2013)

As a basic cluster features stand out: high interdependency of all members of the cluster; entering into strategic partnerships with customers and suppliers in order to achieve synergetic effect; clusters have a life cycle consisting of several stages (embryonic, growth phase, maturity phase, the phase of the dissolution); cluster development is under the influence of certain characteristics of the region (demographic, cultural, economic); the number of clusters increases with the level of economic development, as well as improving the competitiveness of the industry; cluster members are not competitors to each other, but together try to meet the needs of different partners.

Companies and institutions that are connected in clusters have some significant common features (Ketels, Örjan, 2006). One important feature relates to the proximity of the location, which means that all participants in the cluster must be close enough in space. Another important feature is the interconnection, which means that their activities must have a common goal, and the next characteristic is the interaction, which means that all the participants are close, and their active interaction is required. The fourth characteristic is the critical mass that is necessary or a sufficient number of participants, which will have a significant impact on the overall operations of the company.

Clusters are identified as the most relevant microeconomic factor affecting the development of a region and economic development of the regions in the EU is associated with a power level of the cluster. Around 38% of employees in the EU work in companies that are members of a cluster, which makes it an indispensable part of economic reality in the EU (CEC, 2008). The most important benefits of the association of companies in the clusters are: the increase in production volume; improve product quality; increase exports; cost savings; companies associating in clusters strengthen human resources; a higher level of specialization; diffusion of knowledge; greater flexibility (easier management of changes in the environment); better

environment for innovative activities, development and collaboration (cooperation); it's easier to solve the problems in business and make a small omissions in making some important decisions through better information exchange. (Arsić, *et al*, 2012)

Therefore, clusters produce positive effects, which influence the companies that are in it, and the whole region where they are located, by enabling: (1) increasing the number of jobs; (2) skilled workforce; (3) a greater variety of processes, products and work; (4) the diffusion technology; (5) decrease in inventories of materials and components; (6) a lower purchase costs; (7) specialized services; (8) expansion of markets and opportunities for new business connections; (9) management of large investment projects in the region, and the like. Depending on the characteristics of the enterprise participants and regions, clusters set their priorities, namely, using the resources of their region and establish formal links that enable the achievement of common goals. (Bošković, Kostadinović, 2011)

In addition to these advantages, there are some restrictions and barriers that have a negative impact on business clusters. As perhaps the most important obstacle to successful business cluster highlights the lack of funding for cooperation, then the lack of confidence in the cooperation partners, that is, in any kind of cooperation with other institutions, lack of knowledge and expertise of potential partners, as well as too many unrealistic expectations. (Arsic, *et al*, 2012)

There are different classifications of clusters, but here we present only the most basic types of clusters that are generally accepted.

The clusters are characterized by two-dimensions in the sense that present: (1) functionally defined systems of interconnected activities and (2) spatially defined systems of similar and related activities. Accordingly, one of the possible classification makes difference between clusters of functionally related system known as industrial clusters, and spatial groupings of similar and related businesses and industries, known as regional or local clusters (Bošković, Kostadinović, 2011).

Industrial clusters usually composed of participants, activities and resources, which are connected for joint development, production and sales of products and services. The fact is that they are not limited to urban areas, but are intended to encompass a broader scope, thus covering the entire country or nation. The aim of these clusters is to strengthen competitiveness in different sectors. Industrial clusters increase the productivity of companies and groups in its structure, and thus influence the creation of added value.

Regional or local clusters represent the spatial agglomeration of companies and other entities that perform the same or similar economic activity, creating a base that effectively stimulates spreading knowledge and creating different forms of learning and adapting. Unlike regional clusters, there are clusters that are spatially limited and that are more oriented to technical progress and innovation. (Micic, 2010)

In addition to industrial and regional clusters, there are also innovative clusters. These are clusters that are constantly evolving and adapting to changes in the environment. These clusters are exploring opportunities outside its current boundaries, combining inner strength, flexibility, stability and sense of management. Usually they are established to create new enterprises and increasing technological diversification. (Nordfors, 2003)

The simplest classification of the cluster is to: (1) horizontal clusters - partners at the same level in the chain of creating additional value that use a common market, technology, natural resources, and labor; (2) vertical clusters - connect companies from some industry and many industries in the chain of value creation; (3) regional clusters - the regional partners from the industrial sector; (4) clusters in the industry - partners in specific area of operations; (5)

entrepreneurial clusters - partners of SMEs and entrepreneurship and (6) international clusters - overlapping networks of industrial clusters. (Hopkinskon, 2003)

In modern conditions, creative clusters are more and more actual. In fact, they are one of the forms of support to development of entrepreneurship, based on connecting different entities that operate in the field of creative industries at the local level and that create an adequate environment that stimulates creative activity and creativity. (Kostadinović, Petrović-Randelović, 2013)

3. DEVELOPMENT AND STRATEGY OF INDUSTRIAL CLUSTERS

In establishing the clusters, it is necessary to respect the different procedures and strategies that are basic prerequisites for achieving the expected objectives of the clusters. Each country has a different approach to cluster development, different strategies and policies for the development of clusters, but regardless of that, it is necessary to make other conditions that are necessary for their development: the existence of an entrepreneurial culture and environment, and unconditional support of large companies, political support in the environment, existence of a strong scientific base in universities and other scientific research institutions, the ability of cluster members to attract professional and skilled labor force, the existence of the necessary office space, infrastructure, and production halls.

The key issue in the establishing and development of clusters is to define common goals. Only if you define measurable and achievable goals, implementation tasks of cluster development can be planned and all necessary actions and measures can be taken. It should be noted that the definition of objectives is a strategic task of management. In this regard, some general goals of the establishment and development of clusters are: a) establishment, development and use of common network to facilitate communication, exchange of information, and achieve the accessibility of the database; b) development of a joint strategy related to staff training and education, as well as the impact on political decisions essential to the operation of the cluster; v) facilitate the process of introduction and development of innovations and new technologies and d) expansion of the cluster or the introduction of new companies, as well as connect with similar clusters. (Volarev, 2010)

When the goals are precisely defined, the strategy of cluster can be formulated. It is of crucial importance, since it is determined by the necessary measures, as well as the way to achieve goals. For the strategy to be successful, that would give good results, all companies within the cluster should participate in its formulation. There are differences in its formulation and implementation, and they directly depend on the differences in the level of development of the region, as well as the level of involvement of the state in the development of small and medium-sized enterprises.

In principle, the strategy of the cluster must contain the following sections, or chapters: 1) analysis of the competitive situation in certain sectors; 2) structural SWOT analysis (macro-level, middle level and micro level); 3) analysis of trends (markets and technology); 4) international benchmarking; 5) analysis of the potential of the cluster; 6) the vision of the cluster; 7) the objectives of the cluster; 8) the definition of cluster activities; 9) the organizational structure; 10) by-step implementation strategy; 11) monitoring and evaluation; 12) action plan. (Scheer, Zallinger, 2008)

In order to develop the strategy of clusters following steps are recommended: 1) determine the representatives of enterprises ("clusterpreneure"); 2) implement strategic workshop with all companies and partners; 3) establishing a core team/working group for the development

strategy; 4) development of strategy; 5) implementation of further strategic workshops with all cluster members (feedback); 6) creation of the final version of the cluster strategy; 7) adoption of the final cluster strategy by all companies. (Gligorijević, Kostadinović, 2012)

Since the strategy of clusters identified, it must be converted into concrete measures and activities. A useful instrument for the implementation of the strategy is an action plan that is base for operationalization of the objectives and measures which were formulated in the strategy. The action plan is created when specific activities are derived from the objectives of the strategy. Then the activities are assigned to specific individuals responsible for their implementation. (Ilić, 2004)

In the recent literature, special attention is paid to the cluster as the growth strategies of regional economies. Usually the following strategies or a combination of them are recommended: the original cluster strategies, transplanted strategies of foreign companies and hybrid strategies. Each of these strategies has its advantages and disadvantages. (Legendijk, Charles, 1999)

Original strategies require economic base, capable, in depth and breadth, to promote the development of the identified clusters by: information support, increased interaction among local firms, adapting infrastructure and the development of necessary labor and human resources potential. Transplanted cluster strategies are based on the use of the experience and support of foreign companies and major suppliers and other companies in the business environment. These strategies often use the combined effects of foreign investors and domestic local companies. A hybrid strategies are based on a combination of the previous two types of strategies, on the successful use of the experience and financial support of foreign investors and the advantages of local potentials and local firms. Successful gathering of foreign and domestic partners, often forms the basis of cluster development.

4. SPECIFICITIES OF IT CLUSTERS

An IT cluster encompasses small, medium (SME) and large enterprises in a region that produce IT products and services. These enterprises are related with each other and with public institutions, like educational institutions. IT clusters are a significant type of technology clusters that represents most of the successful clusters on the global bases. For example, the IT clusters have a 0.8% share in United States of America's employment (Porter, 2008). Also the two IT clusters in India (Bangalore and Hyderabad) are composed of over 3000 companies. (Leleur, 2009)

Intensive use and implementation of many information technology services and products causes the success of IT clusters. The market of these products and services requires better hardware devices and software solutions. The specificity of manufacturing process of IT products and services are:

- the production process of software products is developing software solution and creating copies of the solution with near zero costs; this production process is different than production process in classic industries.
- the production process of IT devices is similar to the production process in classic industries, but the costs are very small because the level of technology and the extent of producers is very high.

IT clusters produce IT knowledge as patents and innovations, services and products, mostly software. Criteria for IT clusters classification are their products and main activities, so there are IT clusters that generate low-value IT services and IT clusters that generate high-value IT

activities. The first type of IT clusters such as Bangalore IT Cluster creates low-value IT services (D' Costa, 2003). Enterprises in this type of IT cluster are mainly outsourcing activities for large firms because they offer professionals at relatively low costs. IT clusters that organize high-value IT activities such as Silicon Valley, Cambridge Technology Cluster etc. produce innovative products and new technologies.

IT clusters have intensive relations to research and university centers. Resources such as a raw material, workforce or market are not so significant as for a classic industrial cluster. The most important resources for a high value IT cluster consists of the innovative idea, the knowhow or the technology (good example is Google) and the financial assets required to invest in the IT firms in order to generate revenue.

Knowledge and research are significant resources for an industry based on technology. The following model (Etzkowitz, 2008) represents three elements significant for an IT cluster:

1. the educational system particularly universities generating high-skilled human resources;
2. the research centers, public and private, developing new technologies;
3. the government promoting and creating conditions for IT cluster development (improving the infrastructure and making appropriate fiscal and administrative policy).

The IT industry has some specificities that determine the success of IT clusters. In the IT industry the essential resource is the technology and knowledge (the knowhow). The resources could be acquired so the technology gap between members of a cluster can be decreased. The high skilled professionals required to develop new technologies also could be acquired from the cluster members. In order to be competitive, enterprises from IT clusters have two solutions: 1) to achieve a high level of innovation and to be leader in developing new technologies; 2) to specialize in producing specific products and services and to be the leader in that market segment through continuous innovation.

From this perspective, Silicon Valley and Boston IT clusters consists of well known IT firms that produce the specialized products. However, there are low value IT clusters like the ones in India or China that consists of firms which are successful in reducing production costs and improving quality of their products and services. These IT clusters provide external services to other large enterprises that control its development.

5. FEATURES AND RESOURCES OF IT CLUSTERS DEVELOPMENT

Characteristics and specificities of IT clusters depend on features of IT cluster business processes and products. The main resources committed in IT cluster business processes are: 1) a highly skilled IT specialists generated by a higher-education system; 2) a good financial regulations and conditions created by government; 3) venture capital invested by large IT enterprises extending or relocating their production. (D' Costa, 2002)

The development and success of an IT cluster depends on innovation. The comparative analysis (Saxenian, 1994) between the two IT clusters in USA shows this dependence. California's Silicon Valley and the Route 128 corridor near Boston had the same conditions considering strong research and university centers, public military projects funded by government and many entrepreneurial initiatives. However after some period of time, Route 128 stagnated and Silicon Valley increased innovations and continued to grow.

Another significant factor influencing the success of an IT cluster is the level of collaboration and sharing information between IT cluster members. The transfer of information is made directly through collaboration or by buying technology. Collaboration and information

transfer can be achieved by: 1) analyzing competition products and services and replicating them (a technology solution can be protected by copyright laws but the idea behind it becomes public information); 2) allowing free movement of professionals between enterprises enabling the transfer of technical knowledge, skills and experience).

As we mentioned previously, IT clusters are based on technology and innovation and require highly skilled and qualified specialists that have knowledge to develop and use the technology. Strong university and research centers can obtain these conditions and human resources. All three most successful IT clusters, Silicon Valley, Boston Route 128 and Indian IT cluster are placed around university centers like Stanford, MIT and Bangalore.

High-education and research organizations obtain highly skilled professionals, develop new technologies and create entrepreneurial initiatives. Except just obtaining highly skilled professionals, the university and research centers have a crucial role on establishing technology spin-offs. The spin-offs are the significant factors for creating an IT cluster initiative and for reinventing it.

The cost of hiring high qualified specialists from other regions is not so high comparing it with reached high levels of innovation and business performance. This is the case of Silicon Valley and the Boston IT cluster, having human resources policy to attract high qualified professionals.

Material resources are not so important factor for an IT cluster success. For example transportation costs are so low considering software products. IT cluster For hardware products or devices, the IT cluster has components producers and enterprises that assemble the final product. In that case, all members of IT cluster have benefits from the proximity.

Members of an IT cluster can provide technology, patents, ideas on following ways: own development in R&D department, partnerships with research centers. Success of IT cluster is based on its innovative capability. Low-services IT clusters have the outsourcing as the crucial activity and financial factors, such as the cost of labor significantly influence the cluster development and success.

IT clusters must innovate in order to be in trend with new technologies and to maintain its development. This is particularly true in case of high-value IT clusters. On the other hand, low-value IT clusters have to reduce costs and hire skilled IT professionals in order to provide outsourcing agreement from large firms. Therefore, resources significant for different types of IT clusters are:

- Main resource for high-value IT clusters is the knowledge in form of a patent or high-skilled professionals developing hardware devices and software solution;
- Main factor for low-value IT clusters is the cost, particularly cost of labor;

The low-value IT cluster can be transformed into a high value IT cluster if it acquire four factors entrepreneurs, software engineering talent, availability of capital and access to markets. (Kela 2009)

Whereas knowledge is crucial resource in the IT cluster, the aggregation of enterprises in the cluster results in knowledge spillover. The simple transfer of professionals does not always means acquiring appropriate knowledge. IT professionals gain knowledge, experience and improve the innovation process. By transfer to another enterprise in the cluster, they bring this knowledge with them. Therefore development IT clusters depends on the knowledge spillover

Another criteria for classification of IT clusters is connection with market elements. IT clusters do not depend on their location in context of closeness to the customer. However the

most IT development processes or services are not tied to particular geographic location and market. IT clusters are not “local industries” in many cases. IT clusters are mainly horizontal clusters because there is not entirely vertical chain of production on a regional level and the market is located in different geographic locations. In addition enterprises that create IT clusters very often specialize in different market segments. For example, the most firms in Silicon Valley that create technologies and IT solutions are specialized in specific types of products and services. Enterprises that create low-value IT clusters try to get more outsourcing contracts or to improve the relation with their clients and business partners such as larger IT firms. IT clusters are horizontal in nature because the market for IT products is not localized in a particular region.

Using accepted (Marcuse, 1996) industrial clusters categorization, IT clusters can be divided in following types:

- Hub-and-spoke IT clusters where one large enterprise has many small suppliers (the example of this type of IT cluster is the Seattle cluster where Microsoft makes business with small enterprises providing IT services.
- Satellite IT clusters where multinational IT companies move their production in low-value IT clusters in India and China to minimize their costs. High-value IT clusters belong to this category and they are located near significant research and university centers. Central or local government may make conditions for creation of this type of clusters through technology parks. Typical case of this category of IT cluster is the Cambridge Technology Cluster.
- State-centered or state-anchored, IT clusters are found around governmental institutions, like military research labs or state universities, that receive large budgets for research and development.

6. CONCLUSION

In the current turbulent global environment, it is difficult to provide a competitive advantage, and even survive in such conditions. The most common and best answer to this question provides a process of connection, association of small and medium-sized enterprises in clusters. What clusters can provide to small and medium enterprises, which is of great importance to them is: the capital, which is necessary for investment; product quality and innovation; speed, which is necessary for adaptation to changes in the market; flexibility, enabling them longer survival in an increasingly demanding market. Also, clusters provide them great support and enable them to enter the international market, where they can offer their products and achieve significant results, which independently would not be able to achieve.

The specific type of industrial clusters are IT clusters. Investment in IT industry is increasing because of intensive use of IT in economic, social and public activities. The development of technology and the integration of IT solutions in economic and life activities gives incentives to IT cluster implementation. Successfully created IT clusters have positive influence on economic development of every the country. This fact means that governments should define macroeconomic strategies and politics that will create appropriate conditions for IT clusters development.

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LABOR PRODUCTIVITY AND ECONOMIC GROWTH IN SELECTED SEE COUNTRIES AFTER THE GREAT RECESSION OF 2008

Predrag Trpeski¹

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Abstract: *The aim of this paper is to analyze the labour productivity and economic growth in countries from South Eastern Europe in the period after the Great Recession of 2008 and to examine the interdependence between labor productivity and economic growth. Labor productivity is one of the factors that determinate the economic growth and one of the reasons for differences in economic development among countries. For that purpose, the labour productivity in selected SEE countries will be calculated. Boosting employment and productivity are among the key objectives for policymakers in the countries. Economic recovery strongly depends on productivity increase during the crisis and after a period of time it results in economic growth. The results show that the relation between the labour productivity and economic growth is not stable. Between 2000 and 2008 labour productivity provided solid support for growth. Since the global financial crisis broke, labour productivity growth has fallen.*

Keywords: *labor productivity, economic growth, South Eastern Europe*

JEL Classification: *J 21, J 24*

1. INTRODUCTION

Economists argue that there are only two avenues by which states can increase their level of economic output: either through more labor effort applied in the production process (specifically, more jobs) or through increases in the productivity of the workforce. As labor force growth slows and unemployment remains at relatively low levels, states increasingly must look to productivity enhancements in order to maintain the high rates of output and income growth that have become commonplace over the past few decades. Although the reasons for differences in the level of economic development among countries are numerous, generally, we can start from the assumption that differences in economic development are due to differences in productivity and factors that do not determine it: physical capital, human capital, natural resources and technological knowledge. Labour productivity and economic growth are key factors in any economy. Productivity provides a simple, but powerful indicator of the ability of a country, sector or company to optimally use its resources to drive growth. In the long run, the only way to increase economic growth and raise living standards is through increased productivity. Labor productivity is one of the indicators that show how efficiently labor force is performing. A productive labor force possesses obligatory as well as additional dexterity and has the ability to improve the overall the economic growth of a nation.

Economists recognize the importance of the difference in productivity growth rate of 1% or 2% very well, while the non economists, even people from the business sphere may seem these rates approximately as same. How important is the rate of productivity growth can be seen from the famous *mathematical rule 70*. According to this rule, if the number 70 is

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divided by the productivity growth rate, it will be derived years needed for real output per worker to be doubled. Hence, if the productivity growth rate is 1%, it would take 70 years for real output and, hence, real income per worker to double. If the rate of productivity growth is 2%, then the required period halves at 35 years and with a growth rate of 3%, the period is 23.3 years.

Economic recovery strongly depends on productivity increase during the crisis and after a period of time it results in economic growth. If the level of productivity stagnates or declines during the crisis, it results in a longer and deeper crisis and slower recovery. From a broader perspective, increased productivity increases the power of an economy through driving economic growth and satisfying more human needs with the same resources. Increased gross domestic product (GDP) and overall economic outputs will drive economic growth, improving the economy and the participants within the economy. The significance and importance of a high growth in labor productivity is enhanced by a number of key processes and with the phenomenon economic development. Current economic studies see labor productivity as a central problem of understanding the economic development. By definition, labor productivity is a ratio of real GDP and the number of employed persons (or the number of worked hours). Hence, the growth in productivity is also driven by the only macroeconomic variable – real GDP per capita or the change in the specific age population (Kitov and Kitov, 2008).

Labour productivity and economic growth are strategic factors in any economy nowadays. It is related to the fact that labour productivity depends on the availability and quality of labour resources and applied technologies. Hence, labour productivity is highly correlated with entrepreneurship and economic activity in the economy, specialization, unemployment, competitive advantage etc.

The question whether there is a strong relation between labour productivity and economic growth is unclear. Hence, the goal of the paper is to analyse the recent trends of labour productivity and economic growth in post-crisis period in comparison with the trends in pre-crisis and crisis periods. The paper is focused to answer the research questions: do both labour productivity and economic growth rate increase or decrease in post-crisis and have these indicators a strong relationship between them.

2. LITERATURE REVIEW

The studies and problems related to the labour productivity in various phases of economic cycle (for example, in the post-crisis period) are relatively uncovered topic in economic literature and it can be mostly noticed when specific countries are investigated regarding these issues. According to Krugman (1990) the three most significant elements for the economy overall are productivity, income distribution and unemployment.

Topel (1999) reviews recent developments in growth economics, with a particular focus on labor market and human capital issues in order to interest labor economists in problems of economic growth, and especially to motivate empirical research. He provides a simple model that incorporates many of the stylized facts about labour markets during periods of rapid economic growth.

Landmann (2004) analyses the links between employment, productivity and output growth and traces the changing nature of these links over different time frames.

An elevated rate of the growth in labor productivity in the 1990s was considered by Blinder and Yellen (2002) as the driving force of the excellent economic performance. For the link to

the growth in real GDP per capita, Campbell (1994) and Pakko (2002) reported that a decrease in the growth rate of productivity rate results in increasing in employment and output.

By definition, labor productivity is a ratio of real GDP and the number of employed persons. Hence, Kitov and Kitov (2008) found that the evolution of labor force participation rate is controlled by real GDP per capita as the only driving force.

Rudolf and Zurlinder (2009) examine the sources of economic growth in Switzerland over the period 1991–2005. They decomposed the growth in output and the growth in average labour productivity and found that the results for Switzerland are similar to those for most other European countries.

Auzina-Emsina (2014) found that the economic recovery strongly depends on the productivity increase during the crisis and after a certain period of time (transition period) it results in an economic growth. If the level of productivity stagnates or declines during the crisis, it results in a longer and deeper crisis and slower recovery. Therefore the existence of the lagged (transition) effect should be taken into consideration when labour productivity and economic growth relations are analysed.

3. METHODOLOGY

One of the basic issues in the examination of the relationship between economic growth and productivity is setting the methodological concept of productivity. Therefore, for the purposes of labor, there will be distinguished several different concepts of productivity, such as: 1. partial vs. total factor productivity; 2. output per worker vs. output per working hour; 3. the level of productivity vs. productivity growth rates and 4. cyclical behavior of productivity.

Essential for this paper is to make a difference between partial productivity and total factor productivity. Partial productivity refers to the productivity of the individual factors of production, or it is defined as the ratio between output that is obtained by engaging the appropriate factor of production and the amount of involved units of that factor. Best known partial measure of productivity is labour productivity. Total factor productivity known as 'Solow residual' refers to the increase in output that can not be explained by the increase in factors of production, capital and labor, i.e. it is the increase in output as a result of technological progress. Total factor productivity, primarily depends on technological improvements in the production of goods and services as well as improving the skills of workers, but also by other factors - investment in the commercialization of new products, reduction in prices for some important inputs, etc. (Fiti 2009, p. 133-136).

The aim of this paper is analyzing the partial productivity, i.e. the labour productivity.

Labour as an input to the production of goods and services can be measured in two ways: as the average annual number of employees or as the total number of working hours per year. The second way of expressing labour as an input in the production process is more suitable for determining the labor productivity. But in the calculation of productivity it should be clearly define how the labor as an input is measured. It is important because growth rates in output per worker and per working hour can be quite different depending on how many overtime hours are there in the economy. Hence, the comparison of labor productivity in international frameworks should be done very carefully and should be always taken with some degree of reserve because there are large differences in the number of hours that an employee realizes annually among the countries in the world. For example, a worker in the United States realize annually more hours than workers in any European country. Hence, in

the United States measurement of productivity based on output per worker expresses productivity in a better way than measuring productivity through the relevant measure - output per worked hour. For example, in Norway in 2001, GDP per employee amounted 81.5% of GDP per employee in the US, but 110.6% of GDP per employee, calculated on the basis of a working hour. The difference is 29.1%. In the Netherlands, differences in productivity calculated by the two measures are great and amounts 28.4%, i.e. 73.4% of the level of productivity in the United States measured on the basis of output per worker, up to 101.8% of the productivity in the United States determined by working hours (Sharpe 2002, p. 34-35).

For the purposes of this paper, the output per worker will be taken as an input for calculating the labour productivity and that is for two reasons:

First, it is simple to calculate the productivity for a longer period of time, which is quite important because for our research longer series of movement in labour productivity are used;

Second, the overtime work or overtime working hours in the past period, for example in Macedonia are quite rarely and incompletely registered.

It is also very important to make a difference between the level of productivity and productivity growth rate. The level of productivity shows how much GDP per worker is accomplished in an appropriate year, while the growth rates of productivity show the change in two different periods.

For this study, the countries that are most appropriate are selected, exact time periods or phases of economic cycles for the selected countries (pre-crisis, crisis, and post-crisis) are defined and the trends of labour productivity and economic growth in various phases of economic cycle are analyzed. The following indicators are used in the study: 1. labour productivity per person employed; 2. labour productivity (% change in comparison with the previous year); 4) real GDP (% change in comparison with the previous year).

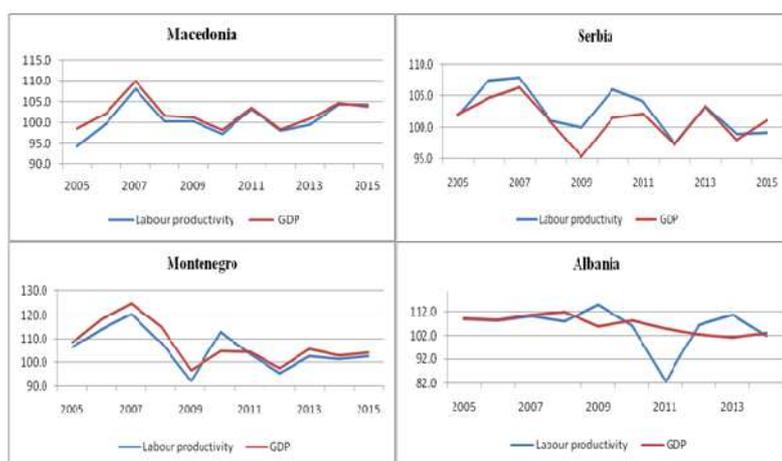
4. RESULTS AND DISCUSSION

During the last ten years, South-Eastern Europe has been going through major transformations. The region has attained important progress in economic development, regional cooperation and integration in the global markets. However, the financial crisis that affected the western markets in the second half of 2007 made it clear that the region would face a major economic slump (Sanfey, 2010). This region has also been negatively affected by the crisis. The reason why these countries are analyzed in the paper is the fact that the economies of the SEE region have been seriously affected by the global recession, in fact more than other regions in the world. As expected, the economic crisis led to a decrease in the level of employment in the area, too (Vass and Alexe, 2012, p.38).

Following figures are presenting the annual changes in GDP and labour productivity in four selected countries in SEE (Macedonia, Serbia, Montenegro and Albania³) by using the chain index.

The dynamics of the countries' real GDP show that the largest economic activity and largest annual real GDP was in 2008. In 2015, all these countries had smaller real economies in comparison with 2008 when the crises occurred. Their economies continued to recover in 2015 whereas Serbia had the smallest growth (Table 1).

³ There are not official data for GDP for 2015



*Because of limited data labour productivity for Albania is calculated based on data for number of employees from Bank of Albania for the period 2004- 2010, and the data from Institut of Statistics in Republic of Albania for the period 2011-2014

Figure 1 Annual change of GDP (official currencies) and Labour productivity from 2004-2015 in selected SEE countries

Source: National Bank of the Republic of Macedonia; National Bank of Serbia; Central Bank of Montenegro; Bank of Albania*; Institut of Statistics in Republic of Albania*

Before the crisis, growth rates of capital accumulation had been supported by large capital inflows, domestic credit expansion and low interest rates, and moderated as these inflows declined in the post-crisis period. Labor, measured by the broad proxy of working age population, has played a minor but steady role (World Bank, 2016).

Productivity dynamics have deteriorated significantly since the global financial crisis (Figure 1).

Table 1 shows the annual dynamics of the indicators selected (labour productivity and GDP) in four selected countries. The data show that during the economic growth period (2004-2007) the labour productivity follows the dynamic of the economic growth, i.e. both had a positive trend. Only in Macedonia in 2005 and 2006 the labour productivity growth had been negatively (the GDP growth is smaller than growth in number of employees), but beside that it had a positive trend (Table 1)

Table 1 Labour productivity and GDP dynamic in the pre-crisis, crisis, and post-crisis period

Labour productivity annual change	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Macedonia	-5.6	-0.2	8.1	0.2	0.2	-2.8	3.3	-1.9	-0.5	4.3	4.3
Serbia	1.9	7.4	7.8	1.1	0	5.9	4	-2.6	3.4	-1.1	-0.8
Montenegro	6.6	14.1	20.3	8.3	-7.8	12.9	3.6	-4.6	2.6	1.6	2.8
Albania*	8.9	8.2	10.2	7.9	14.7	6.2	-17.1	6.5	10.5	2	/
GDP annual change	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Macedonia	-1.4	2.3	9.9	1.6	1.2	-1.8	3.5	-1.6	0.8	4.6	3.9
Serbia	2.1	4.7	6.3	0.9	-4.7	1.5	2.1	-2.7	3.3	-2.1	1.2
Montenegro	8.7	18.4	24.7	15.1	-3.4	4.8	4.5	-2.6	5.7	2.8	4
Albania*	9	8.5	10.6	11.9	5.9	8.4	4.9	2.5	1.3	3.3	/

Source: Authors' calculations

In the crisis period Macedonian growth rates were rapidly interrupted towards the end of 2008, and GDP even fell in 2010, before recovering in 2011 and then slightly falling again in 2012. The economy of Serbia in 2009 recorded a negative growth of GDP of 4.7 percentage points, and in 2010 there was a slight recovery of Serbian economy. GDP growth slowed down for Montenegro, too and in 2009 turned negative, but Albania remained positive. During the crisis period the level of labour productivity is relatively unstable.

In the post crisis period labour productivity follows the dynamic of GDP growth. The level of labour productivity is higher than its level in crisis and pre-crisis period, but the growth during the post crisis period is smaller from one year to another than the previous periods.

The highest increases in labour productivity can be found in the pre-crisis period. If the dynamic of the level of GDP is analysed it can be concluded that the highest positive changes are found in the pre-crisis period, too.

The results argue that the relation between the labour productivity and economic growth significantly differs and it is not a constant or stable relation over the periods of time. The analyses show that there are weak relations between the labour productivity and economic growth in the crisis period and the post-crisis period. It argues that economic crisis heavily influenced productivity.

5. CONCLUSION

During the last ten years, South-Eastern Europe has been going through major transformations. Even though the banking system was not directly exposed to “toxic assets”, the crisis has been transmitted through indirect channels (Bartlett and Monastiriotis, 2010). The economic crisis led to a decrease in the level of employment in the area, too.

The economic growth is positive in 2011 and the average growth of the whole region is on a positive trend in 2015. In fact, when an economy is coming out of recession productivity tends to rise more rapidly because labour gets used more effectively and when an economy slows, productivity declines or grows more slowly. The Great financial and economic crisis has influence on these relations. Mainstream economics sees labor productivity as the central problem for the understanding of economic evolution. One may also conclude that all attempts to place labor productivity in the center of conventional theories of real economic growth are practically worthless. Productivity is not an independent variable, which can be influenced and controlled by any other means, not only by demography.

The results show that the relation between the labour productivity and economic growth over the three periods is not a constant or stable. Labor markets dynamics and human capital accumulation seem to have contributed little to regional growth in the past 15 years. Between 2000 and 2008 labour productivity, i.e. how efficiently inputs of labor are used in production, provided solid support for growth. Since the global financial crisis broke, across the region labour productivity growth has fallen, often subtracting from growth.

However, the increase of the labour productivity during the crisis is a significant driver of the economy after a period of time. As labor force growth slows and unemployment remains at relatively low levels, states increasingly must look to productivity enhancements in order to maintain the high rates of output. Then, how to achieve productivity gains?

The most frequently answer is to provide better technology to employees so that job operations become more efficient. But, some researches have shown that the labor force, as a whole, has not adapted to the changes, resulting in low-skilled workers. Therefore, some recommendations for productivity gains are: states must create a unified workforce

development system; workforce development must be recognized as a core economic growth strategy; government leaders should also investigate methods to promote workforce training, either through improved education or through solidly managed, unified workforce development systems; since it benefits both business and government to have a more productive workforce, partnerships between the two must be established to determine the most effective ways to increase productivity; eliminating disincentives and barriers to formal employment; deepening regional and global integration; improving the business climate and governance, etc. Either through skills partnerships, support of technological advancements, or through other means, policy makers must turn their attention to increasing the productivity of countries' labor force.

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THE EFFECT OF GLOBALIZATION ON CAPITAL MOBILITY: EMPIRICAL EVIDENCE FROM EMERGING MARKETS

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Nemanja Lojanica³

Abstract: *This paper attempts to address the effect of globalization on capital mobility with special reference to emerging markets. We decided for these countries, because the emerging countries are highly integrated into the global markets, and play very important role in the capital flows. Classical econometric approach, such as cross-sectional OLS regression analysis has been used in order to determine potential relationship between the rate of domestic savings and the rate of domestic investment. The empirical findings indicate that, in 2014 this relation is weaker than in 1980. Our result is in line with the premise that, as a result of globalization, capital mobility tends to increase by the time.*

Keywords: *globalization, capital mobility, emerging markets, OLS regression*

JEL Classification: *F 41, F62, E 22*

1. INTRODUCTION

With the collapse of the Bretton Woods system of fixed exchange rate, countries were able to open themselves towards higher capital mobility. Deregulation, privatization and advanced technology have made foreign direct investments extremely attractive. A boom in foreign direct investments and flows of securities has been also present in emerging markets. Financial globalization allows capital flow to developing countries. In addition, the financial integration of developing countries serves as an important catalyst for numerous indirect benefits which include: the development of a domestic financial sector, improved operations of institutions and more adequate macroeconomic policy. On the other hand, financial globalization brings certain risks. These hazards occur when countries open themselves and when there is a risk that financial globalization and crisis would interfere. It should be noted that there is no a strong correlation between the globalization and financial crises, because the crises occurred simultaneously with economic integration and economic disintegration.

The primary aim of this paper is to examine the effects of the financial globalization through adequate theoretical analysis by observing the importance of the foreign direct investments in the structure of capital flows. Also, the aim of this paper is to examine the effects of the globalization process on capital mobility in emerging market through empirical analysis. Consequently, this paper will test the following hypothesis:

H: Under the influence of the globalization process capital mobility is becoming more present in emerging markets.

As an adequate methodological framework, the index of capital mobility levels introduced by Feldstein and Horioka (1980) has been used. The paper, in addition to this introduction, also

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includes the following chapters: Literature review, in which the directions of foreign direct investments and the tendencies in capital flow during global crisis are explained, Data and methodology, where the variables and adequate methodology for this analysis is presented, Results and discussion, which reveals the most significant results concerning estimated coefficients of regression analysis, and Conclusions and recommendations, where results are summarized and discussed from the perspective of global implications.

2. LITERATURE REVIEW

During the period after the World War II, the majority of governments in capitalist economies decided on strict control of capital and only after that the capital began to flow between the countries. The control of capital flow was exercised through the introduction of taxes, administrative limitations and permanent bans. Recently, these countries opened their capital accounts. The measurement of capital mobility level is a very controversial issue. There have been the suggestions that the level of effective integration of a capital market should be measured with a convergence of private rate of return on capital between countries (Harberger, 1980). On the other hand, Feldstein and Horioka (1980), Frankel (1989), Montiel (1994), observed the behavior of savings and investments in individual national economies (will be explained in more detail in the sequel). Monetary regimes and regimes of exchange rate were chosen as adequate framework for the evaluation of capital mobility rate (Alessina *et al*, 1994, Rodrik, 1998, Klein and Olivei, 1999). The biggest step forward was made by Quinn (1997) whose index allows us to test connectivity liberalization of capital accounts and economic performance.

In real environment, the investors who invest their funds in small open economies require international interest rates and also additional income called *risk premiums*. There are several reasons for the introduction of risk premium such as for example: wars, bankruptcies, nationalizations. For example, during economic crisis in southeastern Asia 1997-1998, the capital flow towards 'Asian tigers' Indonesia, Malaysia, South Korea and Thailand was suddenly stopped causing significant shift in domestic consumption and investments in these countries. They were no longer able to finance their current account deficits. After these events, investors lost confidence and trust and the risk premiums increased significantly.

Global crisis has determined capital flow trends to a great extent. After they reached record level in 2007, the capital flow suddenly stopped and the capital started to move back to the countries which make the core of global finances and where the epicenter of the crisis actually was. The composition of reserve currency in the world changed. The share of American dollar and euro in reserve currencies was reduced while the share of other currencies increased. Temporary recovery started in the second half of 2009 and was followed by the support of key central banks in the developed countries. But instability remained high and new problems emerged in the second half of 2010. This time the problems were concentrated in the European countries which use euro as currency. The developing countries had another wave of capital inflow from the second half of 2009 and after that there was another turnaround during 2011 when European debt crisis increased. Global finances have been still following sudden changes.

The significant global imbalances in trade and capital flow had preceded financial crisis of 2007. This applies especially to the USA where not only the "origins" of the crisis were but it was also one of the economies which relies on the capital inflow to finance increasing trade deficit most. Many experts had claimed, before the crisis, that eventually the countries with deficit, like the USA, would face reduced capital inflows and that foreign exchange rates and

assets prices would decrease during the adjustment period. However, the crisis turned out to be quite different with capital inflow from both domestic and foreign investors towards the USA from 2008-2009 especially after the collapse of Lehman Brothers. The impressive fact about the crisis is not only its global range but also the high heterogeneity which had an influence on different countries in both developed and emerging economies. Some emerging economies experienced massive inflows of portfolio capital from 2009-2011. On the other hand, there was a growing concern about the sustainability and the potential effects on national economies, exchange rates and capital market. Policy makers in emerging economies have emphasized the importance of “pushing” monetary and fiscal policies in developed countries which were to blame for waves occurring in capital flows. On the other hand, some have emphasized the factors of “withdrawal” such as real differences between emerging economies and developed economies which are main carriers of the current patterns in capital flow. In fact, this controversy has become one of the key issues for discussion at the international forums (Fratzscher, 2012).

Capital concentration under the influence of global crisis will be observed from the perspective of capital flow during the period from January, the 1st, 2007 to January, the 1st, 2011 with special emphasis on four key dates in this period. Figure 1 shows the dynamics of capital flow during the crisis in the developed and emerging economies. Four key events which had important effects on capital flow are:

- The beginning of the liquidity crisis from August, the 7th, 2007 when the markets experienced liquidity problems for the first time,
- the collapse of Bear Stearns on March, the 15th, 2008,
- the collapse of Lehman Brothers on September, the 15th, 2008, and
- and increased debt crisis in Europe on March, the 15th, 2010 (the exact date is hard to determine).

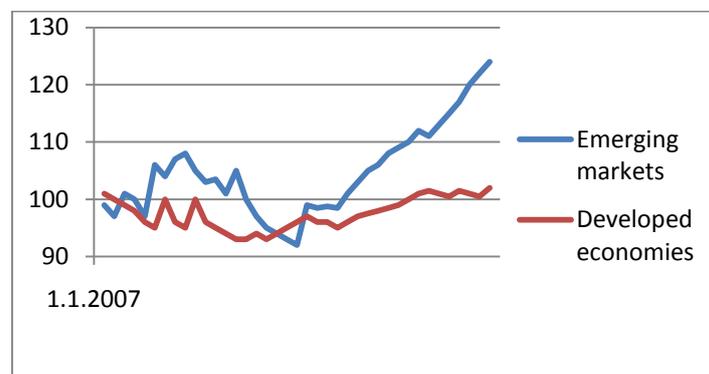


Figure 1 Capital flow during the crisis

Source: Fratzscher, M. (2011)

The Figure 1 reveals several striking facts. First, there is a complete difference in capital flow between the developed and emerging economies. Overall, in the developed economies there was a constant net capital outflow from the beginning of the crisis. Net portfolio outflows slowed down after the collapse of Lehman Brothers. On the other hand, the beginning of the crisis had negative consequences on net inflows of capital in the developing countries because net inflows had been positive until July, 2008 and then they had fallen significantly before the collapse of Lehman Brothers. From this we may conclude that the global crisis has influenced the increase in capital concentrations in the world, i.e. under the influence of the crisis the

capital began to return towards the developed economies and the developing countries were significantly affected because they were dependent on foreign capital flows. The remainder of the paper emphasizes some general guidelines in capital flow which are the consequences of the globalization process.

The globalization, defined as growing interdependence between economies, has been confirmed by growing intensity of capital flows on international level, especially when private capital flows towards developing countries which intensified during the 90s are observed. The tendency of change in the structure of private investments where dominant position is taken by foreign direct investments at the cost of portfolio investments and bank loans is also noticeable (Milovanovic & Veselinovic 2009). Foreign direct investments occur in the form of mutual investments or full ownership. Foreign direct investments (FDI) are a component of a financial account of each country. They represent investments of foreign means into domestic structure, equipment and organization. FDI does not include foreign investments on domestic stocks. FDI has been regarded more useful for a country than capital investments because capital investments can mean “hot money” which leaves the country at the first sign of danger (OECD, 2013). It is clear that big role in their placement is played by multinational companies which represent leading entities in forming world domestic product and whose power is reflected in enormous economic power and activities of global ranges, internationalization of activities from research to immediate placement. The advantage of FDI is reflected in the fact that investors bring new technologies, *know-how* together with capital which they invest. Since they involve technology transfer and they are usually carried out by multinational companies, they are of special interest. Their significance has been growing recently which can be seen in the Table 1.

Table 1 International investments in selected years

FDI/GDP	1970		2014	
	Inward	Outward	Inward	Outward
World	0.39	0.42	1.69	1.85
Developing economies	0.67	0.01	2.61	1.86
Transition economies	0.00	0.00	1.84	2.53
Developed economies	0.40	0.60	1.09	1.80

Source: United Nations Conference on Trade and Development, UNCTAD *Stat*

At the global level, FDI has been constantly growing during the last 30 years of the 20th century, with occasional drops at the beginning of the 80s and 90s. After the very dramatic increase of FDI during 1999 and 2000, there was a dramatic fall in FDI flow during 2001-2002. The reasons for a drop in FDI in this period are seen in low rates of economic growth, disturbances in financial markets and speed decreases in privatization in many countries. During the period from 2000-2002, there was a decrease in “departure” of FDI from national economies by 9% which meant the realization of 647 billions of dollars of FDI. This decrease does not apply only to countries of Central and Eastern Europe where the growth of 20% was detected in terms of FDI “departure”. In the period from 2007-2012 there was a fall in FDI flow under the influence of the crisis by about 32%. Here we have a tendency of growth in FDI flow towards the developing countries by 20% and a fall in the developed countries by over 50%. In terms of sources and destinations of FDI, the data clearly indicate the variety and geographical inequality (Table 2). The most important sources of FDI were the USA with over 328 billion dollars which was over 2% of their GDP. The USA was followed by Germany, France, and Switzerland. Of non-European countries, there were China, Canada and Russia. Thus, two countries of the BRICS were at the list of top ten FDI sources.

Table 2 Sources and destination of FDIs - in billions of dollars and percentage of GDP in 2010

Country	FDI inflow	%GDP	FDI outflow	% GDP
China	105.74	1.80	68	1.16
China,Hong Kong	68.90	30.42	76.08	33.59
Brazil	48.44	2.35	17.14	0.8
Singapore	38.64	17.96	25.29	10.7
Saudi Arabia	28.11	6.46	3.69	0.7
India	24.64	1.52	15.38	0.9
Mexico	18.68	1.82	14.72	1.4
Chile	15.09	7.32	9.35	4.3
Indonesia	13.30	1.88	2.89	0.4
Turkey	9.07	1.21	1.46	0.2

Source: Worlda Bank, World Development Indicators (2015)

The most important destination of FDI among developing countries was China with 105 billion dollars (China had a surplus in terms of inflow an outflow of FDI of above 37 billion U.S. dollars). Three countries of BRICS were at the list of the top FDI destinations (China, Brazil and India). The amount of FDI in Singapore was 17.96% of its GDP. In Brazil, Singapore and Mexico, the reduced inflow of FDI was detected with respect to 2000. In terms of capital flows and globalization, we can say that the capital was concentrated in the world leading economies. Still, we have to indicate the changes in capital flows, i.e. on the occurrence of new FDI sources and destinations such as transitory countries and countries of Eastern Asia, including China as potential leading economic force of the 21st century.

3. DATA AND METHODOLOGY

Under the influence of the globalization process, the degree of international economic integration has changed to a great extent. The Figure 2 has shown trade integration during the period 1980-2013 on the global level and in the developing countries. Trade openness is normally seen as a sum of total import and export in respect to GDP. It is observable that there has been a significant degree of trade integration on the global level, where trade openness is almost doubled while the degree of trade integration in the economies in transition is even more emphasized and is now five times higher than in 1982.

In an open economy where international capital mobility is present, domestic savings S_t can be used to increase domestic capital stock K_t , or is used to increase foreign sources F_t , through foreign direct and portfolio investments. Consequently, according to Sorensen and Whitt-Jacobsen (2005), intertemporal budget limitations of domestic consumption can be presented as:

$$F_{t+1} - F_t + K_{t+1} - K_t + \delta K_t = S_t \quad (1)$$

where S_t is gross domestic savings in the time period t , $K_{t+1} - K_t + \delta K_t \equiv I_t$ are gross domestic investments in the given time period while $F_{t+1} - F_t$ is the growth of stock net sources abroad in the time period from t to $t+1$. Capital import is thus the difference between gross domestic savings and investments. This equation can be positive or negative. Positive equation means that additional savings are invested abroad while lack implies that domestic investments are financed through capital import from abroad. One of the ways to measure degree of international capital mobility is the examination of dependency of national saving

rates and national investment rates between countries. The examination is performed through regression curve, where coefficients α_0 и α_1 can be evaluated. Exponent I in the equation refers to a country:

$$\left(\frac{I_t}{Y_t}\right)^i = \alpha_0 + \alpha_1 \left(\frac{S_t}{Y_t}\right)^i \quad (2)$$

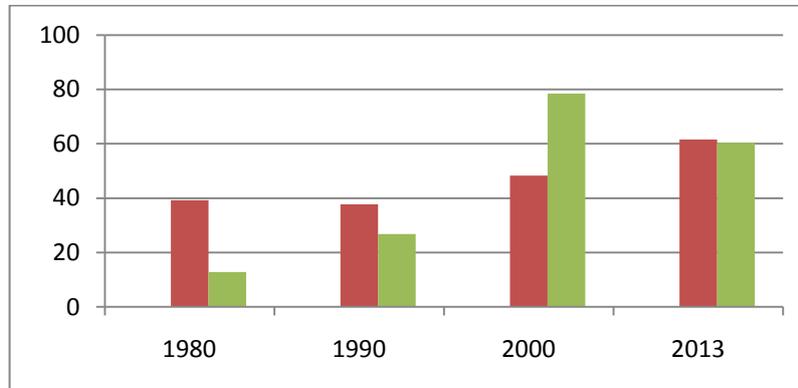


Figure 2 The degree of international economic integration

Source: United Nations Conference on Trade and Development, UNCTAD *Stat*

In a closed economy, total investments are equal to total savings $I_t = S_t$, which means that $\alpha_0 = 0$, $\alpha_1 = 1$. In an open economy where capital mobility is present, investments and savings can mutually oscillate presenting in this way capital import and export. If a part of domestic savings is placed abroad then the evaluated coefficient α_1 is less than 1 ($\alpha_1 < 1$). The reason for this is that an increase in domestic savings reduces the level of domestic real interest rate and the supply of capital also increases. Consequently, savers invest rather in foreign than in domestic economy. A higher integration of domestic and foreign capital markets increases the tendency for domestic savings to move towards foreign economies as a reply to a fall in domestic interest rate which reduces eventually the value of α_1 . In a country, where the level of savings is higher than investment rates, there is a surplus in current account while in the opposite case there is a deficit. In order to conduct empirical analysis this paper uses gross capital formation (% of GDP) as an indicator. The paper uses gross savings (% of GDP) as an indicator of savings. The data about the trends of both indicators are obtained from the official website of the World Bank (WDI, 2015). The countries under analysis are the countries which Montiel (2011) selected as the emerging markets: Argentina, Brazil, Chile, China, Colombia, Egypt, India, Indonesia, Israel, Jordan, Korea, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Singapore, South Africa, Thailand, Turkey, Venezuela.

4. RESULTS AND DISCUSSION

In order to examine the effects of international capital mobility, Feldstein and Horioka (1980) examined the dependency between saving rate and investments in 16 OECD countries in different time periods. In the first period of observation ranging from 1960-1974, a high value of α_1 was determined which indicates a low level of international capital mobility. This kind of result meaning that savers have significant inclinations towards investing into domestic economy is known as *Feldstein-Horioka puzzle*. The explanation for this phenomenon is found in current attempt of the governments to sustain the stability of current accounts (reduction in significant deficits) in order to sustain fixed exchange rates. This study uses emerging markets to examine this concept. The application of regression analysis (OLS)

examines the dependency of investments and savings where investments are seen as a dependent variable and savings as an independent variable. Time framework covers two years (1982 and 2014) in order to show the effects of globalization on international capital flow. Based on the Figure 3, it is clear that regression curve has a positive slope. The evaluated regression curve can be presented in the following form:

$$I/Y_t = 15.02 + 0.58(S/Y_t), R^2=0.45, t\text{-value } 3.24$$

The value of a coefficient which stands with an independent variable amounts to 0.58 which indicates a significant dependency of investments and savings. Econometrically observed, quantitative dependency of variable is at a significant level. This indicates that determinacy coefficient is 45%. Statistical significance of this relation, and to some extent of this model, has been confirmed with the *t-value* which is, based on the table values, extremely high. It should also be mentioned that there is neither heteroskedasticity nor autocorrelations of the residuals and that the residuals follow a normal distribution. These are necessary conditions for regression analysis. The confidence interval is shaded in the Figure 3 and it is indicative that a large number of countries is within this interval.

The Figure 4 presents the results of the examination for the data from 2014. The regression curve can be presented as follows:

$$I/Y_t = 14.07 + 0.42 (S/Y_t), R^2=0.39, t\text{-value } 4.20$$

The value of the coefficient which stands with the independent variable equals to 0.42. Quantitative dependency of the variable is on the lower level but statistical significance is still present which is indicated by *t-value*. This model does not have heteroskedasticity, autocorrelation and normal distribution of residuals is present. The comparison of Figure 3 and 4 reveals that relations are weakening over time. Regression curve is flatter in the second case. The estimation of both models and the comparison of values obtained for α_1 reveal that this coefficient for 2014 was about 70% of the same value obtained for 1982. This shows that international capital mobility has been increasing with the reduction of the links between national savings and investments.

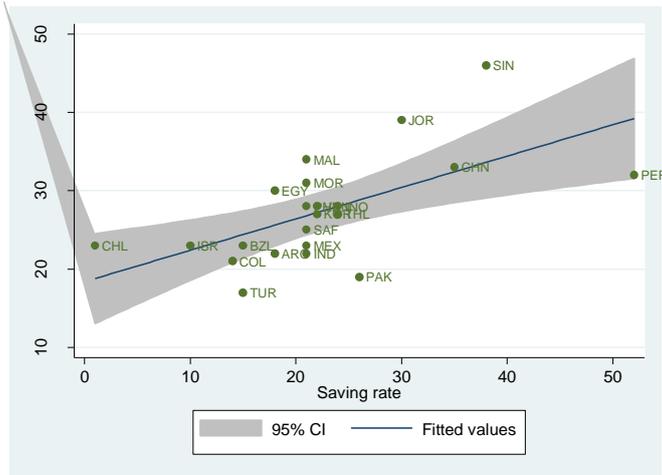


Figure 3 The relations between savings and investments in selected emerging markets in 1982

Source: Authors’ calculations

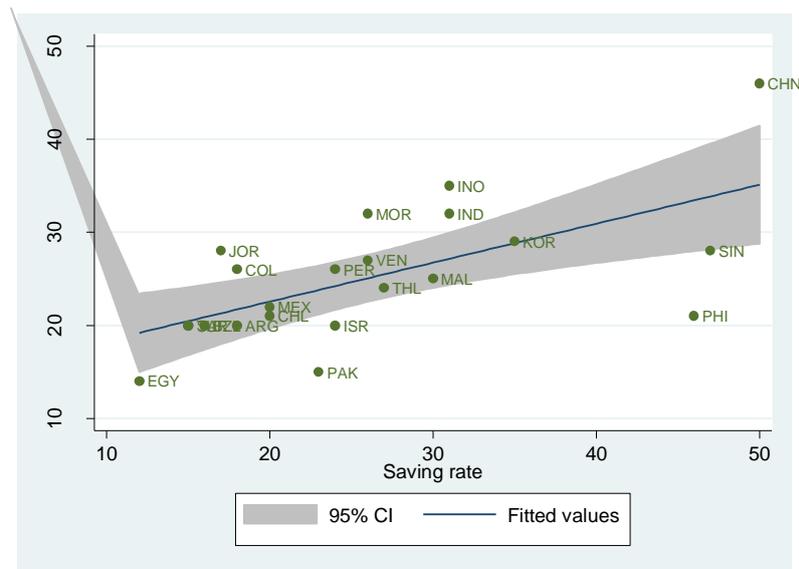


Figure 4 The relations between savings and investments in selected emerging markets in 2015

Source: Authors' calculations

5. CONCLUSION

The empirical analysis conducted in this study has revealed that under the influence of the globalization capital mobility has been increasing. This has confirmed the basic hypothesis of this study. Even though the analysis is primarily preliminary, the results indicate the significant positive effect of the globalization process on capital mobility in the emerging economies. The fact that these countries are deeply integrated into the global economy makes this study even more important.

The debate about the influence of the globalization process on capital flow and real effect is increasingly crucial. It is clear that capital mobility brings long-term advantages and also potential risks. The market openness enables countries to raise the level of the national wealth and income. On the other hand, national economies are becoming more sensitive to changes in the international environment (behavior of foreign investors). The loss of trust can cause significant disturbances in terms of recession or depression in national economies. It may be a reason why certain developing countries with more emphasized tendencies towards changing loan conditions in comparison to developed countries sustain some form of capital control while the developed ones favor liberalization of international capital flows.

In terms of capital flow and globalization, it can be said that the capital is concentrated in the leading world economies, but that there are also certain changes in capital flow. Namely, there are new sources and destinations of foreign direct investments such as transitory countries and countries in East Asia including China as potential leading economic power of the 21st century. Finally, it can be said that higher capital mobility in the developing countries creates conditions for increasing their share in global production and trade. An increasing number of the developing economies liberalize and partly open their financial systems. The capital inflow into those countries has become stronger since the 90s of the previous century and they have increased their participation into economic activities. The problems can occur if economic crises cause outflow of the capital and its return to the domestic economies. In order to prevent this, firm macroeconomic and financial bases are needed and they represent

key elements in the prevention of the emergence and spread of economic crises. In that case, countries could obtain various benefits which financial globalization offers.

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HUMAN DEVELOPMENT AND ECONOMIC GROWTH IN WESTERN BALKAN COUNTRIES

Ljiljana Kontić¹

Abstract: *The main aim of this study is to investigate correlation between human development and economic growth. The economic growth can initiate human development. This approach assumes that economic growth requires first of all investment in human development. Based on United Nation statistical report about human development, this study tested relationship between the indicators of human development and gross national income per capita. Sample of the research were Western Balkans (Serbia, Montenegro, Croatia, Bosnia and Herzegovina, FYR of Macedonia, Albania). The study revealed significant correlation between human development and economic growth. Investment in human development is pre condition for economic growth. The institution and institutional politics were essential for process of economic growth. The directions for future studies and research limitations were presented too.*

Keywords: *Human Development, Investment, Economic growth, Western Balkans*

JEL Classification: *O15, R11*

1. INTRODUCTION

The gross national income (GNI) can be very different from basic development indicators (e.g. Noorbakhsh, 1996; Costantini and Monni, 2005). One of the first author who pointed the significance of an index of socio-economic development, which consists of three indicators, i.e. infant mortality, life expectancy and literacy was Morris (1979). The United Nations were always focus on socio-economic development of the countries members.

In 1990 the United Nation Development Program publish its first Human Development Report where an index of human development was introduced. The main idea was to verify empirical evidence shows that some countries have relatively high GNI per capita but very low indicators such as literacy, infant mortality or education. One of the reason is unequally distribution of wealth.

The Human Development Index is a composite index, which consists of three compoments. The first one is infant mortality. The second one is educational level and literacy rate. The third component is GNI index which presents income per capita measured in Purchasing Pover Parity in US dollars (UNDP, 1990).

The United Nation Development Programme defines human development as a process of enlarging people choices. The main proposition of this approach is that investment in human resources is a core of economic development. Also, economic development can initiate human development. The increase of national income per capita is not a final goal, but wealthfare and human development.

Based on statistical data from United Nation Human Development Reports we explore the correlation between two non-income dimensions of the human development index (i.e. education and life expectancy) and national income per capita. The sample of research is

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Western Balkan countries (i.e. Serbia, Montenegro, Croatia, Bosnia and Herzegovina, Macedonia and Albania).

The paper is structured into three sections. The first section is devoted to literature review in relation to the main empirical studies; the second one is devoted to the methodology. In third section the results of the research are presented followed by conclusions and recommendations.

2. LITERATURE REVIEW

In 1990 the United Nation Development Programme published its first Human Development Report where an index of human development was introduced. During the period 1990 to 2015 twenty four reports have been published. Every year central theme was different. During the period 2006-2015 central themes were, in chronological order: Pover, poverty and the global water crisis; Human solidarity in the diveded world; Human mobility and development; Pathways to human development; A better future for all; Human progress in a diverse world; Reducing vulnerabilities and bulding resinstance and Work for human development.

The debate about the elements of the Human Development Index is quite vivid. Some authors argued that the correlation between Human Development Index and income depends on components of HD considered and of the countries analysed (e.g. Desai, 1991; Ranis et al. 2003; Ram, 2009).

Regarding the components of the Human Development Index, one study found that the health related components are unreliable and should be excluded from calculation of the HDI (e.g. Engineer, 2010).

The results of one study showed that inequality in many countries did not reflect on the human development (e.g. Grimm et al. 2009). It raises concerns about using income related factors to calculate Human Development Index.

Some studies devoted to investigation of educational component of the Human Development Index (e.g. Srinivasan, 1994). The results revailed that education has a more significant effect on Human Development Index than income related factors.

Based on results of empirical study which included 188 countries, main recommenation for policy makers is to focus their efforts on promoting gender equality to increase their HDI (e.g. Grzech et al. 2016).

3. METHODOLOGY

Data was collected from UNDP Human Development Report (2015). The main aim of the Human Development Report is to start discussion about human development policy at national, regional and global level. For better understanding data it is important to present the definitions of the term and main data sources (see Table 1).

I used simple linear regression that allowed us to summarize and study relationships between two variables. To avoid an auto-correlation problem, we used educational index and life expectancy index as dependent variables for human development and GNI index as a independent variable.

Table 1 Definitions of terms and main data sources

Term	Definition	Data Sources
Human Development Index (HDI)	A composite index measuring average achievement in three basic dimensions of human development - a long and healthy life, knowledge and a decent standard of living.	UNDESA (2015), UNESCO Institute for Statistics (2015), United Nations Statistics Division (2015), World Bank (2015), Barro and Lee (2014) and IMF (2015).
Life expectancy at birth	Number of years a newborn infant could expect to live if prevailing patterns of age-specific mortality rates at the time of birth stay the same throughout the infant's life.	UNDESA (2015)
Expecting years of schooling	Number of years of schooling that a child of school entrance age can expect to receive if prevailing patterns of age-specific enrolment rates persist throughout the child's life.	UNESCO Institute for Statistics (2015)
Main years of schooling	Average number of years of education received by people ages 25 and older, converted from education attainment levels using official durations of each level.	UNESCO Institute for Statistics (2015), Barro and Lee (2014), UNICEF Multiple Indicator Cluster Surveys and ICF Macro Demographic and Health Surveys.
Gross national income <i>per capita</i>	Aggregate income of an economy generated by its production and its ownership of factors of production, less the incomes paid for the use of factors of production owned by the rest of the world, converted to international dollars using PPP rates, divided by midyear population.	World Bank (2015), IMF (2015) and United Nations Statistics Division (2015).

Source: UNDP (2015):211

4. RESULTS AND DISCUSSION

Regarding the value of the Human Development Index, all Western Balkan countries were classified into the group of countries with high human development. The human development level in Western Balkan countries is relatively high due to previous investments made by previous regimes (before 1990). Table 2 presents statistical data for Western Balkans.

Table 2 Human Development Index in Western Balkans

Country	Human Development Index (HDI)	Life expectancy at birth	Expecting years of schooling	Main years of schooling	Gross national income per capita	GNI per capita rank minus HDI rank
Serbia	0.771	74.9	14.4	10.5	12,190	20
Montenegro	0.802	76.2	15.2	11.2	14,558	27
Croatia	0.818	77.3	14.8	11.0	19,409	11
Macedonia	0.747	75.4	13.4	9.3	11,780	9
Albania	0.733	77.8	11.8	9.3	9,943	14
Bosnia and Herzegovina	0.733	76.5	13.6	8.3	9,638	19

Source: UNDP (2015).

Among two simple linear regressions, life expectancy had the lower R-square value of 2.6351%, while the R-square value of education was significantly higher 51.6869%. This goes in line with previous studies (e.g. Engineer, 2010; Srinivasan, 1994). The level of education would have the largest impact on economic development of the Western Balkans. At the same time, health component would not effect on countries development.

Table 3 Regression Statistics

Variable	Multiple R	R Square	Adjusted R Square	Standard Error	Observations
Life expectancy	0.16233	0.026351	-0.21706	1.214027	6
Education	0.718936	0.516869	0.396087	0.932542	6

Source: Authors' calculation

The results showed that to reach development in Western Balkans, these three goals are essential (e.g. Grzech et al. 2016): 1) to manage of social conflicts, 2) to reduce inequality and 3) to exploit economic opportunities. To reach those aims an important role have institutions. The main sources of growth are better governance as well as the quality of institutions measured by following variables: level of corruption, international country risk, quality of bureaucracy, risk of expropriation (e.g. Olson et al. 1998). The standardized behavioral patterns, determined by system of prizes and penalties, shape actions which effect development.

For Western Balkan countries it is important to promote institutional change. Concrete, structural adjustment are very expensive project, but more important is to change values and rules which inhibit growth.

Development policies in Western Balkans should be implemented along with adequate institutional policies.

5. CONCLUSION

The human development is a process of widening people choices. The main proposition of this approach is that investment in human resources is a core of economic development. The Human Development Index is a composite index, which consists of three components: infant mortality, educational level and GNI index which presents income per capita measured in Purchasing Power Parity in US dollars. The debate about correlation between Human Development Index and economic growth is still vivid. Many authors argued that the correlation between Human Development Index and income depends on components of HD considered and of the countries analysed (e.g. Desai, 1991; Ranis et al. 2003; Ram, 2009).

Regarding the value of the Human Development Index, all Western Balkan countries were classified into the group of countries with high human development. The human development level in Western Balkan countries is relatively high due to previous investments made by previous regimes (before 1990).

Results of the linear regression revealed correlation between education index and development. This is consistent with the results of the other studies (e.g. Engineer, 2010; Srinivasan, 1994).

The role of the governmental policies in Western Balkan countries is to create educational system, the health system and mobility in job market which will promote human development. The results of this research supports investing in human development to

increase the rate of economic development. Human development is precondition for economic growth.

Future study will include more specific and detailed analysis of this important issue.

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BALANCE OF TRADE AND EXTERNAL DEBT OF THE REPUBLIC OF SERBIA

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Miloš Dimitrijević³

Abstract: *For the years back the Republic of Serbia is characterized by the existence and continual rising in trade deficit and public debt. Also, there is a high import dependence of economy. In addition, expressed import dependence is not adequately compensated by exports, and that precludes regular servicing of external debt, having in mind that the Republic of Serbia is one of the countries that are highly indebted. The basic macroeconomic ratios (for the period 2009-2015) will be analyzed in the paper. It will determine the macroeconomic and international position of Serbia, as well as their mutual relationship. Multiannual problems and systemic constraints that Serbian economy is facing are preventing the implementation of a development model based on export orientation and fixing the foreign trade position of the Republic of Serbia.*

Keywords: *trade balance, external debt, import, export.*

JEL Classification: *F41, F43, O11*

1. INTRODUCTION

Contemporary theories of international trade, since Smith and Ricardo were based on the liberalization of foreign trade and those theories have shown that international trade brings benefits to all partners in the trade. Countries may on the basis of their comparative advantages have the benefit of international trade exchange and specialization, which will lead to their better competitive position.

Today, small and unwell developed economies are increasingly involved in international trade, in order to become more competitive. In this sense, we can say that economic relations with foreign countries especially for these countries, such as Serbia, are extremely important. Individual state of the world economy countries is different, and no national economy can profit equally because they differ from each other. The differences between them are many, and from them mainly arises a question of measuring the openness of these economies in the context of competitiveness.

What is to distinguish in the context of the trade balance of the Republic of Serbia and competitiveness refers precisely to the benefits that result from the openness of small economies in achieving competitiveness. In this regard, it is necessary to explore the relationship between economic openness, trade balance and the status of the foreign debt. Considering these basic relations, the subject of research is to identify the relationship of foreign trade balance with key macroeconomic indicators, as well as status and view of the external position of the Republic of Serbia. In this context, the main objective of the work will focus on identifying the basic restrictions on exports and the best ways to use the export options.

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In accordance with the object and aim of this research the basic assumption in this paper is:

H: If the Republic of Serbia is seen as a small open economy that depends on foreign trade, which recorded a high external debt and balance of payments deficit, then such a country should turn to strategy of export orientation.

2. THE RELATION BETWEEN TRADE DEFICIT AND CURRENT

ACCOUNT DEFICIT

Trade relations with other countries have contributed to Serbia recorded export growth in recent years. Opening the Serbian economy and participation in international trade organizations has led to significant growth of trade, especially in the observed years.

Besides the growth of exports, there has been a positive growth in gross domestic product. However, export growth and gross domestic product growth was not enough to cover imports, and because of that situation in Serbian economy the current account recorded a deficit.

Table 1 Export, GDP and current account balance in Republic of Serbia

	2009	2010	2011	2012	2013	2014	2015
Exports (in EUR million)	8043,00	9515,00	11145,00	11469,00	13937,00	14451,00	15631,00
GDP (in EUR million)	30655,00	29766,30	33423,80	31683,10	34262,90	33319,00	33491,00
Current account balance	-2.031,8	-2.036,7	-3.656,0	-3.671,4	-2.098,3	-1.984,7	-1.347,2
Export (% GDP)	26,24%	31,97%	33,34%	36,20%	40,68%	43,37%	46,67%
Current account balance/GDP	-6,63%	-6,84%	-10,94%	-11,59%	-6,12%	-5,96%	-4,02%

Source: National Bank of Serbia, (2016), Statistical Bulletin, National Bank of Serbia, (2016),

Based on Table 1, it can be concluded that exports of the Republic of Serbia in the observed period increased from 8,043 million euros in 2009 to 15.631 million in 2015. During this period, except to the export activities, GDP increase for 2.836 million euros. However, the current account is still negative and that deficit was much milder in 2015 compared to 2009. Export as a share of GDP have increased in 2015 almost double compared to 2009 and now recorded 46.67% of the total value of GDP. Considering that current account deficit during observed period decreases, that situation illustrates participation of current account deficit in reduction of GDP. In 2015 the share of current account deficit amounted to -4.02% of GDP.

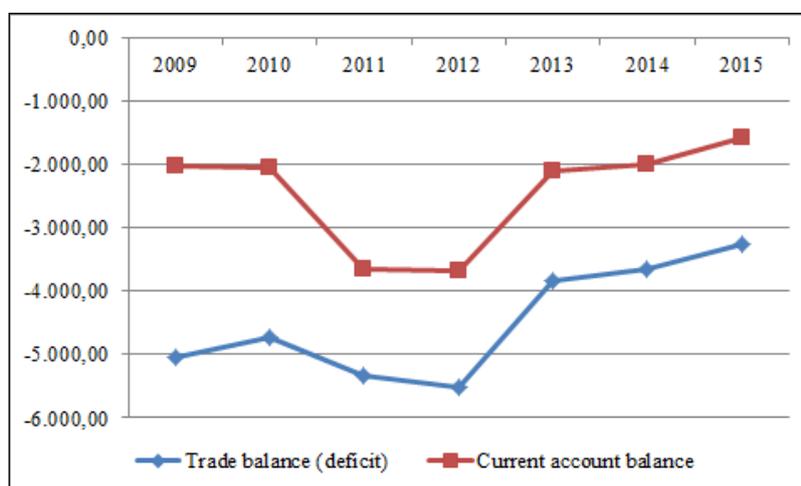
Based on the data from Table 2 it can be seen that the total external debt of the Republic of Serbia in 2015 amounted to 26.294 million and its share in GDP amounted to 79%. Also, in the same year external debt accounted for 168% of the value of exports. According to the indicator of indebtedness, Serbia is a highly indebted country, since the foreign debt is almost two times higher than exports. The ratio coverage of imports by foreign exchange reserves of the National Bank of Serbia also decreased by almost 30% so it is 55% (in 2015). Repayment of debt also points to the unfavorable external position of Republic of Serbia. This indicator also decreases, both in relation to GDP and to export. This points to another important task that the macroeconomic policy of the Republic of Serbia - the problem of debt repayment.

So, over the past 7 years can be seen scenario of high external debt of the Republic of Serbia with the inability of its regular servicing. The situation is even more drastic when taking into account that the external debt accounts almost 80% of GDP and that is twice higher than exports. This situation in literature is known as the "twin deficits" (Janković, 2015).

Table 2 Export and external position in Republic of Serbia

	2009	2010	2011	2012	2013	2014	2015
Exports (in EUR million)	8.043,00	9.515,00	11.145,00	11.469,00	13.937,00	14.451,00	15.631,00
External debt	22.272,36	23.508,69	24.123,45	25.645,33	25.644,29	25.679,40	26.293,52
GDP (in EUR million)	30.655,00	29.766,30	33.423,80	31.683,10	34.262,90	33.319,00	33.491,00
External debt (%GDP)	73%	79%	72%	81%	75%	77%	79%
External debt (%Export)	277%	247%	216%	224%	184%	178%	168%
Foreign exchange reserves/ Import	81%	70%	73%	64%	63%	55%	55%
Debt repayment/GDP (%)	12,8%	12,0%	12,4%	13,0%	13,4%	14,2%	11,9%
Debt repayment/exports of goods and services (%)	48,76%	37,46%	37,27%	36,07%	32,59%	32,65%	25,36%

Source: National Bank of Serbia, (2016), Statistical Bulletin, National Bank of Serbia, (2016),

**Figure 1** Trade balance and current account balance in Republic of Serbia

Source: UNCTADstat

The high level of deficit defined as a chronic problem of the Serbian economy (Veselinovic, 2014). The main characteristic of macroeconomic developments in Serbia after 2008 refers to the high foreign trade deficit and it recorded the highest value in 2012. That unstable situation threatened to undermine macroeconomic stability, balance of payments and also affect the competitiveness of the Serbian economy.

3. RESTRICTIONS ON THE EXPORT GROWTH OF THE REPUBLIC OF SERBIA

The growth of export of goods and services would enable to Serbia an improvement of its liquid position for a long term. In this way, the trade balance and the current account balance would be directly improved. At the same time, it is necessary to stimulate the impact of foreign direct investments, and to take action to gain more favorable borrowing in abroad, in order to avoid upper limit of debts. (Mirković & Knežević, 2012). From the view of the economic growth, the most important are the investments which enable higher productivity

and technological progress, especially within exchangeable goods, as they contribute to the competitiveness growth and export (Đorđević, 2009).

Serbia necessarily depends on international trade, because of lack of natural energy and impossibility to settle domestic demand with available supply. That is the reason of the presence of high deficit in external trade. The external trade has become extremely important for Serbia after applying a new model of economic growth and development, which is based on increase of export (export- oriented model of growth). Its position concerning the external trade is absolutely clear - in spite of efforts made towards export orientation, Serbian economy is still import - dependent (Đorđević & Stoiljković, 2012). The increase of export of goods and services is necessarily, in order to maintain the foreign exchange incomes which should be sufficient for regularly debt payments in abroad and import. However, there are number of problems which domestic exporters face with.

First, high interest rates at the domestic market force undertakers to incur for their needs. The restrictive monetary-credit policy (because of the inflation pressure) reduces credit potential of the banks, which retains credit rates at high level (Kovačević, 2006).

Second, Serbian economy is not sufficiently export competitive. As the matter of fact, the Serbian enterprises are very slow with their activities, even the absence of the innovation ones, while their technological level of Serbian exporters is not up to very sharp world competition.

Third, unfavorable climate of investments affects the business costs directly, having the consequences on the competitiveness of the Serbian firms. The interests of foreign investors are determined by risks that have huge influence to decisions within investments. Serbia is for a long time qualified as a country of political instability, unfinished privatization process, high corruption level, and ineffectiveness of justice, inadequate access to the financial sources, rigid job market, and high tax rates. Therefore, the business ambient is not attractive for more intensive income of foreign capital, yet.

Fourth, the process of market liberalization of Southeast Europe had the target to enable better and more intensive trade of industrial and agriculture products, that is, to establish the unique trade rules for the entire region. Unfortunately, insufficient use of the export opportunities within the free zone of trade in south-east Europe disables business performances of Serbian economy.

For fundamental changes of economy structure, it is necessary to increase the investment level significantly in near future. Obviously that Serbia findings in a deep economic crisis. The export deficit is the result of an economy based on domestic demand. It is necessary to create a new growth model, as soon as possible, based on strategy of export-orientation. Export-oriented countries have achieved very good results and were very successful in their economies. (Savić, 2010).

4. USE OF EXPORT OPPORTUNITIES IN THE FREE TRADE ZONE IN SOUTHEAST EUROPE

Raising the competitiveness of the Serbian economy, through the intensification of export activity, involves significantly improving the general competitiveness factors, such as macroeconomic stability and economic growth, the quality of economic policy, incentive business environment for enterprises, development of financial market institutions, quality management. Serbia should make additional investments to encourage export oriented industries in which competitiveness can be achieved by a wide range of products and services,

and increase foreign exchange inflows on the basis of price and technological competitiveness (Bošnjak, 2005). Export focus of the Republic of Serbia should be a regional market place or the countries from the immediate environment, which signed FTAs declaration.

Primary objectives of macroeconomic policy - the revitalization and growth of production should be based on export expansion, which consider to not realistic to expect significant growth in domestic demand in the coming period. Therefore, the market integration of the SEE (Southeast Europe) countries and intensive cooperation in terms of trade is significant export opportunity for Serbia.

Reports of the World Bank in recent years show the improvement of the business environment in the region of Southeast Europe. Unfortunately, this region in recent years is not attractive for foreign investors. This is indicated by the fall of FDI (Foreign Direct Investments) inflows in recent years. Expected FDI inflow in real sector has not been achieved, that consider to foreign capital was primarily directed at banks, insurance companies, monopoly enterprises and excise goods (Maksimović, 2012). Notwithstanding the significant benefits offered to foreign investors, which is primarily the relatively cheap labor costs and easier access to the market in our country after the global economic crisis, there was a significant reduction in FDI inflows.

Export-oriented industries must have a leading role, taking fact that high and positive correlation of long-term, dynamic and sustainable economic growth and exports. This would be ensured realization of most socio-economic goals - macroeconomic stability, increasing employment, reducing the high trade deficit, the growth of labor productivity and international competitiveness, dynamic development of other economic activities. These trends would create the necessary conditions for a stable, balanced and long-term sustainable economic development (Mičić, 2011).

5. CONCLUSION

Chronic deficits of foreign trade balance and enormous public debt constantly override domestic economy. Additional limitations are the lack of competitiveness of Serbian products on the international market and expressed the technological obsolescence of production capacity. In addition, Serbia expresses import dependence for capital goods, while export structure mainly consists of labor-intensive products.

The basic premise of reducing the foreign trade deficit and external debt of the Republic of Serbia, through the long-term increase in the share value of merchandise exports to GDP, is certainly a restructuring of the real sector. In recent decades, the national economy is characterized by dramatically lag behind the highly developed countries in technological terms, which represents a fundamental barrier to the growth of export competitiveness of the Serbian economy. Renovation and production growth are priority objectives of macroeconomic policy in the future to be achieved through the implementation of high-tech solutions. The inflow of foreign direct investment has not led to the expected influx of foreign technology that would allow the achievement of objectives. Liberalization of the market of Southeast Europe and the signing of the Free Trade Agreement, Serbia would efficiently utilize export opportunities in the region.

In this work, based on long-term chronic problems shown clearly that the new model should be oriented towards the development of an export strategy, and this would be a major shift in economic policy of the Republic of Serbia, since export growth can provide a high rate of economic growth. In the forthcoming period it is necessary to implement the macro-

economic policy that will aim to build economic system based on the concept of accelerated growth through intensification of export and investment activities. Modernization of production through foreign direct investment and the use of the possibilities of free trade in the region, should facilitate macroeconomic healing based on export orientation. This hypothesis which is set to the beginning of this paper now has been confirmed.

This paper represents good theoretically, but also practical framework in the implementation of the macroeconomic policy of the Republic of Serbia toward the future. Restrictions are reflected in an inadequate analysis of the detailed structure of the external debt, which could indicate the key problems in its repayment. Therefore, as a recommendation for future research imposed by correlation analysis of the foreign trade balance and external debt of the Republic of Serbia, and other countries in transition, in order to adequately comprehend the position of each country.

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ACCOUNTING AND BUSINESS FINANCE

COOPERATIVE AUDIT IN SERBIA AFTER THE ADOPTION OF THE NEW LAW ON COOPERATIVES

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Abstract: *The paper gives an overview of the importance and the impressive results of the cooperative sector in the developed countries of Europe, which has over one hundred million members and tens of millions of employees. On the other hand, this sector in Serbia is underdeveloped and burdened with many problems. Reaffirmation of the cooperative movement will be an important factor in the future economic development of Serbia. The new Law on Cooperatives, adopted at the end of 2015, brings certain novelties. An important issue for cooperative business is cooperative audit. Appropriate control of cooperatives is an extremely important factor in the development of the cooperative sector, which is primarily related to the prevention of potential abuse and manipulation. Restoring confidence in cooperatives, largely lost during the second half of the 20th century, can not be achieved without a reliable and standardized system of cooperative audit. New Law on Cooperatives provides only general guidelines regarding cooperative audit. In this regard, of particular importance is the establishment of a general or national cooperative union, which will bring a unique Regulation on cooperative audit. In compiling of this Regulation should be involved all relevant cooperative associations, relevant ministries, as well as local and foreign experts in this field. One of the most important objectives of this Regulation should be the adoption of national standards of cooperative audit, which would define: object and objectives of the cooperative auditing, licensing of cooperative auditors, compiling reports on cooperative audit, control of cooperative auditors etc.*

Keywords: *cooperatives, the law on cooperatives, cooperative audit.*

JEL Classification: *P13, M42*

1. INTRODUCTION

In addition to private and public sector, co-operatives make up the third basic form of business. A co-operative is an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise. Co-operatives are businesses owned and run by and for their members. Whether the members are the customers, employees or residents they have an equal say in what the business does and a share in the profits.

Co-operatives are based on the values of *self-help, self-responsibility, democracy, equality, equity and solidarity*. In the tradition of their founders, co-operative members believe in the ethical values of honesty, openness, social responsibility and caring for others.

The *co-operative principles* are guidelines by which co-operatives put their values into practice.

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- *Voluntary and Open Membership.* Co-operatives are voluntary organisations, open to all persons able to use their services and willing to accept the responsibilities of membership, without gender, social, racial, political or religious discrimination.
- *Democratic Member Control.* Co-operatives are democratic organisations controlled by their members, who actively participate in setting their policies and making decisions. Men and women serving as elected representatives are accountable to the membership. In primary co-operatives members have equal voting rights (*one member, one vote*) and co-operatives at other levels are also organised in a democratic manner.
- *Member Economic Participation.* Members contribute equitably to, and democratically control, the capital of their co-operative. At least part of that capital is usually the common property of the co-operative. Members usually receive limited compensation, if any, on capital subscribed as a condition of membership. Members allocate surpluses for any or all of the following purposes: developing their co-operative, possibly by setting up reserves, part of which at least would be indivisible; benefiting members in proportion to their transactions with the co-operative; and supporting other activities approved by the membership.
- *Autonomy and Independence.* Co-operatives are autonomous, self-help organisations controlled by their members. If they enter into agreements with other organisations, including governments, or raise capital from external sources, they do so on terms that ensure democratic control by their members and maintain their co-operative autonomy.
- *Education, Training and Information.* Co-operatives provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to the development of their co-operatives. They inform the general public - particularly young people and opinion leaders - about the nature and benefits of co-operation.
- *Co-operation among Co-operatives.* Co-operatives serve their members most effectively and strengthen the co-operative movement by working together through local, national, regional and international structures.
- *Concern for Community.* Co-operatives work for the sustainable development of their communities through policies approved by their members.

Cooperatives have a long history of business, starting from the half of the 19th century. The industrial revolution during this period, despite the significant progress, led to layoffs and increasing poverty. Some workers then realized that only together can achieve a certain prosperity. Among them are the Rochdale weavers, who in 1844 lost their jobs after an unsuccessful strike. In order to form their own cooperative, twenty-eight weavers invested one pound each as a share. The cooperative has operated successfully since the beginning. This has provided an employment of cooperative members, which later increased considerably. Rochdale co-operative in this way has become a pioneer in the development of the cooperative movement in the world and is recognized as the first real cooperative.

In the mid-19th century French workers organized the first successful workers and producers cooperatives, which by the end of century spread throughout many countries of Europe and America. At the end of the 19th century, farmers form their producer cooperatives across Europe, especially in Denmark, Germany and the UK. During the 20th century and early 21st century cooperatives experienced a remarkable development on a global scale.

The paper will initially show the status of the cooperative movement in countries worldwide, and subsequently in Serbia.

2. COOPERATIVE SECTOR IN DIFFERENT COUNTRIES

In developed countries, but also in developing countries, cooperatives operate in almost all economic fields: banking, agriculture, insurance, retail, health care, construction, etc. Cooperatives may consist only a few members who join together and form a cooperative to achieve their goals. On the other hand, there are cooperative enterprises that have over a million members, generating revenues amounting to tens of billions of euros and are essentially similar to corporations: Crédit Agricole Group, Zen-Noh (National Federation of Agricultural Co-operatives), Migros, Friesland Campina etc.

The country with the largest number of individual members indirectly represented by the Alliance is the United States with 256 million members. There are nearly 30,000 co-operatives in the US. The next countries are in Asia, India with 93.7 million individual members and Japan with 77 million individual members. The fourth largest number of members is in Iran with 36.9 million individual members. Italy is the Alliance's first European country with 22.5 million individual co-operative members, represented by the Alliance and through their organizations.

Co-operatives are extremely important in creating and maintaining employment. In France, 21,000 co-operatives provide over 1 million jobs representing 3.5% of the active working population.. In Kenya, 50% of the population derive their livelihoods from co-operatives. Approximately 250,000 Kenyans are employed or gain most of their income from co-operatives. In Colombia, the co-operative movement provides 137,888 jobs through direct employment and an additional 559,118 jobs as worker-owners in workers co-operatives - providing 3.65% of all jobs in the country. In Indonesia, co-operatives provide jobs to 288,589 individuals. In the United States, 30,000 co-operatives provide more than 2 million jobs.

Also, large segments of the population are members of co-operatives. In Canada, four of every ten Canadians are members of at least one co-operative. In Quebec, approximately 70% of the population are co-op members. In Malaysia, 6.78 million people or 27% of the total population are members of co-operatives. In Norway out of a population of 4.8 million people, 2 million are members of co-operatives. In Paraguay, 783,000 people or 18% of the population are members of 1,047 co-operatives. In Spain, in 2008 15% of the population or 6.7 million people are members of a co-operative.

In Europe cooperative sector includes over one hundred million members and tens of millions of employees. These results were achieved, among others, with the support of public institutions. This support is usually directed to where they can achieve the following effects: competition in the market, the potential for creating new jobs and new forms of entrepreneurship. In relation to encouraging the development of Coop sector in EU member states, it should be pointed out that the governments of these countries in particular encourage cooperatives that are the backbone to achieving social benefits within the community.

3. COOPERATIVE SECTOR IN SERBIA

Just two years after the establishment of Rochdale cooperative - first recognized cooperatives in the world, in 1846 Slovak Štefan Homola founded "Gazdovský Spolok" in Backi Petrovac -

the first credit cooperative in the territory of nowadays Serbia. The first co-operative organizations among Serbs in Vojvodina occur in urban areas among the artisans, but the greatest significance had agricultural cooperatives.

Cooperative Movement in Serbia during the 20th century passed various stages. Until the Second World War there was significant growth and development. In the period after World War II, the cooperative sector has been significantly degraded through different "experimentation" in the former economic system, such as the establishment of the General Agricultural Cooperatives and Peasant Producer Cooperatives. (Nikolić, 2009, 144-145)

The 1953 Constitutional law and further economic reforms in 1965 weakened substantially the position of the cooperatives. (Petković et al., 2016) Their property became "nobody's" and "everybody's" socially-owned property. It was devastating period for the cooperative system in Serbia and the question of cooperatives assets and property is still largely unsolved. Despite the fact that social property was abolished, most cooperative property is today still registered as social property.

Unfortunately, transition period did not bring the perspective of the cooperative sector. The new Law on Cooperatives was adopted in 1996, but it had many flaws. During 21st century, draft Laws on Cooperatives were repeatedly considered, but the final adoption of legislation was interrupted many times by the elections for the National Assembly of Serbia. Finally, the new Law on Cooperatives was adopted at the end of 2015. The Law was passed just a few months before the elections for the National Assembly of Serbia, and a general impression is that because of the tight deadlines certain things remained incomplete.

It can be expected that the future development of cooperatives in Serbia, at least initially, will be present primarily in forms of agricultural and consumer cooperatives.

New agricultural cooperatives would provide significantly better business conditions for farmers. The farmers' associations is of particular importance for increasing the competitiveness of Serbian agriculture, considering that the average area that farm processes (according to the last census of agriculture in 2012) is only 5.4 ha, while it consists of more than three divided plot.

New consumer cooperatives could be established in the field of retail trade (especially food), which would give the possibility to customers to buy directly from the manufacturer. This would lead to a reduction in trade within the framework of the so-called. the informal economy

4. COOPERATIVE AUDIT IN SERBIA

Very important factor in the development of the cooperative sector is the control of cooperatives, especially in terms of preventing various abuses and manipulations. Restoring confidence in the cooperative, which is largely lost in the aftermath of the Second World War, can not be achieved without a reliable and standardized system of cooperative audit (Zakić, Kovačević, 2015).

The previous Law on Cooperatives, adopted in 1996, envisaged the existence of the obligations of the cooperative audit. According to Article 75 of this Law „cooperative audit is the examination of the application of cooperative principles in the cooperative, cooperative business with the cooperative members and third parties, property rights and relations operatives and employees, as well as the application of general and cooperative rules regarding the establishment, organization and overall business cooperatives”.

According to new Law on Cooperatives (Article 80), „the cooperative audit control compliance, administration and organization of cooperatives with the provisions of this law, cooperative principles and cooperative values. In addition to control functions, cooperative audit has preventive and instructive function to protect the interests of cooperatives, cooperative members and improvement of cooperatives.“

This article points out the essence of cooperative audit, which involves periodic testing of the application of the basic cooperative principles and values in the operations of each cooperative. The development of the cooperative sector in Serbia is significantly determined by using appropriate cooperative audit, which prevent the disregard of basic cooperative principles and values, the establishment of „bogus cooperatives“ and so on.

The law on cooperatives makes a distinction between cooperative audit and audit of financial statements. According to Article 57, the cooperative keep business books, draw up and submit financial statements in a manner and under conditions prescribed by the law governing accounting. The audit of the financial statements of the cooperative is performed in accordance with the law governing the audit.

Cooperative audit is compulsory for all cooperatives and may be regular and extraordinary. Regular cooperative audit is conducted at the request of the cooperative, every two years. An extraordinary cooperative audit done if necessary (Article 82).

Like the previous law, the new Law on Cooperatives only superficially include field of cooperative audit, probably with the expectation that certain specific regulations will precise guidelines.

In this regard, Article 83 provides the authorization (issued by the ministry responsible for cooperatives) of the individual cooperative federation to perform audit. According to the Law, a cooperative federation on is a legal entity established by cooperatives or other cooperative associations. Cooperative federations are established by the type of cooperatives, or for a specific territory (at least ten cooperatives could form federation).

The possibility that different cooperative federations bring their Regulation on cooperative audit existed in the previous law on cooperatives. During the 1990s there were several Regulations, adopted by the Cooperative Association of Yugoslavia and the Union of youth and student cooperatives of Yugoslavia Besides some similarities, regulations had some substantially different articles. For example, the requirements for appointment to the position of auditor in one ordinance required a university degree, while in the second was enough secondary education.

These two examples indicate the absence of uniform rules of cooperative audit, which significantly influenced the fact that in the past cooperative audit was almost non-existent, or was done inappropriately. The same problems can be expected in the future, given that the new Law on Cooperatives does not imply the adoption of uniform regulations on cooperative audit.

The draft law on cooperatives (published just few months before adoption) foresaw establishment of the General Cooperative Alliance, which is the representative association of the cooperative sector and brings together all cooperative federations registered in the Republic of Serbia (Article 79). It was designated to take over all the assets of the former Cooperative Association of Yugoslavia (Article 114).

The draft law included the subsequent adoption of the Ordinance on cooperative audit by the General Cooperative Alliance of Serbia. Unfortunately, the provisions of the General

Cooperative Union and a single Ordinance on cooperative audit were removed from the final version.

5. CONCLUSION

The paper gives an overview of the importance and the impressive results of the cooperative sector worldwide, which has hundreds of million members and employees. On the other hand, the cooperative sector in Serbia was devastated in the aftermath of the Second World War.

For further development of the cooperative sector in Serbia it is necessary to establish a legal framework that will allow easy establishment of cooperative business with minimal costs, clear and stimulating property relations, resolving the issue of "old cooperative property" etc.

Appropriate control of cooperatives is an extremely important factor in the development of the cooperative sector, which is primarily related to the prevention of potential abuse and manipulation. Restoring confidence in the cooperatives, which is largely lost during the second half of the 20th century, can not be achieved without a reliable and standardized system of cooperative audit.

By analyzing the new Law on cooperatives, it can be concluded that it does not tend to detail the area of cooperative audit, which is completely justified. In this regard, of particular importance is the establishment of a General cooperative alliance or other "umbrella" cooperative union, which will bring a unique Ordinance on cooperative audit. In compiling this Ordinance shall involve all relevant cooperative associations, relevant ministries, as well as local and foreign experts in this field.

One of the most important objectives of this Regulation should be the adoption of National standards of cooperative audit, which would regulate: determination of the objectives of the cooperative auditing, licensing cooperative auditors, compiling reports on cooperative audit, the issue of control of auditors etc.

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MEASURING THE POSSIBILITY OF IMPROVING SEGMENT REPORTING

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Abstract: *Segment reporting provides a greater chance to adequately evaluate the nature and financial effects of the business activities of the operating segments and corporations as a whole by users of financial statements. The purpose and character of segment reporting have been recognized in the international accounting theory and practice, as evidenced by the development of professional accounting regulations in the field of segment reporting. The intention of this paper is to highlight, recognize and promote the importance of external and internal segment reporting for companies in the Republic of Serbia. Through the prism of the information to be disclosed to external and internal segment reporting, the work provides a proposal for determining the importance of this information for managers, investors and potential investors. Assumed marks of importance for each disclosed information about operating segment are used for setting the regression model in which can be measured, above all, the connection between improving the external and internal segment reporting with disclosed information on operating segments. The results of research in this paper show low application of segment reporting in the Republic of Serbia. Companies in the domestic economic practice have low indicators of improving segment reporting, and the purpose of this paper is to identify the reasons for that negative conditions.*

Keywords: *Segment reporting, operating segment, disclosed information*

JEL Classification: *M 41*

1. INTRODUCTION

Segment reporting includes planning, accounting scope of business transactions, control of execution, determination of results and the result components in narrow organisational parts of entities. It presumes an adequate accounting information system that integrates financial and management accounting with costing in the function of decentralised financial reporting.

Segment reporting must be of good quality and efficient, because it provides a greater chance to adequately evaluate the nature and the financial effects of the business activities of the business segments and corporations as a whole, by the users of financial statements. Segment reporting, due to its importance, requires constant improvement of accounting theory and practice, as well as the same qualitative features that are expected from a high-quality official financial reporting.

Objectives of segment reporting are in the function of the fulfillment of information needs of the external and internal users of accounting information about operating segments through:

- determination of business (in)efficacy of segments and their contribution to the success (failure) of the entire entity;
- planning and control of costs, revenues, results, in other words monitoring, primarily,

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of the efficiency and profitability of segments;

- motivating managers and employees to achieve entity objectives through the achievement of segment objectives;
- fulfillment of requirements related to informing and communication between the segments and / or segments and the entity's top management;
- monitoring the execution and incurred deviations for the purposes of determination of liability for success (failure) in business segments, etc.

Organisation and function of external and internal segment reporting are chosen according to:

- The determinants, instruments and elements of the financial and management accounting organisation,
- Segment costing in the corporation,
- The type and status of the identified business segments and reporting segments associated with the type of organisational structure of the corporation
- Requirements and guidelines of the regulatory framework of financial reporting and
- Information requirements of the external and internal users of accounting information because the objectives of segment reporting are associated with external and internal informational requirements.

External segment reporting is particularly important for investors, creditors and the state. For the investment analysis it is necessary to know and understand how different parts of the corporation - identified as operating segments, operate economically. Without dividing corporation into operating segments (investment centers and profit centers are assumed here), there is no adequate way to predict the total quantity, time, or the risk of future cash flows of the whole corporation.

The internal segment reporting is aimed, primarily, at managers, because the corporation managing is separated from the corporation owners. Performance measurement of corporation parts is important for the operating segments managers. It is used for measuring the operating segments performance in the function of achieving the set goals. Beside the investment and profit centers, the cost, revenue and centers of budgeted expenditures are also assumed here. Finally, it would reflect on the corporation growth and development and the achievement and sustenance of competitive advantages, and in this regard related motivational effects on employees and especially on operating segments managers. Because of this, segment reporting is an important factor in the development and efficiency of corporate management.

Segment reporting in the modern business environment can and should be constantly reviewed and improved, among other things, through the improvement of performance measurement, improvement of costing systems and techniques, improvement of legislation and implementation of a general-purpose financial reporting and improvement of ethics and education of the accountants and managers of operating segments and the whole corporation. The professional accounting legislation has the key role in the segment reporting improvement.

2. LITERATURE REVIEW

Segment reporting has been the subject of theoretical and practical studies since the mid-twentieth century. For the purposes of more accurate presentation and interpretation of financial statements, operating segments information of an entity are extracted and disclosed from the consolidated financial reports (Barr, 1967). The reason for such crucial changes to

information requirements which are expected from financial reporting, was a significant increase in the number of mergers, acquisitions and diversification of the organisations, the emergence of conglomerates, etc, which indicated a weak informational basis in the existing consolidated financial statements.

From the official segment reporting in the United Kingdom in 1965 (Douppnik et al. 2012) via mandatory ones in the USA in 1969 (Nobes et al. 2010) to the international professional accounting regulations for segment reporting in the eighties of the last century, a significant progress in the development of segment reporting has been made (Crawford et al. 2010).

The harmonisation and convergence of segment reporting at the international level is being specially researched. In this regard, the key role for segment reporting has the development of professional accounting regulations. These are International Financial Reporting Standard 8 - Operating segments (IFRS 8) and the US Financial Accounting Standard 131 – Disclosures about Entity Segments and Related Information (SFAS 131). Reviewing (Crawford et al. 2012; Li, 2013), evaluation (IASB, 2013) and improvement of professional regulations of segment reporting are continuous processes (Nichols et al. 2012; Kang et al. 2014) and are important for the segment reporting improvement.

3. METHODOLOGY

A larger number of disclosed information about the operating segments can have a greater effect on the segment reporting improvement, and on the improvement of its informative significance. Segment information which are relevant, both, for the investors and the managers are descriptive (qualitative) and financial (quantitative).

Disclosures of financial information about operating segments, numerically expressed, are conditioned by costing operation for the operating segments (Medved, 2014). In this regard, it is necessary to measure the importance of the disclosed information about operating segments, in order to improve the segment reporting, and to measure the impact of costing and especially the impact of modern costing systems on the disclosed segment information.

The general regression model of the impact of disclosed information about the operating segments on the segment reporting improvement is:

$$Y_{Ai} = \beta_0 + \beta_1 X_{11} + \beta_1 X_{12} + \beta_1 X_{13} + \beta_1 X_{14} + \beta_1 X_{15} + \beta_1 X_{16} \\ + \beta_2 X_{21} + \beta_2 X_{22} + \beta_2 X_{23} + \beta_2 X_{24} + \beta_2 X_{25} + \beta_2 X_{26} \\ + \beta_3 X_{31} + \beta_3 X_{32} + \varepsilon_1$$

Where:

Y = the dependent variable for segment reporting improvement, where $Y = f(X)$;

β_0 = constant, $\beta_0 = 0$ because the starting premise of segment reporting improvement is that there are no information disclosed about operating segments

$\beta_1 = 0.475$ (the slope of independent variable for external segment reporting)

$\beta_2 = 0.475$ (the slope of independent variable for internal segment reporting)

$\beta_3 = 0.05$ (the slope of control variable) (The issue of the fixed value assigned to the parameters β_1 , β_2 and β_3 is the biggest unknown in the set regression model. β_3 equals 5% because the percentage is considered an acceptable accounting error (Turčić, 2012).) Parameters β_1 and β_2 are assigned with the same values within the amount of 0.95.

$$\sum_{i=1}^3 \beta_i = 1 \quad \beta_1 = 0,475 \quad \beta_2 = 0,475 \quad \beta_3 = 0,05$$

ε_1 = random error (the amount to be neglected in the model)

a) The independent variables that are binary specified, that is – they either appear (having the value of 1) or do not appear (having the value of 0). Two groups of independent variables are made - external variables (the investor's aspect) and internal variables (the manager's aspect):

- External independent variables (the investor's aspect):

X_{11} = the presence of information on the factors determining the reportable operating segments;

X_{12} = the presence of information on major products/services on the basis of which the reporting segment generates revenues;

X_{13} = the presence of information on the profit or loss and total assets of operating segments;

X_{14} = the presence of information on accounting basis for transactions between reportable segments;

X_{15} = the presence of information about major customers;

X_{16} = the presence of information about geographical areas;

- Internal independent variables (the manager's aspect):

X_{21} = the presence of information on the management approach implementation;

X_{22} = the presence of information on the profit (loss) and operating segment incomes;

X_{23} = the presence of information about the assets and liabilities of the operating segments;

X_{24} = the presence of information on the criteria for dismemberment or aggregating of operating segments;

X_{25} = the presence of information about the compliance of operating segments disclosure with total amounts in the financial reports;

X_{26} = the presence of information for determining the various segment performance measures;

- Control variables (independent variables):

X_{31} = the application of modern costing systems and

X_{32} = the application of traditional costing systems.

In order to express the segment reporting improvement, disclosure of information about operating segments must be evaluated and the significance of each disclosed information about the operating segments must be assessed. Measuring the approximate contribution of each disclosed information about the operating segments to the overall informative power of segment reporting is simplified while determining the significance weights of disclosed information about operating segments. The table below presents the assumed significance weights of the information about operating segments (Table. 1).

The table with assumed significance weights of each disclosed information about operating segments, if necessary, may expand and/or adapt to the expectations of managers, as well as investors, for every business entity that was observed. The assumed significance weights of each disclosed information about operating segments are necessary for the purposes of setting the regression model that can measure, above all, the connection between the improvement of the external and the internal segment reporting with information on operating segments, which are being disclosed.

Table 1 Assumed significance weights of respective information for external and internal segment reporting

External segment reporting				
Information	Information significance expressed by weight INVESTOR'S ASPECT			Overall information significance expressed by weight
	Investment centre	Profit centre	Expense centre	
Factors determining the reportable operating segments	10	8	0	18
Information on major products / services on the basis of which the reporting segment generates revenues	10	9	0	19
Information on the profit or loss and total assets of operating segments	10	10	0	20
Information on accounting basis for transactions between reportable segments	10	7	0	17
Information about the major customers	10	9	0	19
Information about geographical areas	10	7	0	17
Overall information significance according to the operating segments from the investor's aspect	60	50	0	110
Internal segment reporting				
Information	Information significance expressed by weight MANAGER'S ASPECT			Overall information significance expressed by weight
	Investment centre	Profit centre	Expense centre	
Management approach implementation	10	9	7	26
Information on the profit (loss) and operating segment incomes	10	10	5	25
Information about the assets and liabilities of the operating segments	10	10	5	25
Information on the criteria for dismemberment or aggregating of operating segments	10	9	5	24
Information about the compliance of operating segments disclosure with total amounts in the financial reports	10	9	5	24
Information for determining the various segment performance measures	10	9	6	25
Overall information significance according to the operating segments from the manager's aspect	60	56	33	149

Source: Turčić, M. 2012.

By acknowledging the assigned significance weights of each independent variable, the construction of the influence model of the disclosed information about operating segments on segment reporting improvement may be expressed as:

$$Y_i = 0,475 * 110/159 \frac{\sum_{i=1}^6 X_{1i}}{6} + 0,475 * 149/159 \frac{\sum_{i=1}^6 X_{2i}}{6} + 0,05 \frac{\sum_{i=1}^2 X_{3i}}{1+X_{32}}$$

odnosno:

$$Y_i = 0,20174 \frac{\sum_{i=1}^6 X_{1i}}{6} + 0,27326 \frac{\sum_{i=1}^6 X_{2i}}{6} + 0,05 \frac{\sum_{i=1}^2 X_{3i}}{1+X_{32}}$$

4. RESULTS AND DISCUSSION

The selected business entities from domestic economic practices (business entities 1 and 2) and international economic practices (business entities 3 and 4) were tested for the set regression model of segment reporting improvement (presented in Table 2):

Table 2 Testing of segment reporting improvement regression model

External segment reporting				
Information	INVESTOR'S ASPECT			
	Business entity 1	Business entity 2	Business entity 3	Business entity 4
X ₁₁ - Factors determining the reportable operating segments	1	1	1	1
X ₁₂ - Information on major products/services on the basis of which the reporting segment generates revenues	1	1	1	1
X ₁₃ - Information on the profit or loss and total assets of operating segments	1	1	1	1
X ₁₄ - Information on accounting basis for transactions between reportable segments	0	0	0	1
X ₁₅ - Information about major customers	0	0	1	1
X ₁₆ - Information about geographical areas	0	1	1	1
Total of disclosed information from investor's aspect	3	4	5	6
Internal segment reporting				
Information	MANAGER'S ASPECT			
	Business entity 1	Business entity 2	Business entity 3	Business entity 4
X ₂₁ - Management approach implementation	1	0	1	1
X ₂₂ - Information on the profit (loss) and operating segment incomes	1	1	1	1
X ₂₃ - Information about the assets and liabilities of the operating segments	1	1	1	1
X ₂₄ - Information on the criteria for dismemberment or aggregating of operating segments	0	0	0	1
X ₂₅ - Information about the compliance of operating segments disclosure with total amounts in the financial reports	1	0	1	1
X ₂₆ - Information for determining the various segment performance measures	1	0	1	1
Total of disclosed information from manager's aspect	5	2	5	6
Control variables	X ₃₁ - Application of modern costing systems	0	0	1
	X ₃₂ - Application of traditional costing systems	1	1	0
Result	Y - Segment reporting improvement	0,35359	0,25058	0,44584
				0,525

Source: Author's calculations

The results obtained by set regression model indicate that, in relation to international corporations tested by model, which apply modern costing systems and disclose more information on operating segments, business organisations from our domestic economic practices have lower indicators of segment reporting improvement.

Applied regression model in the specific case studies has two key limitations. Firstly, the determined weights of the information significance from investor's and manager's aspects are subject to change depending on the assumptions of each individual manager. Essentially this means that, the weights of the information significance on operating segments are subjective. This limitation includes one advantage - it implies constant reviewing of the starting model assumptions, due to changed preferences and needs of managers over a period of time. The

other limitation of the established model is the necessity of testing its applicability to a greater number of business entities that would ultimately indicate whether the model is generally acceptable for testing segment reporting improvement, according to disclosed information about operating segments from investors' and managers' aspects in terms of application of modern costing systems.

Finally, regardless of the limitations, the regression model application should highlight the importance of greater disclosure of information about the operating segments. Segment reporting improvement is contributed, in accordance with the requirements of IFRS 8 and SFAS 131, by the disclosure of each operating segment information for external purposes (for the needs of investors, creditors, potential investors, government and other external users of accounting information) and for internal purposes (for the needs of managers and other employees). It also encourages the implementation of modern approaches in management and costing and thus enables the improvement of segment reporting.

From the aspect of investors, potential investors, creditors and financial analysts, it is necessary to point out the importance of profitability information (Berger et al., 2007). Profitability provides long-term basis for the achievement of other objectives related to growth and development of entities. Therefore, by considering the disclosed information on operating segments it is possible to determine the data relevant for prediction of future activities related to the growth and development of entities. The provision of such data and information is a very important indicator of future earning possibilities and the entity stock price movements, which is ultimately crucial for investors and creditors of the entity, and also future investors. As the entity, seen as a whole, in simplified terms, represents the sum of its operating segments, it means that the business of each operating segment in the past, as well as its business and financial perspectives for the future, can be very significant for the predictions of investors, creditors and analysts (Medved et al. 2012). Disclosure of data important for prediction of the future activities related to the growth and development of the entities, on the other hand, could be of crucial importance for achievement and maintenance of competitive advantages. Therefore, managers deliberately disclose such information in order not to jeopardise the future competitive position and reveal valuable information to their rivals. The aforementioned explains the reasons why, generally, it is considered that managerial approach embedded in IFRS 8 and SFAS 131, is, in a sense, a greater information obstacle of disclosed operating segments information.

The acceptable number of companies for an empirical research on this issue cannot be found within the sample of 50 large business organisations in Serbia which were observed, because of the two business organisations that disclose information about the operating segments. Also, in economic practice of the Republic of Serbia, the traditional costing systems are applied, and it is, mostly, a developed form of actual cost allocation.

The segment reporting is influenced by two key factors. First of all, general economic conditions, reflected in the significant presence of large legal entities that are state-owned or owned by foreign corporations in the Republic of Serbia. An equally important factor is the overall level of organisation, competence, importance and professionalism of accounting regulations and accounting profession.

Regarding the accounting regulations and accounting profession in the Republic of Serbia, a fairly satisfactory level of professionalism and expertise has been achieved, and it presents a good starting point for the implementation of costing and segment reporting. However, the objective factor that cannot be influenced by accounting regulations and profession is the ownership and organisational structure of business organisations in the Republic of Serbia. Such economic circumstances have contributed to the poor development and representation of

contemporary approaches to costing in the business entities in the Republic of Serbia. Perhaps, the influx of foreign capital into businesses entities is a chance to strengthen the informative importance of adequately set costing in the Republic of Serbia. Therefore, one should not ignore the importance of competence, expertise, knowledge and skills of accountants, but also the managers, in order to identify the possibilities and purpose of modern costing systems application for the needs of financial reporting of the general kind, and ultimately, the segment reporting.

5. CONCLUSION

The set regression analysis model indicates that each additional disclosure of operating segment information affects the improvement of informative strength and segment reporting importance. In terms of domestic economic practices, according to the observed sample, a low representation of segment reporting has been determined.

The effects of segment reporting improvement can be measured by general regression model. In order to measure the effects it is necessary to analyse (for a longer period of time) and to include the business entities that apply segment reporting even outside the territory of the Republic of Serbia. With certain limitations of the model application, especially on the territory of the Republic of Serbia, the advantage of the model is that the significance weights of each operating segment information can be adapted to the needs and requirements of managers, and also investors. However, by applying the model onto the business entities outside the Republic of Serbia, which use modern costing systems, the significant segment reporting improvement is noticed. Accordingly, from the viewpoint of development possibilities and suggestions for segment reporting improvement in terms of domestic economic practices, it could be concluded that:

- With the influx of foreign capital and the desire to achieve the best possible results, the improvement of costing and segment reporting can be expected. The interest of foreign investors is to obtain high-quality and timely information through appropriate performance indicators. Among other things, for the purpose of efficient business decision-making, it can contribute to the need of quality segment reporting;
- Identifying opportunities and informative capabilities of costing, by the management structure, should contribute to the necessity of internal and external segment reporting;
- Referring to the importance and the informative capability of segment reporting should be directed towards achieving and sustaining the competitive advantage of the whole corporation and its parts.

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THE INFLUENCE OF COMPANY LEGAL FORM AND SIZE ON ACCOUNTING POLICIES DISCLOSURES

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Abstract: *The aim of the research in this paper is to find out whether legal form and size of a company influence its willingness to disclose important accounting policies. The disclosure of the basis for measurement of property, plant and equipment, the method of depreciation of property, plant and equipment, and the method of inventory accounting in the notes to financial statements of 400 companies in the Republic of Serbia applying IFRS are observed. The research shows that both legal form and size have some influence on willingness of companies to disclose their accounting policies. The willingness to disclose the basis for measurement of property, plant and equipment and the depreciation method are influenced by the company size, while the willingness to disclose the method of inventory accounting is influenced by the company legal form.*

Keywords: *accounting policies, disclosure, International Financial Reporting Standards (IFRS), property, plant and equipment, inventories*

JEL Classification: *M 41, M 48*

1. INTRODUCTION

According to IAS 8: Accounting Policies, Changes in Accounting Estimates and Errors (paragraph 5), accounting policies are "the specific principles, bases, conventions, rules and practices applied by an entity in preparing and presenting financial statements". Alexander and Nobes (2010, 451) define accounting policies as "the detailed methods of valuation and measurement that a particular company has chosen from those generally accepted by law, accounting standards or commercial practice". They stress that companies have to use these policies consistently for similar items and over time. Glautier and Underdown (2001, 57) perceive accounting policies as "specified accounting bases judged by business enterprises to be most appropriate to their circumstances".

The above definitions, when viewed together, indicate that accounting policies are:

- internal regulation of financial reporting, i.e., the regulation created or chosen by a reporting entity (company, enterprise) itself,
- limited by external regulation (such as laws or standards), which defines the space for making accounting choices, and
- aligned with the needs and circumstances of individual companies.

Jones (2014, 367) points out that different accounting policies result in different figures in financial statements. Because of the great potential influence of accounting policies on the presented financial position and performance, it is very important for users of financial statements to be informed about accounting policies that a company uses when preparing its financial statements. Deegan and Ward (2013, 63) stress that knowledge of accounting policies is necessary for a meaningful comparison of financial position and performance of different companies. Therefore, companies are imposed the obligation to disclose, in their

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notes to financial statements, the accounting policies that are used in preparation of financial statements.

However, companies are not always ready to comply with financial reporting regulation for various reasons. Some companies depart from financial reporting regulation unintentionally, because of insufficient knowledge, carelessness or technical errors, while some of them intentionally present wrong or incomplete financial statements in order to mislead their stakeholders. In this paper, we have examined the relationship between the legal form and the size of companies and their willingness to disclose accounting policies. The research hypotheses are formulated as follows:

H1: The size of a company influences its readiness to disclose its accounting policies.

H2: The legal form of a company influences its readiness to disclose its accounting policies.

2. LITERATURE REVIEW

Many companies in the Republic of Serbia apply International Financial Reporting Standards (IFRS) when preparing their general-purpose financial statements. Some companies are required or allowed to use full IFRS, some companies are required or allowed to use IFRS for Small and Medium-sized Entities (IFRS for SMEs), while some companies (micro entities), have an option to use special legislation, i.e., the Ordinance of the Minister of Finance (which is, in effect, a national standard) instead of IFRS. The results of many studies (KPMG and von Keitz 2006; Kvaal and Nobes 2010; Kvaal and Nobes 2012; Nobes and Parker 2010) indicate that IFRS are flexible financial reporting standards because they allow accounting policies to vary. It means that different entities can use different accounting policies for the similar business transactions.

Property, plant and equipment, as well as inventories, are very important kinds of assets for many companies, because of their significant share in total assets. On the other hand, those items of statement of financial position are strongly influenced by the accounting policies choices. Open options, as one of the important features of IFRS in general, are pronounced exactly in financial reporting for property, plant and equipment as well as for inventories. When creating accounting policies for measurement after the initial recognition of the items of property, plant and equipment, companies can choose between the historical cost model and the revaluation (fair value) model. In addition, depreciation of those items of assets inevitably involves judgements, especially with regard to depreciation method, useful life and residual value. When creating accounting policies for the items of inventories (raw materials, semi-products, finished products, commodity), companies can choose between the FIFO method and the average cost method (Obradović, 2014, 233-235).

Evans (2003, 334) defines disclosure as "supplying information in the financial statements, including the statements themselves, the notes to the statements and the supplementary disclosures associated with the statements", and considers disclosure as "final stage of accounting". IFRS require all the important information on accounting policies to be disclosed in the notes to the financial statements, including the information on measurement basis used for property, plant and equipment after initial recognition (IAS 16, paragraph 73; IFRS for SMEs 2015, paragraph 17.31), and the method used in measuring end inventories and costs of inventories disposed (IAS 2, paragraph 36; IFRS for SMEs 2015, paragraph 13.22). Because the notes to the financial statements should include mentioned information, as well as other text and numerical information, this component of the set of financial statements "should not be interpreted by the reader as secondary or unimportant. In fact, notes often occupy more

page space than statements themselves and include very important information that would not be available if the reader were limited to the information that can be contained in the financial statements themselves" (Williams, 2007, 10:15). In other words, "the notes to the financial statements can paint a more complete picture of how an entity operates and offer a context in which to understand the numerical amounts" (Kranacher, 2011, 80) presented in the statement of financial position, the statement of comprehensive income, the statement of changes in equity and the statement of cash flows.

However, the results of studies conducted by Amiraslani et al. (2013) and Prather-Kinsey and Waller Shelton (2005) show that IFRS are not always applied strictly. Albu and Albu (2012: 350) point out to the importance of national regulators and auditors for IFRS implementation in emerging economies stressing that mere introduction of IFRS into a national regulatory framework does not automatically result in higher-quality financial statements. Some studies conducted in the Republic of Serbia reveal that companies are not always sufficiently motivated or forced to apply IFRS strictly. The results of research on the related party disclosure practice conducted by Jakšić (2010) indicate that companies in the Republic of Serbia do not fully respect the provisions of the authoritative standard (IAS 24). Obradović & Karapavlović (2014) analyze the practices of financial reporting on property, plant and equipment and reveal that some companies do not disclose measurement basis or depreciation method. Obradović & Karapavlović (2016) find that segment information disclosed in the notes to financial statements of the companies in the Republic of Serbia is not always consistent with the provisions of the authoritative standard (IFRS 8). Spasić & Denčić-Mihajlov (2014) point out that mandatory disclosure practices of Serbian companies appear to be limited. According to them, main reasons for this situation are: (1) ineffectiveness in the functions of internal and external auditors, (2) poor corporate governance and (3) relatively small number of companies that are subjects of strict and direct supervision of the regulatory bodies. Mijić et al. (2011) find that quality of financial reporting on biological assets in the Republic of Serbia is not satisfactory because only 6.67% of the companies in their sample disclose all the information required by IAS 41. The abovementioned results of studies show that preparers and auditors of financial statements in the Republic of Serbia do not devote full attention to information disclosed in the notes to financial statements. Therefore, users of financial statements are deprived of information that might be very important for proper assessment of financial position and performance of companies.

3. RESEARCH SAMPLE AND METHODOLOGY

The research is conducted on the sample of 400 companies of different size and legal form in the Republic of Serbia. The analysis is based on the financial statements for 2014 published on the official internet site of the Serbian Business Registers Agency. The structure of the sample is shown in Table 1.

The relationships between the company size and legal form, on one hand, and the disclosure of accounting policies, on the other hand, are examined on the examples of (a) the basis for measurement of property, plant and equipment, (b) the depreciation method for those types of assets, and (c) the inventory accounting method. The reason for choosing the abovementioned examples stems from (1) the explained importance of property, plant, equipment and inventories, and (2) the space for accounting policies left by IFRS regarding these types of assets. The non-parametric chi-square tests of independence are used in order to test the research hypotheses. We have used the significance level of 0.05.

Table 1 Sample structure

	Number	Percentage share
<i>Size*</i>		
micro	2	0.50
small	54	13.50
medium-sized	108	27.00
large	236	59.00
<i>Legal form</i>		
stock company	119	29.75
limited liability company	201	50.25
public utility company	75	18.75
social enterprise	3	0.75
cooperative	2	0.50
* Classification is based on the 2013 Accounting Law.		

Source: Author's calculation

4. RESULTS AND DISCUSSION

Property, plant, equipment and inventories are very important items of the statement of financial position (balance sheet) of the sample companies. The average share of property, plant and equipment in total assets is 43.22%, while the average share of inventories of material, semi-product, finished product and commodity in total assets is 13.99%. The expenditures in income statement directly related to the items of inventories (cost of goods sold and cost of material consumed) are also very important, making 56.84% of the total operating expenses in average, while depreciation costs make 5.55% of the total operating expenses in average.

An analysis of the notes to financial statements shows that 47 (11.75%) companies in the sample do not clearly disclose the basis for measurement of property, plant and equipment (PPE) although IFRS require disclosure of that information. The number of companies that do not clearly disclose the depreciation method is the same. The number of companies that do not explicitly disclose the method of inventory accounting is 53 (13.25%). These results indicate that the number of companies in the Republic of Serbia that intentionally or unintentionally fail to disclose some important information on their accounting policies is not negligible.

The analysis presented in Table 2 reveals that 12.61% of stock companies, 9.45% of limited liability companies, and 16.00% of public utility companies do not disclose the basis for measurement of PPE. The results of chi-square test of independence, presented in Table 3, show that the difference between companies of different legal form in terms of their willingness to disclose the basis for measurement of PPE is not statistically significant ($p > 0.05$). The Phi coefficient of 0.078 denotes a medium effect size according to the Cohen's criteria (Pallant, 2011, 222). It can be concluded that legal form does not influence the willingness of companies do disclose the basis for measurement of PPE.

According to Table 4, 10.92% of stock companies, 10.45% of limited liability companies, and 16.00% of public utility companies do not disclose the depreciation method. The results of chi-square test of independence, presented in Table 5, show that the difference between companies of a different legal form in terms of their willingness to disclose the depreciation method is not statistically significant ($p > 0.05$). The Phi coefficient of 0.066 denotes a small

effect size. It can be concluded that legal form does not influence the willingness of companies do disclose the depreciation method.

Table 2 Disclosure of measurement basis for PPE by legal form

	Disclose	Do not disclose	Total
stock company	104	15	119
limited liability company	182	19	201
public utility company	63	12	75
total	349	46	395

Note: Social enterprises and cooperatives are excluded from the analysis because of the small number of such companies in the sample.

Source: Author's calculation

Table 3 Chi-square test of independence for the relationship between legal form and disclosure of basis for measurement of PPE

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.428 ^a	2	0.297
Likelihood Ratio	2.356	2	0.308
Linear-by-Linear Association	0.231	1	0.631
N of Valid Cases	395		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.73.

Source: Author's calculation

Table 4 Disclosure of depreciation for PPE by legal form

	Disclose	Do not disclose	Total
stock company	106	13	119
limited liability company	180	21	201
public utility company	63	12	75
Total	349	46	395

Note: Social enterprises and cooperatives are excluded from the analysis because of a small number of such companies in the sample.

Source: Author's calculation

Table 5 Chi-square test of independence for the relationship between legal form and disclosure of the depreciation method for PPE

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.723 ^a	2	0.423
Likelihood Ratio	1.606	2	0.448
Linear-by-Linear Association	0.872	1	0.350
N of Valid Cases	395		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.73.

Source: Author's calculation

Table 6 reveals that 11.76% of stock companies, 17.41% of limited liability companies, and 5.33% of public utility companies do not disclose the inventory accounting method. The results of chi-square test of independence, presented in Table 7, show that the difference between companies of different legal form in terms of their willingness to disclose the inventory accounting method is statistically significant ($p < 0.05$). The Phi coefficient of 0.136 denotes a medium effect size. It can be concluded that legal form influences the willingness of companies to disclose their inventory accounting method.

Table 6 Disclosure of the inventory accounting method by legal form

	Disclose	Do not disclose	Total
stock company	105	14	119
limited liability company	166	35	201
public utility company	71	4	75
Total	342	53	395

Note: Social enterprises and cooperatives are excluded from the analysis because of a small number of such companies in the sample.

Source: Author's calculation

Table 7 Chi-square test of independence for the relationship between legal form and disclosure of the inventory accounting method

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.261 ^a	2	0.027
Likelihood Ratio	8.146	2	0.017
Linear-by-Linear Association	0.762	1	0.383
N of Valid Cases	395		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 10.06.

Source: Author's calculation

Table 8 reveals that 21.43% of micro and small companies (those categories of companies are analyzed together because of the small number of micro companies in the sample), 15.74% of medium-sized companies observed, and 7.63% of large companies do not disclose the basis for measurement of PPE. The results of chi-square test of independence, presented in Table 9, show that the difference between companies of different size in terms of their willingness to disclose the basis for measurement of PPE is statistically significant ($p < 0.05$). The Phi coefficient of 0.163 denotes a medium effect size. It can be concluded that size influences the willingness of companies to disclose the basis for measurement of PPE. The willingness grows with the growth of company.

Table 8 Disclosure of the basis for measurement of PPE by size

	Disclose	Do not disclose	Total
micro and small	44	12	56
medium-sized	91	17	108
large	218	18	236
Total	353	47	400

Source: Author's calculation

Table 10 reveals that 21.43% of micro and small companies, 13.89% of medium-sized companies observed, and 8.67% of large companies do not disclose the method of depreciation of PPE. The results of chi-square test of independence, presented in Table 11, show that the difference between companies of different size in terms of their willingness to disclose the method of depreciation of PPE is statistically significant ($p < 0.05$). The Phi coefficient of 0.141 denotes a medium effect size. It can be concluded that the size influences the willingness of companies to disclose the method of depreciation of PPE. Again, the willingness grows with the growth of company.

Table 9 Chi-square test of independence for the relationship between the size and the disclosure of the basis for measurement of PPE

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.586 ^a	2	0.005
Likelihood Ratio	10.068	2	0.007
Linear-by-Linear Association	10.464	1	0.001
N of Valid Cases	400		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.58.

Source: Author's calculation

Table 10 Disclosure of the method of depreciation of PPE by size

	Disclose	Do not disclose	Total
micro and small	44	12	56
medium-sized	93	15	108
large	216	20	236
Total	353	47	400

Source: Author's calculation

Table 11 Chi-square test of independence for the relationship between the size and the disclosure of the method of depreciation of PPE

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.977 ^a	2	0.019
Likelihood Ratio	7.324	2	0.026
Linear-by-Linear Association	7.884	1	0.005
N of Valid Cases	400		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.58.

Source: Author's calculation

Table 12 reveals that 17.86% of micro and small companies, 10.19% of medium-sized companies observed, and 13.56% of large companies do not disclose the inventory accounting method. The results of chi-square test of independence, presented in Table 13, show that the difference between companies of different size in terms of their willingness to disclose the inventory accounting method is not statistically significant ($p > 0.05$). The Phi coefficient of 0.070 denotes a medium effect size. It can be concluded that the size does not influence the willingness of companies to disclose their inventory accounting method. Contrary to the previous results, a higher percentage of large companies fail to disclose the information in comparison to medium-sized companies.

Table 12 Disclosure of the inventory accounting method by size

	Disclose	Do not disclose	Total
micro and small	46	10	56
medium-sized	97	11	108
large	204	32	236
Total	347	53	400

Source: Author's calculation

Table 13 Chi-square test of independence for the relationship between the size and the disclosure of the inventory accounting method

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.936 ^a	2	0.380
Likelihood Ratio	1.915	2	0.384
Linear-by-Linear Association	0.141	1	0.708
N of Valid Cases	400		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.42.

Source: Author's calculation

The summary of the previous results presented in Table 14 show that both legal form and size have some influence on the disclosure of accounting policies. The research hypotheses have been partially confirmed.

Table 14 Summary of chi-square tests of independence between legal form and size and willingness to disclose accounting policies

Type of information (dependent variable)	Statistical significance of the influence of	
	legal form	size
basis for measurement of PPE	no	yes
method of depreciation of PPE	no	yes
inventory accounting method	yes	no

Source: Author's calculation

5. CONCLUSION

The research has shown that legal form influence willingness of companies to disclose the inventory accounting method, wherein limited liability companies show the least readiness to disclose. It can be explained by the fact that this type of companies has the least public accountability comparing to stock companies and public utilities. On the other hand, the research has revealed that the size influences willingness of companies to disclose the basis for measurement of property, plant and equipment and the method of depreciation of those items of the statement of financial position (balance sheet). In general, bigger companies show more willingness to disclose the abovementioned accounting policies regarding property, plant and equipment than smaller companies. We conclude that the research hypotheses can be partially accepted. Legal form and size influence the disclosure of some, but not all, information on accounting policies. In addition, the research has confirmed that companies in the Republic of Serbia generally do not fully comply with IFRS. Auditors and regulators of financial reporting should pay more attention to the disclosures on accounting policies in the notes to financial statements.

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INFLUENCE OF LEVERAGE ON PROFITABILITY OF COMPANIES IN THE REPUBLIC OF SERBIA

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Abstract: *The constant tendency of companies towards generating the highest possible value for all stakeholders, in addition to careful selection of investment, also requires correct decisions about their funding. More specifically, the choice of an appropriate financial structure of the company is one of the most difficult, but also the most important decision in the process of generating value. Accordingly, the main objective of this research is to investigate the influence of leverage on profitability of companies in Serbia. Taking into account the results of the previous research, the multiple ordinary least squares regression is used in the paper for drawing conclusions. The research was conducted on a sample of 117 companies from 2008 to 2012. The results of the research show that there is a statistically significant negative relationship between leverage and profitability, which is in accordance with the conclusions of most research in developing countries.*

Keywords: *Leverage, Capital Structure, Profitability, Emerging Economy*

JEL Classification: *G32, L25, L21*

1. INTRODUCTION

The company has, according to origin, two types of sources of financing: own and borrowed capital. When selecting the optimal capital structure, it is necessary to know the advantages and disadvantages of financing through the issue of equity securities and through debt. Financing through debt should cause, on the one hand, tax savings and increased discipline when making investment decisions, and, on the other hand, may face the company with bankruptcy costs, agency costs, and loss of future financial flexibility. For this reason, financing via debt in profitable companies can generate greater net present value due to tax savings, and, consequently, create added value for owners, while in companies with profitability problems, the situation can be reversed.

Management of the company is striving to make the company's operations as successful as possible, and to, through a different combination of assets structure and financial structure, achieve the best possible business results and thereby increase overall value of the company. Due to its advantages, debt can be one of the tools to improve company profitability. However, efficiency of its use may vary from company to company, so that the management quality can best be confirmed by its ability to use debt to increase profitability. Of course, in addition to debt, company profitability is under the influence of other internal and external factors as well, such as company size, operational decisions, sector specifics, as well as macroeconomic factors.

The aim of this study is to investigate the effect of leverage on the profitability of companies in the emerging Serbian economy. The testing will be conducted using a linear regression model, based on the data on 117 large companies in the period 2008-2010. Leverage will be considered as a share of debt (short-term, long-term, and total) in total assets, and profitability

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as return on total assets. While it is clear that leverage directly affects the cost of capital and capital investment, it is difficult to say at the beginning what the impact of leverage on profitability is, without prior theoretical discussion on the capital structure and empirical studies that examine the relationship between leverage and profitability.

2. CAPITAL STRUCTURE - THEORETICAL DISCUSSION

Irrelevance theory of capital structure or MM theory (Modigliani and Miller, 1958) is the first comprehensive model of the impact of financial leverage on the cost of capital and the value of the company under conditions of uncertainty. According to this theory, in perfect market conditions and with the absence of taxation³, two companies, the same in all respects, except in the capital structure, must have the same market value and the cost of capital. If this is not the case, arbitrage, as a key element in the theory, will ensure that the two companies have the same market value. MM theory was, in addition to its great importance, subjected to considerable criticism (Stiglitz, 1969), which mainly related to the unsustainability of the assumptions in the real world. Aware of the merits of some criticism, the authors of the irrelevance theory tried to make appropriate adjustments and include real market phenomenon to modernize theory. Theory included the effects of taxation and the possible bankruptcy of the company.

When it comes to tax effects, policy of taxation has special impact on the design of the capital structure, bearing in mind that interest costs reduce tax base (Modigliani and Miller, 1963). Given the effect of tax savings (tax shield), the company value would vary with a change in the share of debt and would reach its maximum at a very high level of debt in the capital structure. Specifically, profitable companies would be able to realize tax savings, which would lead to lower cost of capital and increase the company value. Reasonable use of debt can reduce tax liability of the company, which is a function of the amount of interest that the company pays and marginal tax rates (Opler et al. 1997), and increase free cash flow after payment of taxes (Barclay and Smith, 1999). According to Gitman (Gitman, 2003), the value of the company reaches its maximum at the moment when cost of capital is minimal, while Damodaran (Damodaran, 2001) considers that the value of the company will not be at the maximum level in point representing a minimal cost if free cash flow is not maximized.

In addition to its main advantages, the use of debt also has some disadvantages that are reflected in an increase in the probability of occurrence of bankruptcy and agency costs (Gitman, 2003). When using debt, one must take into account the company liquidity, or the ability of a company to, within the set deadlines; meet its due obligations arising from regular cash inflow from operating activities. After a certain level of leverage, any further increase in debt leads to the reduction of the company value, due to the growing influence of the present value of bankruptcy costs, which do not represent a linear function of leverage, as this possibility increases at a growing rate after a certain threshold level (Van Horne, 2002). Agency costs are costs that occur as a result of a conflict of interest, and may be the result of conflicts between owners (shareholders) and managers, as well as between creditors and owners (Harris and Raviv, 1991). By including agency costs in the theoretical discussion, it was noted that they behave similarly to bankruptcy costs, meaning that they increase cost of capital and thus reduce the value of the company (Jensen and Mackling, 1976). Accordingly,

³Assumptions of MM theory: 1) market is perfect, 2) the expected value of the probability of achieving future operating income is the same for all participants, although they may differ in their subjective views, 3) all companies can be classified into homogenous "risk classes", in which companies are perfect substitutes, 4) no taxation (this assumption was later removed) (Van Horne, 2002).

simultaneous analysis of benefits and costs of debt, known in literature as Trade-off theory, indicates that equality of marginal benefit and marginal cost of debt provides maximum value of the company (Martin et al., 1988; Fama and French, 2005).

Starting from asymmetric information, by observing preferences of companies in the selection of sources of funding, Myers and Majluf (1984) established Pecking order theory. According to Pecking order theory, companies do not have a precisely defined debt/equity relationship, but see the share of debt as a reflection of cumulative company needs for financing for a longer period (Myers, 1984). It was noted that companies, according to Pecking order theory, use internally generated resources (retained earnings) before debt, while issuance of shares represents the ultimate solution to be used “under duress”, or when investment requires the use of additional debt that would lead the company to excessive indebtedness (Fama and French, 2005). Donaldson (1961) points out that company management favors internally generated funds to the level of exclusion of external financing, except in situations where the need for sources of funding is significantly above the levels of internally generated funds.

It can be seen that the basic theories of capital structure vary according to position on the level of debt in the capital structure, but also in predicting profitability. According to the modified MM theory, profitable companies have a high level of debt, thus using tax savings. In addition to tax savings, debt can also lead to increased management discipline, which will result in a reduction of agency costs. Furthermore, profitable companies are exposed to a lesser probability of bankruptcy, and, based on Trade-off theory, one can expect the existence of a positive relationship between leverage and profitability. In contrast, Pecking order theory favors retained earnings as the primary source of financing, and suggests that profitable companies have a higher amount of retained earnings and thus a smaller share of debt, pointing to the existence of a negative relationship between leverage and profitability. That means that companies with high profit margin, the same in all other respects, will have a smaller share of debt because they will be able to generate higher internal sources (Titman and Wessels, 1988; Barton et al. 1989). However, when it comes to empirical research, the results are different, although the ones supporting Pecking order theory prevail.

3. LEVERAGE AND PROFITABILITY – EMPIRICAL RESEARCH

Numerous studies have examined the impact of different levels of debt on the profitability of the company. In some studies, the emphasis was placed solely on long-term debt (capital structure), while some extended that influence to short-term sources, as well as total debts. As for the developed countries, Nissim and Penman (2003) found the existence of an adverse effect of leverage on profitability. They noticed that portfolios with lower financial leverage are more profitable than those with high leverage, and that there is a negative effect of total leverage on future profit. Dimitrov and Jain (2008) also noted the existence of a negative effect of leverage on profitability. Kayhan and Titman (2007) observed a negative relationship between debt levels and profitability, pointing out that the relationship is relatively weak. Research by Fama and French (2002), as well as Rajan and Zingales (1995), indicates the existence of strong negative correlation between leverage and profitability with the US companies.

Roden and Lewellen (1995) examined different capital structure of companies acquired through leveraged buyout transactions, and indicated the existence of significant positive relationship between profitability and share of total debt. Gill et al. (2011) observed the existence of a significant positive impact of short-term and total debt on the profitability of service companies, but also a significant positive impact of short-term, long-term, and total

debt on profitability of production companies. In the study conducted by Hammes and Chan (2005), based on a sample of companies from eleven European countries, it was found that factors (share of fixed in total assets, size, age, and sectoral affiliation of companies) that affect profitability are the same in all countries, and that the strength of this influence is different and depends on economic conditions and economic cycle of each country. They found significant positive relationship between leverage and profitability. The exceptions are Sweden, where a significant negative impact of leverage on profitability was observed, and Greece, where there was no statistically significant relationship between leverage and profitability.

Al Fu (1997) tested MM theory about the independence of the company value from capital structure and examined the impact of capital structure on profitability of companies in Malaysia. The study results indicate the existence of significant negative link between profitability and capital structure. Most other studies conducted, based on samples of companies from emerging economies, show a significant negative relationship between leverage and profitability (for example, Nigeria in Ogbulu and Emen, 2012; India in Ramachandran and Candasamy, 2011; Sri Lanka in Nimalathasan and Valeriu, 2010; China in Yuanxin et al., 2009). A statistically significant negative relation between leverage and profitability was observed with transition countries – Bulgaria, Czech Republic, Estonia, Hungary, Poland, Romania, Slovakia, Slovenia, Latvia, and Lithuania (Haas and Peeters, 2004).

It is evident that empirical studies indicate the existence of a strong relationship between leverage and profitability, with this connection being mostly negative when it comes to developing countries. The reason for this can be found in the undeveloped corporate governance, underdeveloped or undeveloped capital market (Green et al. 2002), high rate of inflation and low rate of GDP (Booth et al. 2001). Accordingly, the research hypothesis is set as follows:

H0: Leverage has a statistically significant negative impact on the profitability of the company.

It is to expect that the results of the research will indicate the statistical and economic nature of the impact of leverage on profitability of companies in Serbia, as well as compliance with some of the attitudes of capital structure theories.

4. SAMPLE AND METHODOLOGY

Sampling was carried out according to the Economist magazine TOP 300 edition, where the companies in Serbia are ranked by the amount of profit realized in 2010. 120 companies were taken from this list, whose financial statements for the period 2008-2010 were subject to further analysis. The database, which was the subject of research, consisted of 351 financial statements, i.e. 117 Serbian companies⁴ for the period 2008-2010. All companies covered by the study, according to the criteria of the Law on Accounting and Auditing, belong to the group of large companies. The complete study is based on the carrying values of items important for the study on the date of financial statements. The financial statements for the reporting period were collected from the database of the Serbian Business Registers Agency⁵.

⁴ Research started with 360 observations, but 9 observations (three companies), in which the level of total debt was 1 and which had losses in excess of capital, were excluded from further analysis.

⁵ www.apr.gov.rs

The study aims to examine the impact of leverage on profitability of companies in Serbia. The study applies research methodology similar to the methodology used by Fama and French (2002), Rajan and Zingales (1995), and Gill et al. (2011). Profitability, as a dependent variable, is measured by return on assets (ROA), obtained as a ratio between earnings before interest, taxes, depreciation, and amortization (EBITDA) to total assets. EBITDA is used to more accurately assess the operational performance of the company, and it is also a key measure of financial health, which allows for the comparison of companies with different capital structures and different geographical locations. It is for these reasons that a series of scientific papers obtained ROA by dividing EBITDA by total assets (Jensen et al., 2010; Barclay et al. 2012). The independent variables are the share of short-term debt in total assets (SDA), the share of long-term debt in total assets (LDA), and the share of total debt in total assets (TDA).

Control variables in the study are sales growth and firm size. Sales growth (SG) is a control variable, because different sales growth rates have different effects on the current but also future profitability of the company. Its value is expressed by the ratio of difference between sales (sales revenue) in the current and previous period and sales in the previous period. Firm size (SIZE) is approximated by the natural logarithm of sales revenue, because the classification of companies, taking into account the criteria, may vary between countries. More specifically, there is a problem of selecting the size criteria, so that the specific characteristics of individual companies (and thus their size) are taken into consideration, as well as the problem of setting threshold values of the selected criteria.

On the basis of such variables, the following models of multiple ordinary least squares regression are formed:

$$ROA_{i,t} = b_0 + b_1SDA_{i,t} + b_2SG_{i,t} + b_3SIZE_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$ROA_{i,t} = b_0 + b_1LDA_{i,t} + b_2SG_{i,t} + b_3SIZE_{i,t} + \varepsilon_{i,t} \quad (2)$$

$$ROA_{i,t} = b_0 + b_1TDA_{i,t} + b_2SG_{i,t} + b_3SIZE_{i,t} + \varepsilon_{i,t} \quad (3)$$

where b_0 is the constant in the regression model; b_1 is the regression coefficient with independent variables, SDA, LDA, and TDA, respectively, in models 1, 2, and 3; b_2 is the regression coefficient with SG; b_3 is the regression coefficient with SIZE; $\varepsilon_{i,t}$ is the error in the regression model. These regression models allow for the analysis of the impact of independent and control variables on ROA of firm i at time t .

5. RESULTS AND DISCUSSION

5.1. Descriptive analysis

Based on the results of descriptive analysis (Table 1), when it comes to profitability, one can see that the sample includes a wide range of companies, from those that operate at a loss to those who do business with different levels of profit, which reduces average profitability to a level of 7.9%. Bearing in mind the maximum and minimum value of logarithmic sales revenue (SIZE), one can conclude that, despite the fact that all the observed companies, according to the classification in Serbia, belong to a group of large companies, there is a significant difference in the amount of income with which they do business. The rate of sales growth is 14.0% on average, although it should be noted that the sample also includes

companies with a drop in sales, as well as those with sales growth of as much as 313.5%. Detailed analysis reveals that 4.2% of companies have sales growth of over 100%.

Table 1 Descriptive statistics of the observed variables from 2008 to 2010

Variables	Mean	Median	Std. Dev.	Min.	Max.
SDA	0.424	0.445	0.242	0.026	0.988
LDA	0.133	0.171	0.178	0.000	0.903
TDA	0.667	0.614	0.253	0.030	0.988
SG	0.140	0.268	0.453	-0.185	3.135
SIZE	16.121	16.198	1.110	7.208	19.004
ROA	0.079	0.090	0.104	-0.210	0.575

Regarding the leverage of companies, one can conclude that the sample encompasses companies with a very low level of debt, as well as those that obtain almost the entire capital from borrowed sources. Apparently, from the aspect of debt structure, companies prefer short-term borrowing, as the share of short-term debt in total debt is 42.4%, while the share of long-term debt is 13.3%. Evidently, half of the companies have a share of total debt above 61.4% and are, according to the “golden rule of risk equalization”, in the zone of reduced certainty.

Series of studies, based on samples of companies from developed and transition countries, show that developed countries have lower levels of leverage in relation to the transition countries (Rajan and Zingales, 1995, Cornelli et al. 1996). Given that Serbia belongs to the group of countries in transition, high level of leverage is to be expected. However, given the research conducted in the countries of the European Union (Huizinga et al. 2006), on the basis of which it was observed that the average share of debt in total assets of European6 multinational companies was 62%, one can say that the leverage of companies in Serbia is close to the European level.

5.2. Correlation and regression analysis

The nature of links between leverage and profitability of companies in Serbia is mostly evident in results of the conducted correlation analysis, presented in Table 2. The values of Spearman’s coefficient indicate a negative relationship between leverage and profitability, with different levels of significance for short-term and total debts. The values of Pearson’s coefficient also indicate the existence of a negative correlation between leverage and profitability. If one looks at control variables, one will notice that there is a statistically significant negative correlation between sales growth rate and profitability, which indicates the existence of significant business problems in companies in Serbia, while the link between firm size and profitability is not at a statistically significant level.

Multiple ordinary least squares regression obtained values of regression coefficients for all three set regression models represented by formulas (1), (2), and (3). It is evident that the results confirm the results of correlation analysis on the presence of a negative correlation

⁶ The research covered European (Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom) multinational companies and their subsidiaries, whose accounting information is contained in the Amadeus database.

between leverage and profitability in companies in Serbia. Values of regression coefficients and significance levels are given in Table 3.

Table 2 Spearman and Pearson correlation coefficient

Variable	ROA	SDA	LDA	DA	SG	SIZE
ROA		-0.183**	-0.198**	-0.314*	-0.185**	-0.004
SDA	-0.186**		-0.300*	0.733*	0.135	-0.035
LDA	-0.128	-0.257*		0.422*	0.095	-0.058
TDA	-0.356*	0.713*	0.328*		0.191**	-0.076
SG	-0.166	0.369*	0.073	0.438*		-0.543*
SIZE	-0.071	-0.063	-0.073	-0.136	-0.431*	

Notes: Pearson correlations above the diagonal, Spearman correlations below the diagonal. *, ** Denotes statistical significance at the 1 percent, and 5 percent level, respectively.

Table 3 The impact of leverage, growth rate, and firm size on profitability

	Model 1	Model 2	Model 3
Constant	0,347** (2,081)	0,351** (2,117)	0,383** (2,360)
SDA	-0,155*** (-1,714)		
LDA		-0,183** (-2,035)	
TDA			-0,285* (-3,212)
SG	-0,240** (-2,224)	-0,249** (-2,336)	-0,205 (-1,948)
SIZE	-0,140 (-1,305)	-0,150 (-1,408)	-0,137 (-1,321)
R2	0,049	0,059	0,105
F	3,038**	3,461**	5,626*

Notes: *, **, *** Denotes statistical significance at the 1 percent, 5 percent and 10% level, respectively.

Serbian economy in the reporting period faced a drop in operating income of around 7%, doubling of losses to around 45 billion dinars, and increasing leverage. Furthermore, the estimated value of investment decreased by 6.1% (Pejčić and Ilić, 2011), and borrowed resources were directed to financing of working capital and the maintenance of current operations. It is certain that increase of debt would not be a problem if it was accompanied by the growth of the volume of activity and income, which was not the case with the Serbian economy in the reporting period. The negative correlation between short-term debts and profitability was expected, because the observation period was characterized by a high demand of companies for loans for liquidity, to compensate lack of funds and finance fixed assets from short-term sources.

Statistically significant negative correlation was observed between the ratio of long-term debt and profitability, which is probably the result of extremely expensive long-term loans. Disadvantages of long-term loans are confirmed by an increase in total interest expenses in 2010, compared to 2009, by 105.8 billion dinars (Ranković, 2011), and the fact that these loans are usually linked to euro, whose value in the reporting period increased significantly, compared to dinar. The middle exchange rate of the National Bank of Serbia at the end of 2008 was 1 euro = 88.5 dinars, and in late 2010 1 euro = 105.5 dinars. Increase in the share of

expensive long-term debts in the capital structure increases the cost of capital and reduces the value of the company, which is in line with the results of research conducted by Ranković (2011), indicating that the increase in long-term borrowing is accompanied by the increase in loss.

One can also notice a negative statistically significant relationship between total debt and profitability, which points to the fact that any further increase in borrowing leads to erosion of profitability. The reasons for the negative relation between leverage and profitability should be sought in a large increase in interest costs, negative exchange rate differences, as well as poor investment choices, i.e. lack of efficient use of resources. The observed negative correlation between sales growth rate and profitability can be explained by degression of operating income in the observed time period. Degression of operating income can also arise from negative effects of the global economic crisis on the Serbian economy. In this regard, it is worth mentioning that companies in the reporting period had a problem with liquidity, linked with prolongation of time to collect receivables to 128 days (Eurostat), which made the collection of receivables uncertain.

Given the results of the research, one can say that the set hypothesis is accepted. In addition, given the previously mentioned theoretical discussion and empirical research, the study results are consistent with the Pecking order theory and empirical research in developing countries, characterized by a negative relationship between leverage and profitability.

6. CONCLUSION

Numerous theoretical discussions point to the necessity of knowing the advantages and disadvantages of different sources of funding when designing the capital structure, but also the fact that it is impossible to establish a unique and given relationship between debt and own capital that would imply minimal cost of capital and maximum value of the company. This is supported by the view held by Myers (2001), based on which there is no universal theory of capital structure, and there is no reason to expect that such a theory will be set. Series of theoretical discussions have no unified position on the impact of leverage on profitability. If one looks at the results of empirical studies, the conclusion is the same, except that, in developing countries, negative relationship between leverage and profitability is dominant.

Looking at the results of analysis carried out, one can see significantly high share of short-term debt in total assets. In some companies, the share of short-term debt is almost at one hundred percent (98.8%). When it comes to long-term debts, their share ranges from 0% to a maximum of 90.3%, with half of the companies having less than 17.1%. However, if one considers the average share of total debt in companies in Serbia, which amounts to 66.7%, and recent research in the European Union, indicating that the leverage of European multinational companies is at the level of 62%, one can say that debt approximates the European level. However, given the “golden rule of risk equalization”, the companies are in the zone of reduced certainty.

The results of correlation and regression analyses reveal statistically significant negative correlation between: a) short-term debt and profitability, b) long-term debt and profitability, and c) total debt and profitability. Accordingly, the research hypothesis cannot be rejected and the results are in accordance with Pecking order theory and the results of studies conducted in developing countries. The results can be explained by the high share of debt, high interest expenses (which increased significantly in the reporting period), unfavorable euro exchange rate, fall in operating income, reduced or poor selection of investment opportunities, as well

as negative effects of the global economic crisis. Evidently, leverage does not contribute to increase in profitability and it would be desirable to reduce it, use cheaper sources of funding, and/or find profitable investment, as well as strive towards better maturity harmonization of assets and sources of funding.

In addition to the importance of the information obtained, certain limitations of the study should be pointed out, which can be an incentive for future research. The study included only financial reports of companies in the TOP 300 list of the Economist magazine, sorted by the amount of income, so the study automatically excluded financial statements of companies that were not in this list. What is more, the study was restricted to a period of three years, i.e. observed only financial reports from 2008 to 2010, which can be an incentive for a more comprehensive analysis in the future.

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**APPLIED INFORMATICS AND QUANTITATIVE
METHODS IN ECONOMICS AND MANAGEMENT**

MISUSES OF ELECTRONIC PAYMENT SYSTEMS

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Abstract: Security is the biggest problem for individual users of electronic payment systems. In recent decades, owners of these payment systems have devoted much attention to this problem, with intention to create a sense of trust for customers and to eliminate the fear of loss. At the systemic level, the security problem encompasses a broader context. Certain groups of customers misuse the advantages of electronic payment systems to perform illegal financial transactions. These transactions can be used for laundering money acquired in illegal business activities, gambling, financing other illegal activities or terrorism. In situations in which the electronic payment systems provide user anonymity, as in the case of the most electronic money systems, there is a real risk of flow of large sums of money impossible to trace and to prove its origin. The subject of the paper is to review the problem of misuses that are produced by electronic payment systems. The focus of the research is on the problems of money laundering, online gambling and on criminal activities and terrorism financing.

Keywords: electronic payment systems, anonymity, money laundering, terrorism financing, Bitcoin

JEL Classification: G23, G28

1. INTRODUCTION

The first works in the field of electronic payment systems (ESP) are linked to the creation of the blind signature concept (Chaum, 1983), which was supposed to enable the creation of e-cash as a counterpart to the traditional cash. Although the initial considerations were related to the cards as a medium for e-cash, software electronic money has come in the focus of interest with the commercial use of the internet. Thanks to the benefits of the Internet, electronic money can be transferred quickly and economically over long distances. The basic working principle of both concepts was to preserve the user anonymity, as the ultimate objective (Chaum, 1992, Lynch & Lundquist, 1996). The achievement of anonymity was justified by the desire to provide the same working conditions for e-cash, as for physical cash, and to protect customers' privacy. However, this has created space for numerous illegal activities such as the use of electronic money for paying illicit goods on the "dark web".

Commercial failures of early electronic money systems have given impetus to the creation of a new class of ESP. Unlike electronic money, these systems have not created a new form of assets, but they represent mechanisms which operate under the existing payment infrastructure. Therefore, using these systems leaves a trace in the financial organizations accounting, and *de facto* they are not anonymous. Nevertheless, the possibility of a quick funds transfer over long distances, including cross-border transactions and low transaction costs, has made these systems attractive for certain types of illegal activities.

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EPS enable the transmission of large amounts of funds in a short period of time. The transfer could be executed without a problem, not only across borders but also between users from different continents, which further complicates the ability to monitor the movement of funds. Certain illicit activities, for whose implementation a lot of skills were required earlier, are now available to a wider circle of unscrupulous users. The question of damages created by the misuse of ESP rises more and more frequently. The difference between misuses and frauds is that the misuses are carried out in full accordance with the rules of the system. There is no shattered party, no one's privacy or funds have been compromised.

The subject of the paper is to review the problems of misuses of electronic payment systems. The aim is to link certain payment systems and techniques for their use with certain aspects of misuse. In this way, one can acquire a clearer image of the problem and approach to the prevention and detection of fraud strategically.

In the first part of the paper, the subject of analysis is the money laundering process and changes in the approach to this illegal activity due to the ESP use. The second part of this paper analyzes the misuse of online betting and gambling. The third part covers the principles and examples of criminal activities and terrorism financing. Finally, in the conclusion, the measures for misuses detection and prevention are proposed.

2. MONEY LAUNDERING

Money laundering involves the process of moving funds acquired through illegal activities into legal channels (Levi & Reuter, 2011). Criminal activities such as drugs and weapons trafficking, smuggling oil, alcohol and cigarettes, slavery, extortion and racketeering generate a large amount of money, which is typically in the form of cash. The problem for the owners of this acquired money is that the cash is impractical to handle. Transporting large amounts of cash requires shipping costs, attracts the attention of the authorities and other criminal groups, and thus creates the risk of loss. This is why the owners of dirty money try not to accumulate cash, but to invest it in certain types of assets so that it becomes part of the legal flows. Dirty money can come from legal activities too, as a result of tax evasion, staging business activity, flat-rate charging for consulting and marketing services, etc. Reuter and Truman (2004 pp.4) call these activities white-collar crime.

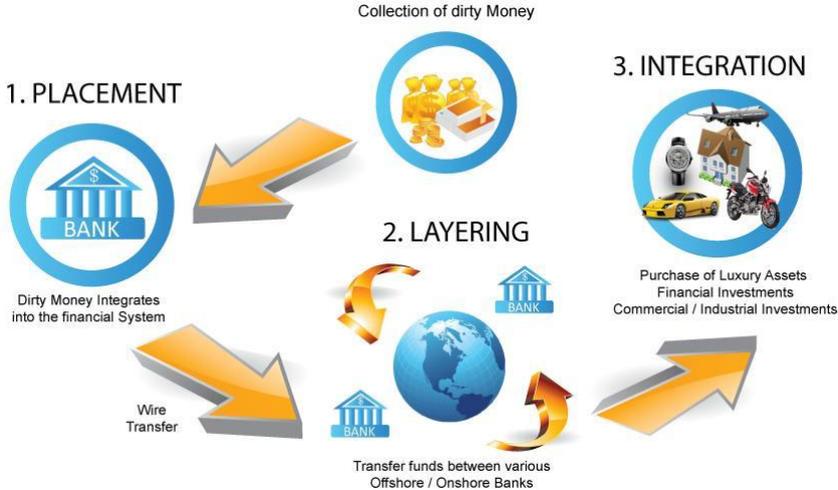


Figure 1 Stages of money laundering

Source: <http://kycmap.com/what-is-money-laundering>

The process of money laundering takes place through three key stages: placement, layering and integration (as on Diagram 1). Stage of placement is the initial phase of introduction of dirty money into legal businesses, usually through breaking the sum that should be laundered into several smaller amounts which are then deposited on bank accounts. In the layering stage the goal is to blur the movement of funds through a network of transactions between related entities, members of organized groups or their associates. Integration represents the reunification of significant financial resources in one place with a seemingly legal origine, ready to be invested in legal businesses (OECD, 2009).

The simplest form of money laundering is its physical transport across the border. There are numerous examples of criminal groups that organized money transfer to neighbouring countries, and often in distant countries, with the aim to remove trace of illegal funds flow from the place of criminal acts. Ping (2005) cites two examples of criminal groups. The first was arrested at the airport in Miami in 1988 in an attempt to transfer 30 million \$ by the plane, hidden in cosmetics, food, clothes, electronics and even tennis balls. The second was exposed in 2001 in Hong Kong, when trying to transfer 10 million HKD by the plane. Subsequent investigations revealed that this was only one action of the group that over the years managed in the same way to transports up to 850 billion HKD, and to deposit them to 1300 different accounts. In order to prevent such activities, national legislation introduced maximal amount of money that an individual can poses when crossing the border, while the larger amounts must be reported to the border police. An alternative to this process is the purchase of high-valued assets such as precious metals, precious stones, paintings, expensive cars, or designers' wardrobes. Such assets are more easily transported across the border, or later resold which would launder the money. Besides, for almost all mentioned types of assets exists a developed black market. The third form of the classic money laundering is direct investing in legitimate businesses. Criminal groups mostly invest in bars and restaurants, whose trading volume is more difficult to monitor and to prove the flaws in business, but also to other service companies, whose trading volume and prices may be feigned.

By creating ESP, the faster transfer of funds over the great distances is enabled, which is especially suitable to money laundering activities. Organized groups don't need to physically move money across the border anymore, because the ESP transfer is not only faster, but also safer. Electronic money, operational from the mid-nineties, through the concept of anonymity gave opportunities not only for the transfer of illegal funds, but also for financing illegal activities. Wearden (2001) mentions the situation when a gang of Russian hackers used the stolen credit card data to invest funds in electronic money Flooze. Spending funds from the cards to purchase products would bring into doubt the recipient of payment or delivery address, while with investing in electronic money this funds were practically laundered.

The use of electronic money for laundering illegal funds has a critical moment only on the first purchase of electronic money, especially when investing funds. Since number of electronic money systems requires payment via an intermediary, that is, via bank accounts, the purchase leaves a written trace. In essence, this trail itself is not enough, because payment can be made with fake documents, and e-money account can be held in the name of the person whose identity has been stolen. However, frequent payments addressed on the same person, especially if amounts are large, can be suspicious and it is a basis for an investigation. Some systems allow the direct purchase of electronic money for cash, thus avoiding even this initial problem. Once funds are paid, they can be transferred between the customers anonymously, so the recipient, who could be in another country, but also the same person under different name, can legally receive e-cash and exchange it for convertible currency. In doing so, the recipient can register online store as a cover, which would justify the huge inflows of electronic money in the future. By selling e-cash and depositing convertible

currency to a current account, illegal funds become legal. Straub (2002, pp. 521) states that traditional methods, which are based on accounting track have no effect on the fight against the electronic money laundering. US authorities, using the Patriotic Act, downed site of electronic money Liberty Reserve, on suspicion that it was a cover for laundering money from tax havens (Zetter, 2013).

Another large group of ESP, which relies on existing payment infrastructure, offers greater possibilities for preventing misuses. By the fact that these systems are based on traditional infrastructure, their operation relies on intermediaries and current accounts, and there is a written record of the transactions carried out. PayPal and similar systems require personal data during registration, as well as information on payment instruments and confirmation of ownership of the instruments. In this way, all payments are easy to track by amounts and participants, which is not a problem in itself, but at a later stage can be used as an evidence.

While the known mass-used systems are under the supervision of the public and the authorities, there are a number of lesser-known systems, whose business can be characterized as more flexible. These institutions are often registered as banks, for example Payoneer and Skrill, and allow users to apply for their payment cards. The procedure for obtaining a debit card is much less rigorous than at traditional banks, so users can apply online, without the need to personally prove that they are really who they claim to be. The cards are delivered to home address with free shipping, and from that moment the funds paid on the account that is connected to the card can be freely used. Since those cards are branded by top brands such as MasterCard or Visa, they are accepted at almost all POS and ATM terminals. Particularly, one customer can pay the money into account in one country and the other customer in another country has those funds available for spending almost simultaneously. Thus, issuer companies earn based on a commission for spending/raising money.

It should be added that recently cards that allow connection with Bitcoin accounts emerged, wherein the user can raise convertible currency at ATMs or pay at retail based on the exchange rate conversion of Bitcoin to that currency. The website WeUseCoins has analyzed the available debit cards and identified three currently dominant in terms of price and availability for use. Visa card issued by the Bitcoin payments processor, the company BitPay, can perform as any other card in terms of raising money, paying in retail and over the Internet. In combination with the level 99% of anonymity that Bitcoin offers, these funds are almost impossible to track. The same user may purchase Bitcoin, send it through 2 or 3 own accounts which are hard to connect, and then to use those funds from one of these accounts via credit card.

3. ONLINE BETTING AND GAMBLING

The problem of online betting and gambling is closely related to money laundering and tax evasion (McMillen, 2003). Since the beginning of commercial use of the Internet, various forms of online gambling and betting have been available to users. On the one hand, the traditional casinos have increased their reach by introducing the possibility of betting over the Internet and they enrich the offer with live bets. On the other hand, there are brand new online sportsbetts and casinos that operate without physical branches. Often, they are located in the so-called tax havens, offshore centres in Caribbean archipelago. Agar (2009) states that the best example are Antigua and Barbuda, which starting from 1994 grant licenses for registration of online casinos. In this way, not only that paying taxes to those countries whose customers are targeted is avoided, but also the ownership structure remains unclear.

Table 1 Number of online casinos registered in Dutch Antilles

1996	1997	1999	2002	2012
15	200	650	1800	2300

Source: Schwartz, D.G. 2006; Banks, J. 2012

Online casinos offer great opportunities for money laundering (Hugel & Kelly, 2003, Brooks, 2012). The origin of the funds invested by the user is not audited, nor there is an obligation to use all invested funds. In practice, this means that users can pay a large sum for gambling from one account, play a few rounds with the use of a small part of the available funds, and then request payment of winnings. All available funds, even those that were not used for games, are then paid on account which user requests. In this way the payment of dirty money is legalized. A casino benefits from this activity because it charges a commission, maintains the number of players and it is constantly available, so players often return. McMullan and Rege (2010) cite three examples of organized crime groups that via systems of fictive users account for betting and gambling performed money laundering and tax evasion: Giordano, Uvari and Corozzo groups.

In order to prevent these types of money laundering the government of US repeatedly initiated the adoption of regulation on online casinos. Adoption of the regulation was repeatedly postponed due to lack of consensus in Congress. Schopper (2002, pp. 307) analyzed the drafts of these laws and concluded that they all had serious shortcomings, comparing them with Prohibition. The same author notes the evolution of the subject of regulation of these laws: the first proposal (Senator Kyle), in the mid-nineties of the twentieth century, sought to punish an individual for taking part in online gambling. Subsequent proposal (senator Goodlatte), at the turn of the millennium, had for the subject of regulations casinos that were located in offshore centres. However, in May 2000, the Committee for Banking and Finance proposed to ban payments to the accounts of well-known casinos via wire transfer or credit cards. The idea of this regulation was to block funding sources in order to prevent money laundering and its forward to illegal activities. The proposal was rejected, but after the terrorist attacks of 11 September 2001 it was suggested again as a package of anti-terrorist measures to President George Bush. Schopper (pp. 311) has pointed out the absurdity of this law. While it would be illegal for customer to use his/her credit card to fund his/her account at the casino, it would be perfectly legal to use the same credit card for purchasing electronic money, which can later be used for funding his account at the casino. Risk from electronic money as an intermediary would stultify the adoption of law, so it was finally expelled from the proposed legislative package.

Online betting has become a frequent problem in recent years. In Serbia, especially popular is online betting on horse racing, which takes place several times a day. Users can place bets during the day, before the race and during the race. As the access to online betting companies that offer these services is restrictive, users have found a way to invest funds and to charge winnings via alternative payment systems. This is primarily Skrill, which, since it has been registered as a bank, offers the possibility for user to open own accounts, and obtain a debit card linked with this account. Since these are the cards branded by MasterCard or Visa, they are accepted at almost all POS and ATM terminals. In this way, users who achieve income spend their money directly, without withdrawal to local banks. Skrill makes profits on the exchange rate difference and the commission, and users avoid paying taxes.

4. CRIMINAL ACTIVITIES AND TERRORISM FINANCING

Although terrorism financing is basically connected with money laundering, flow of cash goes into opposite direction. During money laundering, a criminal group tries to convert funds acquired in illegal activities into legal properties or money which could be used via account, without legal problems. During terrorism financing, a criminal group tries to use legal money (when we talk about donations) for illegal activities such as buying weapons and equipment, paying membership or action organizing. In other words, it is necessary to channel funds that often could not be transferred into cash because of the distance or amount of it, through legal flows so that in the end it could be used for illegal activities.

Quick fund transfer and difficulties in monitoring cash flow enabled by electronic payment systems, is beneficial for financing of criminal and terroristic activities. Design of electronic money system which faithfully imitates paying in cash in physical environment contributes to this as well. Due to this fact, these systems provide anonymity of its users in the transaction, thus preventing discover of real payers and recipients of the funds, as well as the purpose of the transaction. The use of other electronic payment systems for these purposes is not suitable because they leave written traces which can lead to connecting amount with participants.

Recent examples show that the electronic payment systems can be used not only in terms of criminal activities financing but that this is one of their primarily purposes. At the same time, criminal financing is tightly connected with money laundering, because while on the one hand it allows paying for illegal activities and products, on the other hand the electronic money allows to the final recipient to acquire completely legal funds by selling these money and saving it on the current account. Bitcoin, the most dominant electronic payment system nowadays, is addressed several times as “dark side of web”. Almost complete anonymity that Bitcoin enables, along with the great marketability of this money, have influenced this system to be the choice for paying whole range of illegal activities. The user manages Bitcoin coins via a programme named digital wallet. All coins in possession could be located on one account, or divided on many accounts, but user can access all of these accounts via same digital wallet (Baxter-Raynolds, 2013). There is no way to connect an individual with the specific account, as long as somebody does not indirectly identify the owner. However, because there is a total overall of transactions ever performed (Koss & Koss, 2012), it is possible to determine frequent transactions between specific pairs of accounts. In the situation when one of the owners is identified, it is possible to track the owners of other accounts who has received and sent payments. In that way, in the specific circumstances it is possible to break the anonymity network.

One can access to dark web using special browsers named TOR (the onion routing) so it is unavailable to the ordinary users. While the users of conventional internet are easily recognizable because of their IP addresses (Liška, Sochor & Sochorová, 2011), the users of dark web hide their location through redirection of the content over whole line of other users. In that way, the identity of the user who requests the access to the specific content nor the server on which is the content located is never known. The possibility for hiding identity of users has stimulated the creation of numerous sites that deal with the trade of illegal goods and services.

The most famous example is definitely Silk Road, a website which practically represents a copy of the most famous auction website eBay, on which one can buy weapons, narcotics, pornography, stolen credit cards, fake personal documents and other illegal good (Van Hout & Bingham 2013). Bitcoin coins are used as the only mean of payment. Because of the rapid changes of value, users frequently buy and sell Bitcoin as investment mean, so there is a

developed secondary market, as it is the case with very marketable securities. In this way, illegal good sellers can rapidly and easily get the convertible money. With this, the cycle of criminal activities financing and money laundering is closed. On October 2013 FBI arrested William Ulbricht on charges that he had launched and managed website Silk Road under the nickname “Dread Pirate Roberts”, and the website was shut down. FBI estimated that the total turnover of website was over the billion of US dollars, or precise 9,5 million of Bitcoins (Konrad, 2013). During the trial it was unambiguously proved that the Ulbricht participated in launching and managing website, but based on the confiscated communications it was found that the organizer whose alias was “Dread Pirate Roberts” was still free (Greenberg, 2015a). Ulbricht was found guilty and sentenced to life imprisonment without the possibility of parole, which was higher sentence than the prosecutor requested (Greenberg, 2015b).

Based on this example, the possibilities for illegal activities financing are clear. When a legal entity receives a large amount of money on its current account, it must have proper invoice for products which it has delivered or services it has provided. Recipient of electronic money does not need to have an invoice, he even does not need to be registered as a legal entity. Individual can receive payment in large sum of electronic money without any cover or excuse. Of course, if in one moment conversion of very high amount of electronic money into physical money occurs, it can draw attention of government, so the individual can be the subject of investigation but basically, frequent payment of lower amounts of money, or transfer of specific amounts from one user to bigger groups are completely unnoticed. Bitcoin further complicates the situation, because it is a decentralized system with no unique supervisory authority for transaction monitoring. All previous electronic payment systems depended on a legal entity which provided all organisational-operating jobs, from issuing, over transfer, to conversion and preparation of reports, so those legal entities could react when they noticed illegality. When it comes to decentralized currencies such as Bitcoin, there is no this control function.

There are two sources of financing terrorist activities – donations and incomes of terrorist groups’ members. Incomes of terroristic groups are almost by the rule connected to the criminal activities, like drug and oil smuggling, weapons trafficking, kidnapping, extortions or robberies. For example, Islamic state pays the biggest part of their activities with illegal selling of oil confiscated in Iraq and Syria (FATF, 2015). On the other hand, donations could not originate only from illegal activities. Wealthy individuals from many countries support terroristic groups on the grounds of their ideological and religious orientation (Cooker, 2016). The money used in terrorism usually is collected by various non-governmental organizations and nonprofit funds that are registered for charity work or for the promotion of education, sports or culture in the target areas. Instead of those purposes previously mentioned, the funds are then used in a terroristic groups training camps or for purchasing of weapons or equipment, as well as for paying their members. Payments are usually smaller but more frequent so that it does not draw attention of the authorities.

Electronic payment systems have facilitated the possibility for collecting funds at great distances. The particular challenge of 21st century is decentralized terrorism financing because donors have the opportunity to transfer great amount of money quite quickly, and secretly covering the purpose of fund to which money is paid. There are no complete data about the use of electronic money for the purpose of terrorism financing. Bearing in mind the extent of the use of different electronic payment systems for paying other illegal activities and money laundering, it could be supposed that the scope is significant.

5. CONCLUSION

It has already been concluded that there is a high risk of misuse of electronic payment systems. The ability to transfer funds quickly and cross-border payments on the one hand create the additional value for legal businesses, but also open a wide range of opportunities for misuse. Besides traditional hackers who usually perform isolated attacks on the ESP, organized crime groups use the systemic advantages to perform unauthorized transactions. Also, current regulations and standards for fighting money laundering and tracing flows of crime and terrorism financing are not suitable to fight against new methods of money transfer. Existing standards are based on the accountant monitoring of funds, payers and recipients, but a large part of the ESP offers payment anonymity. With the use of electronic money, it is almost impossible to identify not only the participants in the transaction, but the amounts of funds too. Therefore, there is a need for alternative approach to the fight against these misuses.

At the moment there are more than 30 copies of electronic money Bitcoin. Alphacoin, Litecoin, Dogecoin are just some of the names of electronic currencies, which are based on the same decentralized principle. Unlike the website that deals with traffic of illegal products, Bitcoin is impossible to unilaterally shut down because of the decentralized nature of this currency. Even if it would be possible, there are previously mentioned group of currencies that would take its place. The solution is not to ignore this new medium for value transmission via Internet, but to regulate it. In recent years, authorities of US, EU, China and Norway have repeatedly refused to accept and regulate Bitcoin. Instead, this money is now quasi-legal, its users are not protected but are free to misuse it. With Bitcoin regulation the registration of users could be required, and there could be mandatory to notify every payment and amount beyond a specific limit. Those limits could cumulatively function on a periodic basis, so that each user whose payments in a specific period exceed limit could prove its origin. Another approach is to regulate Bitcoin and similar currencies like financial instrument, thereby a customer would have a separate account only for electronic currencies trade with the obligation to pay tax on capital gains.

Besides the limit policy, another important point is insisting on a "know your customer" policy. It is unacceptable to permit some companies to issue branded payment cards without authentication of customer's personal data. Using forged documents, individuals can open a series of accounts at different companies of this type, and create a network of transactions to hide the flow of illegally acquired funds. All regulations and standards which are based on accountant monitoring become powerless when accounting records are fictive. Along with individual companies, a major role in the creation of this non-transparent situation is played by offshore centres, where exist a large number of shell companies that charge for their services to related legal entities with the aim for money laundering and tax evasion. This is not only an international problem, but also a political problem.

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MEASURING THE EFFICIENCY OF ECONOMY OF THE REPUBLIC OF SERBIA USING DEA METHOD

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Abstract: *The paper presents the application of non-parametric techniques of Data Envelopment Analysis - DEA for measuring efficiency of the economy of the Republic of Serbia. High GDP growth rate, low rate of inflation, and desirable rate of employment are main objectives of a nation's policy makers. Based on the selected macroeconomic input and output indicators, we apply version of an output - oriented DEA model and measure the relative macroeconomic performance of Republic of Serbia for period 2005-2015.*

Keywords: *Data Envelopment Analysis, Linear Programming, National Efficiency, Macroeconomics Performance*

JEL Classification: *C67, C82, O10*

1. INTRODUCTION

Macroeconomic stability is the primary goal of economic policy of each country. It is present in the national economy which is characterized by the absence of excessive fluctuations or extreme volatility of macroeconomic indicators. It implies price stability, a high level of employment and payments deficit balance, with a stable economic growth.

The broad objective of macroeconomic policy is to contribute to economic and social well-being in an equitable and sustainable manner. The primary goal of macroeconomic stabilization policies should be to achieve stable economic growth. Price stability plays an important role through impact on investment decisions. Because unemployment is the main cause of poverty, a critical task is to maintain the economy in high level of employment.

To examine the evolution of macroeconomic stability we look at the behavior of macroeconomic outcome variables including the growth of gross domestic products (GDP), the rate of inflation and level of employment. A high growth rate as indicated by the change in gross domestic product, GDP, a low rate of inflation as depicted by the change in consumer price index (CPI), and a high rate of employment are main targets or missions of a nation's macroeconomic policy maker (Mohamad, Said, 2011). In decomposition of the GDP, from the spending point, consumption, investment, government spending and net exports are present (Blanchard, 2005). Therefore, government spending generates a strong impact on other macroeconomic variables.

Data Envelopment Analysis (DEA), variant of linear programming, provides the required weights and then analyzes relative macroeconomic performance (Lovell et al. 1995). DEA was developed by Charnes, Cooper and Rhodes (1978) to evaluate the relative performance of a collection of similar public sector units which provides multiple services that are not all

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priced on markets. DEA deals with evaluation of the performance of Decision Making Units (DMU) performing a transformation process of several inputs several outputs (Bouyssou, 1999). It can be concluded that data envelopment analysis is a set of models and methods that are based on linear programming which provides a means for calculating the efficiency of the units within the group organization. Although DEA was originally intended for use in microeconomic environments, it is ideally suited for the macroeconomic performance analysis. DEA is appropriate analytical technique for evaluating the relative macroeconomic performance of nations.

The aim of the paper is to review the relevant literature and to measure efficiency of economy of Republic of Serbia using DEA method. Inputs and outputs which are used in the analysis are the main macroeconomic indicators. The basis for this empirical analysis was found in the work carried out by (Mohamad, Said, 2011) who used DEA to estimate how well the nations of the Organization of the Islamic Cooperation utilize their recourses.

The paper is organized as follows. The first section provides a review of the literature using DEA method for measuring efficiency of main macroeconomic indicators. The second part presents the methodology of the Data Envelopment Analysis. The third part provides the description and structure of the problem, after which the corresponding DEA method is applied. Next steps will be overview of the results and their interpretation. At the end of the paper, the conclusions with appropriate guidelines will be given.

2. LITERATURE REVIEW

There are a variety of literature that deals with the usage of DEA method for measuring the efficiency of the national economy. Different combinations of macroeconomic indicators can be taken as inputs and outputs within DEA method.

Lovel (1995) used mathematical programming technique called FDH analysis, a variant of the more familiar, but more restrictive DEA method. He used four indicators to measure the macroeconomic performance of Taiwanese economy. That indicators were GDP growth, the employment rate, the disinflation rate and trade balance. Also, Lovel et al. (1995) study macroeconomics performance of 19 OECD countries over the period 1970-1990. This authors developed an alternative DEA model, one which incorporates service slacks into the performance evaluation in an economically meaningful way. Martic et al. (2001) used DEA method to estimate how well regions in Serbia utilize their resources. Based on data for inputs and outputs they applied an output-oriented CCR DEA model and it appears that 17 of 30 regions are efficient. Otherwise, Despotis (2005) extended the applicability of the DEA model with variable returns to scale to estimate the relative efficiency of countries in Asia and in the Pacific in converting incomes to human development. However, balanced economic growth has to be accompanied simultaneously by resource and environment conservation in a sustainable world. A high growth rate (as indicated by the change in gross domestic product), a low rate of inflation, a low rate of unemployment and a favorable trade balance are four main targets or objectives of a nation's macroeconomic policy makers. These performance indexes are referred to literature as the "magic diamond" of OECD (Organisation of Economic Cooperation and Development) with its four vertices synonymizing the four indicators. The sum of the inflation rate and the unemployment rate defines the undesirable Okun's "misery index" and provides a pessimistic measure of the macroeconomic performance of a nation. An alternative undesirable measure is provided by the Calmfor's index, defined as the difference between the unemployment rate and the normalized trade balance. Several studies on measuring, evaluating and assessing macroeconomic and

development performance of regions, cities, provinces and nations have been conducted and reported in the literature (Mohamad, 2007). Also, many developing countries like BRICs (Brazil, Russia, India and China) are becoming influential in the economic growth of the world, among those nations, China has achieved the highest level of economic development and growth and is endeavoring to attract foreign direct investments (FDI) to successfully develop their economy. Data envelopment analysis can evaluate performances of these economies (Lin et al. 2011). Suzuki et al. (2016) measure energy-environment-economic efficiency with two inputs (energy consumption and population) and two outputs (CO2 and GDP), including a fixed input factor related to population. Our work is specific in a way that our idea is to measure the efficiency of the economy of the Republic of Serbia within a period of 11 years. Every year is one decision making unit.

3. METHODOLOGY

The creators of the DEA, Charnes, Cooper and Rhodes have proposed a mathematical approach to calculate the efficiency of which is non-parametric techniques, i.e. it does not require a specific functional form. It is used to evaluate the performance of Decision Making Units (DMU). They have reduced multiple inputs to a single "virtual" input and multiple outputs reduced to a single "virtual" output using the weight coefficient (Charnes et al. 1978). DEA methodology proved to be adequate to evaluate the effectiveness of non-profit organizations that operate outside the market, because in their case performance indicators such as revenue and profit do not measure efficiency in a satisfactory manner.

Unlike typical statistical methods, data envelopment analysis is based on extreme observations comparing each decision making unit only with the best of DMU. If the unit can be done then it is relatively ineffective, and if not, it participates in the formation of border efficiency that is equivalent to the marginal production function. General DEA model is formulated in the following manner (Charnes *et al.*, 1978):

$$\max h_{j_0} = \frac{\sum_{r=1}^s u_{rj_0} y_{rj_0}}{\sum_{i=1}^m v_{ij_0} x_{ij_0}}$$

Where:

- y_{ij} = output value; x_{ij} = input value
- u_{rj} = weight coefficient of output y_{rj}
- v_{ij} = weight coefficient of input x_{ij}
- $r = 1, 2, \dots, s$ = number of achieved products
- $i = 1, 2, \dots, m$ = number of used resources
- $j = 1, 2, \dots, n$ = DMU number

However, DEA method can be exposed through several models. Some of them are DEA model with constant returns to scale (CCR), dual CCR model and DEA model with the variable yield on the scale (BCC) (Seiford et al. 1998). In the paper will use the model with a constant yield on the scale that can be written as follows: (Cook *et al.* 2009):

$$(\text{Max}) h_k = \frac{\sum_{r=1}^s \mu_r y_{rk}}{\sum_{i=1}^m v_i x_{ik}}$$

s.t.

$$\frac{\sum_{r=1}^s \mu_r y_{rj}}{\sum_{i=1}^m v_i x_{ij}} \leq 1, \quad j = 1, 2, \dots, n$$

$$\mu_r \geq 0, \quad r = 1, 2, \dots, s$$

$$v_i \geq 0, \quad i = 1, 2, \dots, m$$

Where: h_k – relative efficiency of k DMU; n – DMU number that can be compared; m – input number; s – output number; u_r – weight coefficient for output r ; v_i – weight coefficient for input i .

The above model shows the overall technical efficiency, which includes pure technical efficiency and effectiveness, which are a consequence of the different scope of operations. The main objective is to maximize value h_k by making each DMU assigns a value to a variables u_r and v_i that will present it on a better and more efficient way (Ozdemir, 2013). In our work new CCR model (output-oriented) was presented, that calculates the relative efficiency of the economy of the Republic of Serbia. The model is of the non-parametric type and is based on a linear programming technique which has already been shown. The period of 11 years was considered, and each year presents one decision making unit (DMU). In order to obtain reliable results, it is necessary to apply an adequate analysis of the efficacy variables as dependent on the quality of the selected output, i.e input values. From studied literature can be seen that there is not quite clear attitude which to macroeconomic variables are most appropriate to describe the problem. In various studies different combinations of variables were mentioned. The most commonly used in the literature are taken for input and outputs in the work. For the input *General government final consumption expenditure (% of GDP)* is taken, and as for the outputs *GDP growth (annual%) Inflation, consumer prices and Labor force participation rate* were taken. Collected data were taken from the site of the World Bank, and are shown in Table 1. By applying this model, the evaluation of the relative level of efficiency for each year of the mentioned period (2005-2015.) in relation to the other, will be carried out.

Table 1 Structuring the DEA Model for Evaluating the Efficiency of the Republic of Serbia Economy

DMU	General government final consumption expenditure (% of GDP) Input	GDP growth (annual %) Output 1	Inflation, consumer prices (annual %) Output 2	Labor force participation rate Output 3
2005	19,5	5,54	16,12	50
2006	19,31	9,9	11,72	51
2007	20,18	10,89	6,39	51
2008	19,45	12,37	12,41	51,4
2009	18,83	1,88	8,12	48,9
2010	18,48	5,58	6,14	46,9
2011	18,18	6,4	11,14	46,4
2012	18,56	3,98	7,33	46,7
2013	17,76	7,58	7,69	48,5
2014	17,73	3,17	2,08	48,7
2015	16,95	5,73	1,39	49

Source: <http://www.worldbank.org/6.10.2016>.

4. RESULTS AND DISCUSSION

Based on the collected data which were analyzed using the software package *DEA Frontier* the following results were obtained as shown in Table 2. The average relative efficiency of the observed decision units is 0.97, which means that each year 97% of the inputs on average should be used in order to achieve the same value of the results and effective functioning of the Republic of Serbia economy. If we look at each decision unit in particular, on the basis of the results obtained, it can be concluded that a relatively efficient years have occurred in 2005, 2008 and 2015. Of course, the obtained efficiency rating depends to great extent on a selected macroeconomic variables that are the subject of analysis. A deeper analysis and insight into the concrete results can reveal that the macroeconomic indicators do not contribute to increasing efficiency.

That is, you can see how much work is required to increase (decrease) a certain input variables in order to achieve the same level of output, if the input variables are used in an efficient manner. On the other hand, DEA method for efficiency analysis can easily lead to incorrect conclusions, therefore, only concrete and obvious conclusions should be kept.

Table 2 Efficiency of the National Economy of the Republic of Serbia for the Period 2005-2015, Measured by Applying DEA Method

Output – oriented CCR model		
DMU No.	DMU Name	Efficiency
1	DMU 1	1,0000
2	DMU 2	0,99428
3	DMU 3	0,93832
4	DMU 4	1,00000
5	DMU 5	0,95193
6	DMU 6	0,91696
7	DMU 7	0,96416
8	DMU 8	0,91890
9	DMU 9	0,99844
10	DMU 10	0,95606
11	DMU 11	1,00000

Source: Authors

Table 3 Target Efficiency of Input

DMU No.	DMU Name	Efficiency Input Target General government final consumption expenditure (% of GDP)
1	DMU 1	19,50000
2	DMU 2	19,19958
3	DMU 3	18,93531
4	DMU 4	19,45000
5	DMU 5	17,92480
6	DMU 6	16,94546
7	DMU 7	17,52839
8	DMU 8	17,05470
9	DMU 9	17,73230
10	DMU 10	16,95095
11	DMU 11	16,95000

Source: Authors

Table 4 Target Efficiency of Output

DMU Name	GDP Growth (annual %)	Inflation prices(annual %)	consumer	Labor force participation rate
DMU 1	5,54000	16,12000		50,00000
DMU 2	9,90000	11,72000		51,00000
DMU 3	10,89000	9,93039		51,00000
DMU 4	12,37000	12,41000		51,40000
DMU 5	5,57774	8,12000		48,90000
DMU 6	5,58000	6,14000		46,90000
DMU 7	6,40000	11,14000		46,40000
DMU 8	5,33566	7,33000		46,70000
DMU 9	7,58000	7,69000		48,50000
DMU 10	5,68033	2,08000		48,70000
DMU 11	5,73000	1,39000		49,00000

Source: Authors

DEA methods measure and target efficiency of inputs and outputs, and their values are shown in Tables 3 and 4. The target shows that the economy of the Republic of Serbia can be stable and get the same output value if some input values were lower in the observed period. If we consider only the input, i.e. *General government final consumption expenditure*, we see that the target and actual values for the relatively efficient years were equal. However, in all other years the same relative efficiency would be achieved if the real value of government spending was lower for the value of the difference between the target and liberal values. If we now consider the real and the target values of the outputs, it is interesting that at the output *rate of inflation* in 2007, inflation could have been increased by 3.54% and the change in relative efficiency would have been avoided.

5. CONCLUSION

According to the obtained results, within the observed period, the Republic of Serbia was effective in 2005, 2008 and 2015. Although a relatively high average annual rate of GDP growth of 5.4%, was achieved in the pre-crisis period (2001-2008), the model of economic development was realized through the creation and use of GDP with an unfavorable structure, and a high amount of foreign capital inflow (through direct and portfolio foreign investment, and later, with the crisis outbreak, by direct foreign borrowing) (Filipovic, 2015). In addition to the obtained results, in the period from 2005 to the beginning of the crisis, in August 2008, the Republic of Serbia recorded a strong growth in exports and an increase in the value of the dinar (Petrovic, 2011). However, the effects of the world economic crisis followed, thus, a slight recovery in economic activity in 2010 was not enough to get the economy back on the same level from 2008.

The year 2015 was effective because the Serbian economy emerged from recession in which it entered in 2009. There has been growth in GDP, a fiscal adjustment and structural reforms have resulted in improving the business environment and the realization of major investment. Although economic growth was not too dynamic, it changed the paradigm of growth, because it was based on sustainable sources, exports and investments. This is accompanied by increased employment, particularly in the services sector, which signaled an improvement in entrepreneurship. According to the National Bank of Serbia, the average inflation was lower than planned because of continued guide by appropriate monetary policy, and inflation in the international environment was low. Also encouraging was the fact that there had been a need

for fiscal consolidation and steps were taken in order to reduce public spending (Kalas et al, 2016).

This work provides an adequate basis for further research dealing with macroeconomic indicators measuring efficiency. The aim was to show that a multi-criteria methods such as DEA can be applied at the macro level. Also, the research can be extended to a larger number of countries, which will enable obtaining adequate and applicable results.

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ESSENCE OF INTERNATIONAL PRODUCTION NETWORKS: INSTITUTIONAL ANALYSIS

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Abstract: *The paper justifies the need for studying international production networks in the context of the development of production placing theories, of institutional, neoinstitutional and neoclassical theories. This allowed to identify the main stages of network theory based on historical analysis of network structures in the following sequence: Standort theory, the theory of industrial districts, the theory of clustering and the modern theory of networks, which helps to identify the distinctive features of the modern variants of the network of inter-organizational interactions and develop recommendations to improve their effectiveness. The definition of a network is clarified, it being understood as a system of informal contracts between independent but interconnected economic agents aimed at optimizing the combination and use of resources, including explicit and implicit knowledge, which enable them to obtain or maintain a competitive advantage; the proposed definition, supplemented by the definition of a number of other characteristics of a network, allows it to be distinguished from a variety of other modern forms of interaction between economic agents. A distinction is made between the concepts of a physical distance (as the distance between two points in space), economic and institutional distances, where economic distance reflects the costs associated with overcoming a physical distance, and the difference in the level of economic development, while institutional distance is characterized by the level of inter-organizational cooperation. The role of these distances in the formation of networks, which is expressed not only in reducing the physical and economic distance between economic agents, but also the institutional distance, is described. The features of value chains and production networks are identified. The former is defined as the vertical sequence of manufacturing processes (adding value) that ensure the supply, use and maintenance of certain goods or services. In turn, a "Production network" is two or more value chains, which involve at least one common economic entity (connection point of the network). Taken together, each network includes vertical and horizontal links between economic agents, i.e. the same economic agents are often involved in a variety of dynamic and constantly changing value chains.*

Keywords: *Network, vertical integration, innovation, technological development, international production network value chain, value added, disintegration.*

JEL Classification: *F 60, O 30*

1. INTRODUCTION

The world economic system is entering a new phase of its development, which is characterized by the transition from industrial to post-industrial mode of production with an innovative focus. This transition marks the formation of the sixth technological order with the new leading industries focused primarily on high technologies. As a consequence, the ability to continuously produce new knowledge - the basis for the introduction of technological, product and organizational innovation - becomes a key factor in the competitiveness of national economy.

Ukraine, like other emerging economies, solves the issue of transition to innovative development and competitiveness. One method of overcoming the backwardness in relation to

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leading economic powers, which are already on the threshold of the sixth technological order, is the active use of new forms of business network integration. Today's networks are an adequate way of flexible integration of business entities that corresponds to the dynamic changes taking place in the technological mode of production in the transition to a post-industrial economy by combining the advantages of hierarchical and market structures and reducing transaction costs (TS) that mediate the interaction of economic agents.

The relevance of the chosen research topic is also determined by the fact that the current production of goods and services is becoming increasingly organized in complex network organizational forms that connect a lot of members around the world with different economic power and influence into a single production process. Two or three decades ago, the origin (place of production) of goods coming into the sphere of foreign trade was obvious; nowadays the goods and services are often the result of the interaction of tens or hundreds of suppliers of intermediate components and services that can be located in different countries worldwide. In other words, the cycle of production and marketing of goods and services goes far beyond national borders and is rapidly acquiring the character of a network. There is a fragmentation with spreading certain phases of production to different countries according to comparative advantages, sometimes to fairly long distances. As a result, the economic structure acquires multi-level and interdependence traits, and the important role in this structure is played by the global and international levels of economic activity. The above updates the relevance of researching international production networks as modern forms of international division of labor, the global environment, and the impact of their development and functioning.

2. LITERATURE REVIEW

Historically, the first to be analysed in the scientific literature were the networks localized in a certain area. The interest in studying them is reflected in the location of production theory, which was theoretically based on neoclassical economics. The main contribution to its development was made by representatives of the German geographical school — Johann Heinrich von Thünen, Wilhelm Launhardt, Augusto Lusch, as well as the leader of the Cambridge school, A. Marshall, who paid attention to the special atmosphere, which develops as a result of localizing similar enterprises in a particular area. Development and growth of interest in the issues of production localization and the subsequent formation of network theory were contributed to by the works of M. Porter, a specialist in the field of economic competition, as well as M. Kastelsa, one of the founders of the information society theory. Starting in the 1990s, representatives of the institutional and evolutionary theories have become increasingly involved in the analysis of network forms.

Particular attention to characteristics and properties of modern forms of business entities integration is paid in the works of foreign authors, such as O. Williamson, R. Miles and Charles Snow, M. Van Alstyne, William Powell and L. Smith-Doerr, devoted to issues of attitudinal contracting under the institutional theory. Williamson's merit lies in his identifying the networks (or, in his terminology, hybrids) as a discrete subject of research in the framework of institutional analysis of organizational forms. R. Miles and Charles Snow focused on studying collective utilization mechanisms. M. Van Elsteyn carried out the synthesis of the various approaches to studying network systems, followed by a detailed study of their distinctive properties within the various schools of economic analysis. Joint research of W. Powell and L. Smith-Doerr, working within evolutionary research, helped to identify the factors that favor the spread of production networks, and became the basis for the classification of contemporary forms of inter-organizational cooperation.

The ideas of neoclassics P. Robertson and R.Langlois, and N. Pakhomov, K. Richter, researchers in the field of industrial markets economy, became the basis for the comparative analysis of the various forms of business entities' integration from the standpoint of differentiating ownership integration and coordination integration. The works of Gary Gereffi, which describe the main types of international economic networks, are also of great interest.

3. METHODOLOGY

The works of scientists on the neoclassical theory of the modern world economy, the location of production, the modern theory of competitiveness, innovation of business structures, theories of vertical integration and transaction costs are the theoretical and methodological basis of the research. The used methodological framework allows to ensure the accuracy and validity of the conclusions and practical recommendations.

4. RESULTS AND DISCUSSION

Network economy is interpreted by modern scholars as a set of economic relations over scarce resources, limited by geographical, social and regulatory frameworks. In the actively emerging in modern conditions knowledge economy, a network is one of the main forms of existence of economic entities, i.e. legal or natural persons carrying out economic activity.

The modern idea of a network is the result of continuous crystallization of this concept, starting with the Williamson's theory of transaction costs. Williamson defines a network (or a hybrid) as a contract management structure, which occupies an intermediate position between the market and the hierarchy (Oliver E. Williamson, 1981). A detailed definition of hybrids is given by Hunt Shelby D.. The hybrid form is a "... long-term contractual relationships, which remain independent, but at the same time provide additional transaction-specific security measures in comparison with the market" (Hunt Shelby D., 2000). In the evolutionary theory of the firm tradition, a network is considered a combination of resources of two or more firms with complementary competencies (Miles E.R., Snow C.C., 1995). Van Alstyne, a researcher of the information economy, considers networks long-term and target agreements between independent in the legal sense of the word, but inter-related commercial organizations that enable them to obtain or maintain a competitive advantage (Van Alstyne M., 1997). Van Alstyne's definition reflects the current understanding of the dependence of individual firms' competitiveness on building a network of relationships with other commercial organizations.

As practice shows, the composition of a network is not limited to commercial entities. Network participants can also be research centers, universities, associations, government agencies, the so-called "institutions of collaboration." The idea of an enlarged network of participants is reflected in M. Sheresheva's definition, according to which the inter-organizational network is a system of contracts between formally independent economic agents, created in order to optimize the combination and use of resources, including knowledge in explicit and implicit form (Sheresheva M. Y., 2006). The interpretation proposed by Sheresheva also reveals the idea of knowledge (especially tacit) as a resource, which plays a decisive role in the cluster - one of the most common network varieties in modern conditions.

As a result of the systematization and synthesis of different approaches, networks should be understood as associations of legally independent members of value-added chains, focused on increasing the competitiveness and innovativeness of the participants of the social capital formation network and creating value for customers through effective management of external

effects.

A necessary condition for the creation of a network of relations, especially in the early stages of their formation, is the proximity of network members. At first glance, the condition of geographic proximity is contrary to modern notions of business and marketing organization forms. The processes of globalization, the development of the Internet have led to a decrease in the role of distance. However, this contradiction can be resolved by introducing the concepts of physical, economic and institutional distance into the analysis. Physical distance refers to the distance between two points in space. The main theories, in which the principles of spatial distribution of companies have been formulated, include the Thünen's theory of agricultural standort, Launhardt's theory of industrial standort, Weber's pure theory of standort, Lösch's concept of the economic landscape. The first group of theories is characterized by studying the role of material factors for facility location: transport costs, operating costs, agglomeration savings and profit maximization. Thus, the first group of theories is based on the principle of decreasing economic distance by reducing the various costs.

The economic distance reflects the costs associated with overcoming a physical distance, and the difference in the level of economic development. This provision is presented in Marshall's theory of industrial areas and Porter's theory of industrial clusters. The geographical proximity factor, i.e. decreasing economic distance through decreasing physical distance, is considered by Marshall and Porter only as a condition for reducing institutional distance, which is characterized by the level of inter-organizational cooperation. Reduction of the institutional distance is expressed in the establishment of numerous contacts between economic agents connected in a value chain. As a result emerges a network of business entities that can potentially be characterized by a specific set of properties.

Traditionally, the terms "value chain", "commodity chain", "cost network" and "production network" represent the economic analysis method, which considers the totality of the production chain activities and characterises close and largely interrelated processes (Dicken P, 1986, p. 54). However, it seems appropriate to classify the differences between the "chains" and "networks." Note that the the concept of a "food chain" appeared for the first time in 1977 in the article of T. Hopkins and Immanuel Wallerstein, "Laws of development of the modern world system." The food chain was understood by the authors as a set of processes that form the added value of goods at all stages of their production (Hopkins T., Wallerstein I., 1977, p. 128).

"Value chain" defines the vertical sequence of manufacturing processes (value adding), which ensure the supply, use and maintenance of certain goods or services. In turn, "Production network" – two or more value chains, which involve at least one common economic entity (the common node in the network). On the whole, each network includes vertical and horizontal links between economic agents, i.e. the same economic agents are often involved in a variety of dynamic and constantly changing value chains.

Classic vertical integrated value chains were actively forming in the last decade of the XIX century, allowing to create serious barriers to competition, to ensure coordination of production processes and to maximize savings due to the production scale.

However, the beginning of the XXI century is characterized by the transformation of established production systems and, in particular, of vertically integrated value chains. Perhaps the most significant cause of change is the fundamental shift in information obtaining, processing and utilization systems. Traditionally, information acted as a connecting factor, located at the base of each value chain – cost optimization for the delivery of appropriate information to providers, intermediaries and consumers determined the creation

of competitive advantages specific to the vertically integrated value chains.

At the present stage, vertical integration gives way to a flexible system of co-ordination mechanisms, which manifested in various forms: from the "spot" market to strategic partnerships. This phenomenon can be comprehensively described as the "production networks paradigm". Most often, the main cause is described as asset specificity and mismatch of organizational cultures, as well as mistrust on the part of employees of the acquired company. In various sectors, vertical disintegration processes, or "compression" of the hierarchies, can be observed. Two ways of hierarchy transformation can be identified. The first method is change at the internal level, when the company is to reduce the size of the company and dismiss staff, as well as decentralize strategic power at almost every stage of the production process. In the second case, the main activities of the company are distributed among an increasing number of actors with the corresponding loss of centralized control. The positive effects of "compression" of hierarchies appear manifest in increasing the value of shares and increasing the efficiency of companies.

An example of the degree of disintegration is a hollow or cover firm - a company in which some of the functions (especially production) are handed over on a contract basis to third-party contractors. The broker company maintains only the management function over whole process. This opens the opportunity to invest a large part of their profits in research and development and advertising, rather than in fixed assets. Cover companies are leading companies in their respective industries: «Nike», «Adidas», «Hewlett-Packard», «Phillips».

Meanwhile, the integration process continues unabated, but are changing. Integration aimed at coordination (flexible integration), also as a result of disintegration, is becoming typical. Coordination integration is achieved by creating networks of legally independent but economically connected agents. That is, integration is manifested in the pursuit of a common goal. That in turn leads to the formation of two types of international economic networks, consisting, according to Gary Gereffi (Gereffi G. 1999, p. 1), of global commodity chains (or value adding/creation chains) of two different types:

- Producer-driven commodity chains;
- Buyer-driven commodity chains.

Chains of the first type are characteristic for capital- and technology-intensive industries, such as automotive, aviation, computer, semiconductor, and heavy machinery industries. These chains are large, usually transnational; manufacturers play a major role in coordinating production networks. The second chain type is more typical for those industries where the leading role played by retailers, firms engaged in the promotion and sale of goods and manufacturing of 'branded' products. They define the specifications of products and order goods from producers, mainly in developing countries, constituting a decentralized production network. This type of chains is characteristic for industries such as clothing, shoes, toys, utensils, consumer electronics, and a variety of handmade products.

Two or more commodity chains that are closed on at least one common subject, form a production network (Sturgeon T. J. 2000, p. 6). Modern conditions of the world economy development form a new economic space of commodity chains and production networks of different scales. But, at the same time, these processes are accompanied by the development of regional agglomeration, increasing value of regional and local economies, growth of regional clusters and networks, and increasing regional specialization. Even in a globalized world, all kinds of economic activity are geographically localized. Each component in the production chain, every company, every economic activity is "grounded" in certain location (Dicken P., 1998, p. 10-11). The localization of economic activities in the form of geographic

clusters or agglomerations is a norm. Follow-up studies will be devoted to this aspect, though.

5. CONCLUSION

As a result of the theoretical analysis of the nature of international production networks, a definition of a production network is proposed, which describes it as a system of informal contracts between independent but interconnected economic agents aimed at optimizing the combination and use of resources, including explicit and implicit knowledge, which enables them to obtain or maintain a competitive advantage; the proposed definition, supplemented by the definition of a number of other characteristics of a network, allows it to be distinguished from a variety of other modern forms of interaction between economic agents.

In modern conditions of dominating international production networks, developing countries should carefully weigh the costs and benefits in deciding whether to use the possibility of industrialization strategy by actively participating in these networks. The goal of governments of developing countries should be to increase the appropriated by national companies share of value added in the final price of the goods. The fragmentation of production networks creates new opportunities for countries to participate in international division of labor by defining the configuration of production systems based on understanding the opportunities for participation in corporate strategies and definitions of geographical (regional) capacity allocation parameters.

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THE STRATEGIC LINK BETWEEN INTELLECTUAL CAPITAL AND OPEN INNOVATION: A CONCEPTUAL FRAMEWORK

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Tindara Abbate²

Abstract: *The paper intends to examine the role of intellectual capital in the definition and implementation of Open Innovation (OI) practices. The main concept of OI is focused on the opening up of organizational boundaries and the exchange of knowledge between internal and external resources, improving firm's knowledge base and having a positive impact of intangible resources. The concept of IC, on the other hand, summarizes all the resources of knowledge conceived as drivers for the value creation of a firm. The link between Intellectual Capital and Open Innovation is analysed by discussing intellectual capital and integrating its relevant components within the Open Innovation perspective. Several implications for theory and practice are drawn, underlining suggestions for future research.*

Keywords: *Intellectual Capital, Open Innovation, exchange of knowledge*

JEL Classification: *M10*

1. INTRODUCTION

It is now widely acknowledged that the intellectual capital and the ability to exchange knowledge are assuming a relevant role in the innovation processes of firms. Intellectual capital is almost unanimously considered as the sum of all the resources of knowledge firms utilize for improving their profitability and obtaining a competitive advantage (Edvinsson and Malone, 1997; Subramaniam and Youndt, 2005), contemplating three main components: human, organizational and relational capital.

Traditionally, firms have contemplated innovation as an internal process and, therefore, their strategy was primarily based on internal intellectual capital (Chen et al., 2015). This managerial perspective has been recently questioned by an open innovation strategy. The opportunity to acquire, use and integrate knowledge of different external sources (i.e., customers, suppliers, universities, competitors, etc.) into the firm's process of innovation is becoming particularly relevant for survival and profitability under environmental and market uncertainty. The Open Innovation approach provides firms with new opportunities for defining and structuring suitable flows of knowledge and external relationships (Chesbrough, 2003), even if it poses new and pressing challenges for innovation management (van de Vrande et al., 2009). The main concept of OI is focused on the opening up of organizational boundaries and the exchange of knowledge between internal and external resources, improving firm's knowledge base and having a positive impact on intangible resources (Chesbrough, 2003; Dahlander and Gann, 2010; Huizing, 2010).

The paper intends to examine the role of intellectual capital in the definition and implementation of Open Innovation (OI) processes, expanding the basic components of the intellectual capital in order to include several factors, necessary to the opening up of organizational boundaries and the use of external knowledge sources.

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The reasons of this conceptual paper are numerous. Firstly, different contributions are mainly focused on the intellectual capital components adopting specific perspectives (i.e. organizational learning) (Mention, 2012), however, little attention has been paid on a systematic approach of these components. In this perspective, the study aims to fill this gap in literature and represents an attempt to address these issues. Secondly, contributions focusing on the role of intellectual capital on innovation performance have principally considered the closed innovation model (Ahuja, 2000; Subramaniam and Youndt, 2005) and have focused on the knowledge of internal employees and the internal culture. There is, therefore, a need to examine this interesting avenue of research assuming the open innovation model and to improve our understanding of several factors that characterize intellectual capital components in this new approach. Thus, this study is an attempt to explore the internal and external factors of intellectual capital components and their role in the open innovation model.

This study make different contributions to the scholarly literature on the intellectual capital and open innovation. First, it creates a bridge between the concept of intellectual capital and the Open Innovation approach. Second, it expands the content of intellectual capital, contemplating external factors, which are appropriate for intellectual capital in a context of open innovation. Additionally, it provides a comprehensive view to manage intellectual capital components assuming an open perspective and contemplating and combining internal and external dimensions.

The paper is organised as follows. In the next section, a literature review on the Open Innovation model with a particular focus on the role of Intellectual Capital is presented. In the Section 3 the conceptual framework is examined. In the Section 4 discussions and final conclusions are considered. Finally, in the Section 5 limitations, implications and further research are included.

2. LITERATURE REVIEW

2.1. Intellectual Capital

In the last two decades, a great number of contributions have been addressed on the role of intangible resources in pursuing the competitive advantage of the firm. Within these studies, different frameworks have been developed to measure, and then to manage, intellectual capital. Given the close connection existing between research on knowledge and research on innovation, recently studies have stressed the overlap of these two areas, on the assumption that intellectual capital shows a positive impact on innovation performance (Chen et al. 2004; Mention, 2012). This can explain the increasing relevance of intellectual capital in the research field of innovation management.

Many scholars have variously defined the intellectual capital, generally considered as the organization's knowledge resources, trying to divide it into its components. Some studies have proposed a comparison of the different classifications existing in literature, and the various research streams in this area (Petty and Guthrie, 2000; Rupo, 2003; Viedma *et al*, 2012). Table 1 synthetizes the best-known meanings and components of IC (Table 1).

Although the plethora of definitions and classifications that could be found in literature, the different models seem to converge acknowledging the role of intangible resources in the value creation and identifying three fundamental components of IC: the *human* dimension, the *organizational* dimension and the *relational* dimension. This taxonomy has been adopted, as well as by many scholars, also on the part of a specific European Commission, dedicated to a

noteworthy initiative aimed at harmonizing different factors linked to IC (European Commission, 2008).

Table 1 The main definition of Intellectual Capital and its components

Study	Definition	Components
Edvinson and Malone (1997)	a sum of useful Knowledge that can be converted into value for the company	<ul style="list-style-type: none"> • Human capital • Structural capital: <ul style="list-style-type: none"> - <i>Organizational</i> - <i>Relational capital</i>
Ross et al., (1997)	.. a language for thinking, talking and doing something about the drivers of companies' future earnings	<ul style="list-style-type: none"> • Human capital • Structural capital • Relational capital
Stewart (1999)	Intellectual material: knowledge, information, intellectual property, and experience that can be used for the generation of wealth	<ul style="list-style-type: none"> • Human capital • Structural capital • Customer capital
Guthrie et al (2006)	the knowledge that individuals put into advantage in their respective companies; as such, it is an organizational competitive advantage and helps in value creation	<ul style="list-style-type: none"> • Individual competence • Internal structure • External structure

Source: our elaboration

Human capital is considered as the *knowledge people have in their head* that is knowledge “embodied in the people whose talent and experience create the products and services that are the reason customers come to it and not to a competitor” (Stewart, 1997, p. 91). As argued by Mayo, “people are the one factor of value growth that drives all others”. Human capital includes different attributes of employees: capabilities and potential to grow, motivation and commitment, and innovativeness (Mayo, 2001).

Organizational (or structural capital) is knowledge that, via the process of institutionalization, resides in company, in form of codified experience that has generated resources become under the organization’s control (patents, procedures, databases, etc.).

Relational (or social) capital concerns knowledge related to interactions among individuals and their networks inside and outside the company. These types of resources depend on, and can influence, firm’s relationships, though they are not owned by the organization. In the proposal of Edvinsson & Malone (1997) this form of capital was considered as part of the structural capital. In further conceptual elaborations, this component has been assigned a distinct connotation, enlarging the view of external connections established by the company with different stakeholders (customers, suppliers, government, competitors, universities, etc). Relational capital also includes corporate reputation.

The effort to separate these three dimensions of intellectual capital is justified by the objective of understanding how each aspect influences positively the creation and distribution of knowledge, and, therefore, the company’s performance: either through (a) individuals, (b) organizational structures, processes, and systems, or (c) relationships and networks.

A lot of studies have thus faced the challenge to encompass the measure of IC in corporate reporting, trying to overcome the obstacles financial accounting principles pose to the representation of the *hidden value* of the firm on the balance sheet (Stewart, 1997; Andrikopoulos, 2010).

In parallel, over the last two decades, in the strategic perspective IC has been associated with organizational innovative performance, and the branch of “Knowledge Management” has been developing new managerial tools, placing the focus on the components of IC as drivers of the firm’s performance (i.e., Skandia Navigator, Balanced Scorecard, etc.).

In both perspective mentioned, existing models have focused primarily on the internal dimension of intellectual capital. Recent contributions are instead turning to investigate the linkage between Open Innovation and IC, focusing on the external dimension of IC (Grimaldi et al., 2012; Uzienè, 2015; Chen et al., 2015).

After having pointed out the fundamentals of Open Innovation, it will be clear that each component of IC has a significant role in supporting open innovation (Cabrillo, Grupic-Nesic, 2015; Chen et al. 2015). More in-depth analysis will be provided of some specific factors of IC playing a key role in this perspective.

2.2. Open Innovation

Firms created and developed new products within their internal R&D labs, adopting a model of closed innovation that exclude primarily the possibility to acquire and to exchange knowledge from external sources (Chesbrough, 2003a). The current innovation landscape has quickly changed because of the increased financial risks linked to innovation cycles, the development of advanced and complex technologies, the knowledge dispersed across multiple public and private organization, the amplified mobility of resources and the continuous creation of network with relevant impact on organizational culture and performance (Chesbrough, 2003b).

As a result, many firms have continually moved to an Open Innovation model in which they “*become more effective in acquiring external knowledge for internal innovation and taking internal innovation to external markets*” (Hossain and Anees-ur-Rehman, p.1). The main concept of Open Innovation is that firms should purposively use inflows and outflows of knowledge to accelerate internal innovation, and to expand markets for external use of innovation, respectively (Chesbrough 2006, p. 1). In this perspective, the boundaries of the firm become porous, permeable, enabling inflows and outflows of knowledge with other different actors to benefit its innovative activities.

The Open Innovation approach contemplates a wide range of activities: a) accessing to new ideas, knowledge and technologies from different external sources, such as other firms, universities, research institutions, intermediaries through partnerships, licensing and joint-ventures; b) acquiring, integration and exploitation of external ideas and knowledge into innovative products, processes and services; c) involvement and collaboration with consumers, suppliers, competitors, networks; and d) spin-outs, out-licensing to obtain value from ideas, knowledge and technologies that do not fit the core strategy of the firm (Laursen and Salter, 2004; Chesbrough et al., 2006; Dodgson et al., 2006; Enkel et al., 2009; Huizing, 2011; Chesbrough and Brunswicker, 2014; Presenza et al., 2016).

Several studies in the innovation and technology management have underlined suitable strategic benefits derived by the opening up of the innovation processes: shorter time-to-market with less costs associated to product development and process improvement; better

adaptation of products and services to customer needs and preferences; improvement of product quality; exploitation of new market opportunities; increased knowledge base by accessing expertise outside the organization; improved flexibility; adapting knowledge base to shifting market needs; shared risk in products and services development; access to large external networks; and commercial utilization of internal knowledge or technologies (Gassmann 2006; van de Vrande et al., 2009; Dahlander and Gann, 2010; Lee et al. 2010; Hossein, 2015). Additionally, the shift from traditional closed innovation, with a main focus on internal R&D, toward an Open Innovation approach fosters firms to increase their collaborations and partnerships in order to gain needed competences, technologies, assets and other complementary resources from different external entities/partners, compensating in this way the lack of limited in-house resources (Henkel, 2006).

As can be expected, the adoption and implementation of Open Innovation model represents a prominent challenge for organizations (Giannopoulou et al., 2011) because they have to face problems related to human, cultural, organizational and relational issues as an ineluctable consequence of dealing with increased external contacts and actors (van de Vrande et al., 2009). More specifically, firms engage in interactions with an extensive range of internal and external knowledge sources, but the modes and ways of interacting and collaborating with these different sources vary significantly, in part due to the managerial strategic decisions, and in part due to the nature, characteristics, quality and objectives of these sources. This implies that firms have to invest energies and resources at different levels - human, organizational and relational - in order to foster, support and realize efficiently knowledge process and make it available for further innovative utilization. In fact, well-defined knowledge management, flexibility, innovativeness attitude, motivation and change management are important internal factors determining success of Open Innovation activities (Waiyawuththanapoom, et al., 2013). While organizational culture, flexibility, adaptability, mechanism of coordination are essential factors in the successful implementation of Open Innovation processes (Waiyawuththanapoom, et al., 2013). When it comes to the relational factors, quality of knowledge sources/partners, trust and responsibility assume an increasing relevance because they can differently influence the relationships with customers, suppliers, distributors, investors, universities and other stakeholders that participate to innovation processes.

3. CONCEPTUAL FRAMEWORK

The Open Innovation model suggests a necessary rethinking of the factors characterizing the cause-effect relationship between Intellectual Capital and innovation performance (fig.1). Specifically, each component of the Intellectual Capital has to be revisited and, consequently, integrated by several factors linked mainly to Open Innovation model. This appears necessary if firms are oriented not only to use efficiently internal and external knowledge sources within their innovation processes, but also to explore positively innovation opportunities, integrate external resources with their internal capabilities, and exploit these opportunities through multiple different channels, such as licensing, joint ventures and similar (Chesbrough, 2006; Huston and Sakkab, 2007).

In this perspective, the landscape of human capital component changes strongly. In fact, a particular relevance is mainly assigned to flexibility, considered as the capability of individuals to contribute to the organizational change and innovation success. Nourishing by motivation, commitment and friendliness, this relevant factor can better support the definition and implementation of activities related to the openness of organizational boundaries and knowledge sharing among different actors, inside and outside the company.

At the same time, innovativeness attitude of employees represents a key factor enabling the development of different innovation paths, far from traditional approaches more oriented toward exploitation strategies. Related to personal traits of individual, innovativeness attitude can stimulate different and innovative behaviours and activities inside the organization.

Within the organizational capital, a significant role is played, on the one hand, by the entrepreneurial culture (Dodgson et al., 2006), on the other hand by the flexibility of the structural elements. The roots of these factors are in any way related to the human capital, which has contributed to produce these resources, become under the domain of the firm, as effect of sedimentation process. Furthermore, the new mechanism of coordination assumes crucial relevance because of the need to manage efficiently internal and external knowledge flows and, also, research and development activities supported by the contribution of different actors (Bianchi et al., 2011), and enhanced by formal and informal relationships.

Additionally, these mechanisms are important because generally the open collaborations and networks cannot be achieved through hierarchical forms which, overall in more dynamic environments, become more complex and need to control and coordination costs (Dahlander and Wallin, 2006; Aquilani and Abbate, 2014). Thus, they appear useful to decrease potential risks connected to the opportunistic behavioural of different actors oriented to maximize the potential value of collaboration.

Finally, within the relational capital, responsibility and trust assume a fundamental importance (Elmquist et al., 2009) because they can contribute to build reciprocity between organization and individuals and/or other organizations involved in the creation of new value networks (Dittrich and Duysters, 2007). In fact, “the innovation network model presupposes a trustful relationship between the actors involved in an innovation partnership” (Westergren and Holmström, p. 211), considering that inter-organizational knowledge sharing requires mutual trust (Lee et al., 2008). Also, trust brings benefits by attenuating the effects of uncertainty in open innovation alliances and allowing partners to realize their potential synergies (Westergren and Holmström, p. 211).

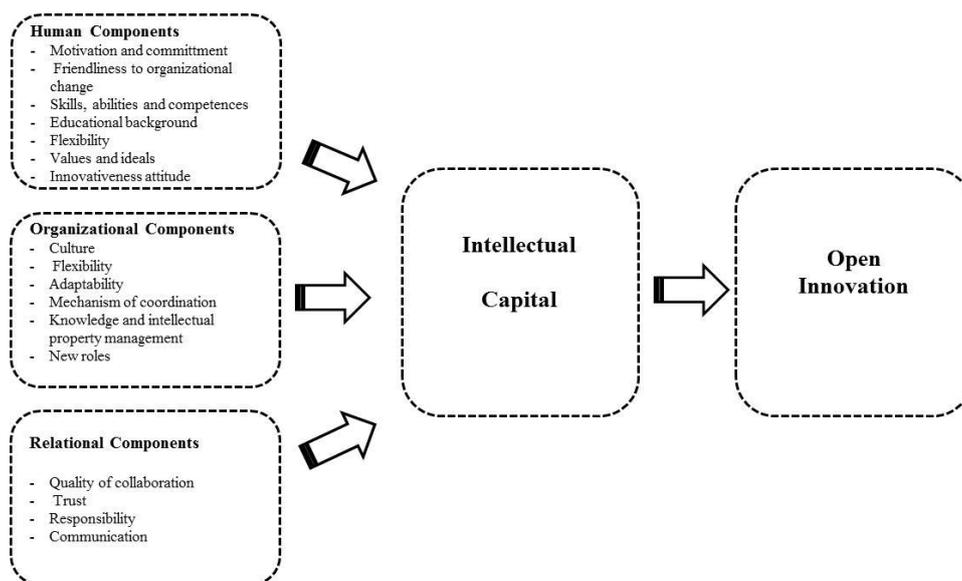


Figure 1 Conceptual framework

Source: Our elaboration

4. CONCLUSION

This conceptual paper has examined the role of intellectual capital in the definition and implementation of Open Innovation (OI) processes. More specifically, the aim was to shed light on the basic components of the Intellectual Capital including several factors necessary to the opening up of organizational boundaries and to the use of external knowledge sources.

The study makes different contributions to the scholarly literature on the intellectual capital and Open Innovation. First, it creates a bridge between the concept of Intellectual Capital and the Open Innovation approach. Second, it expands the content of intellectual capital, contemplating external factors, which are appropriate for intellectual capital in a context of open innovation. Additionally, it provides a comprehensive view to manage intellectual capital components assuming an open perspective and contemplating and combining internal and external dimensions.

The limitation of the paper is in its theoretical approach, which requires some empirical validation and a more in-depth study of the intellectual capital components. Therefore, future research could consider case study methods and quantitative analysis in order to examine the impact of intellectual capital on the performance of the open innovation processes.

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INTRODUCTION TO STRATEGIC KNOWLEDGE MANAGEMENT - A THEORETICAL APPROACH

Bogusz Mikula¹

Abstract: *The article presents definitions and a model of knowledge management in an enterprise. It characterizes the essence of strategic knowledge management in an enterprise as information and decision-making processes which, supported by the implementation of knowledge management functions, set the directions of the development and ways of using knowledge resources, considering changes in knowledge resources of the environment, forecasts for their development and directions of applications, as well as own knowledge resources of an enterprise, capabilities of developing and using them. The basic tasks of strategic knowledge management are mentioned. Knowledge strategies occurring in the literature are presented. Then, three groups of knowledge management strategies are characterized: building knowledge management system (codification and personalization), strategies of filling knowledge gaps (internal creation strategy, strategy of creation via cooperation, absorption strategy, internal extension strategy), strategies of shaping knowledge of the environment (knowledge protection strategy, strategy of making knowledge available, knowledge dissemination strategy). Moreover, the article shows basic relationships between knowledge strategies and knowledge management strategies which determine their choice.*

Keywords: *knowledge management, strategic knowledge management, knowledge strategy, knowledge management strategy*

1. INTRODUCTION

Until relatively recently, organization management focused only on tangible, financial and human resources. In the 1980s, the significance of data in organization management is established and data management appeared. A hierarchical relationship among data, information and knowledge forces the next stage in the development of the management concept, namely information management comes into existence. In the 1990s², a wide range of applications is found for, for example, data warehousing, data mining, document management. What is important is that information started to be interpreted as another factor of production which should be managed just like capital and labor are. Therefore, it is not surprising that as recently as in the 1990s, a similar approach was applied to another resource being part of the hierarchy of reaching the state of wisdom by an organization (an intelligent organization), namely knowledge. A new idea emerged then - knowledge management (KM) (see: Maier, 2002, pp. 36-40).

In spite of the fact that KM has become an established detailed discipline of management studies, in Poland the interest of managers in the issue of knowledge and KM is still limited. For example, based on the opinion of an elite group of the Polish Quality Award winners in the years 1995-2010, there is little interest in the inclusion of the problems of knowledge in the overall strategy of enterprises. From the conducted survey it results that 37% of respondents made an attempt to create and consider the KM strategy in the overall strategy,

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² The years of the concept formation are given after R. Maier (2002, p. 36). However, there are different approaches to the time of the prevalence of individual concepts. For example, M. Grabowski and A. Zajac (2009, p. 101) claim that in the 1970s data processing prevailed, in the 1980s it was information management, and since 1990s KM has been prevailing.

34.8% did not make such an attempt, and at the same time 28.2% of respondents, when giving a response, did not take a stand on this important issue (Skrzypek, 2015, p. 162). However, attention is drawn to the fact that knowledge is an extremely valuable, strategic resource of the contemporary enterprise, it is the basis for the creation of innovative processes, it constitutes a resource used in every area of firm management and on every level (based on knowledge key business processes are configured and the most significant competences of competitiveness are developed), and the value of created knowledge is verified by the environment, the market and the customer who assesses what value a product or service is for him or her. Therefore, KM should be an aware, planned, systemized, subjected to permanent verification and control, integrated organizational process, combining human resources management, key business processes and procedures, conducted with the use of state-of-the-art technologies and ICT systems (Walczak, 2010, pp. 4-5) in every enterprise striving for success.

KM is a young, non-homogenous and still developing concept. The aim of the paper is to present the place and the essence of strategic knowledge management (SKM) in an enterprise. It discusses the basic components of SKM, such as the vision of knowledge, and various strategies used within SKM. Moreover, relationships among those strategies are shown.

2. THE ESSENCE AND THE MODEL OF KNOWLEDGE MANAGEMENT IN AN ENTERPRISE

There are dozens of various definitions of KM. In the most general approach, "it is simply management in the conditions of the knowledge-based economy" (Morawski 2006, p. 31). KM "in the simplest representation, includes all knowledge-related aspects which influence the profitability and success of an enterprise" (Karwowski 2004, p. 12). In other words, we can assume that KM "consists in winning adequate means, working out and steering the use of the conditions, methods and techniques enabling the progression of the processes connected with acquiring, creating, disseminating, storing and applying knowledge" (Mikuła, Pietruszka-Ortyl and Potocki 2002, p. 74).

The essence of KM can be discussed from at least four points of view: in the functional, procedural, instrumental and institutional approach (Table 1). Jointly, the definitions illustrate the complexity of KM.

KM is formal activity of a firm. It is characterized by the following qualities (Karwowski, 2004, p. 12):

- it is based on a strategy which aims at the establishment of knowledge as a key resource and necessary to achieve business goals;
- it applies a process which starts with raw materials (namely data) and heads towards the creation of the end product, namely knowledge. The process consists in data processing, organizing information, elaboration (that is, analysis and synthesis), creating knowledge and, in the final stage, dissemination of knowledge among users. The process also integrates the organization horizontally and enables cooperation of all the areas of the enterprise;
- it contains cultural values which require to share intentions, values and knowledge in the whole firm for the effective cooperation of various groups of employees and the promotion of learning.

Table 1 Definitions of knowledge management

Knowledge management
In the functional sense: Management comprehensively comprising the implementation of cyclic and continuous management functions, focused on the resources of personalized, codified and established knowledge, as well as processes with their participation, and the conditions of the implementation of the progression of these processes in the manner enabling the accomplishment of the organization's goals.
In the procedural sense: Normalizing and discretionary procedures, aiming at the creation of an adequate environment which will enable effective implementation of knowledge strategy and knowledge management strategy, as well as the implementation of operational functions, thus, the implementation of organizational systems with proper structure, optimizing the main processes related to knowledge, organizational climate, culture and structure which will orient people to developing knowledge, sharing it and using it appropriately.
In the instrumental sense: Consists in the proper choice and use of instruments contributing to the progression of the main processes with the participation of knowledge on all levels and in all areas of the organization. The set of instruments is broad, and includes economic and financial, legal, social, organizational and technical tools. The instruments can also include, among others, organizational systems contributing to the implementation of operational functions, such as the information system, the motivation system, the controlling system, etc.; strategies of various levels of the organization, a number of instruments, such as: the Internet, the Intranet, the Extranet, databases, chat rooms, as well as methods: debates, quality circles, <i>kaizen</i> , brainstorm, etc. on which knowledge management system is based and which it uses.
In the institutional sense: It comprises the system of positions and worker teams (of the strategic, tactical and operational level of the organization, a formal and an informal organization) which implement functions and tasks related to knowledge management of the organization.

Source: Miękka, 2011, p. 18

Figure 1 presents a model approach to the KM concept. The model shows that the entirety of activities is steered by decisions taken with regard to SKM. The decisions are supported by the implementation of the cyclic functions of KM, such as planning, organizing and controlling. On each stage of the KM process, the functions making it up are supported by the implementation of continuous functions. Thus, for the purposes of planning, organizing and controlling, material and financial means are raised and allocated for the implementation of strategic decisions and operational activities. Various knowledge-based resources (intangible resources) are raised and used. Decisions are taken, and all the activities are coordinated in time. Working with people means the involvement of all employees who work with knowledge in the KM process. They support the main decision-making centers. However, the scope of this involvement may be varied, depending on the location in the organizational structure, the scope of tasks, authorizations and responsibilities, as well as possessed professional competences. The totality of the KM functions, depending on the strategic decisions, determines the ways of implementing operational tasks (the methods of implementing processes with the participation of knowledge), the ways of shaping the conditions for the progression of those processes, and thus, it influences knowledge resources.

Significant differences in the implementation of KM functions and tasks may arise from the adopted KM orientation: human-oriented KM (personal) or technology-oriented KM (technological) (Maier, 2002, p. 43). The prevalence of personal orientation forces the concentration of special attention on: partnership organizational culture, communities of professionals, development of competencies, management styles to support employees, motivation for creativity and knowledge sharing, methods of managing knowledge workers. Adopting technological orientation brings about the focus on the practical use of: databases,

e-mail, websites and Internet portals, computer programs, communicators, videoconferences (Wiśniewska, Wiśniewski, 2012, p. 1621).

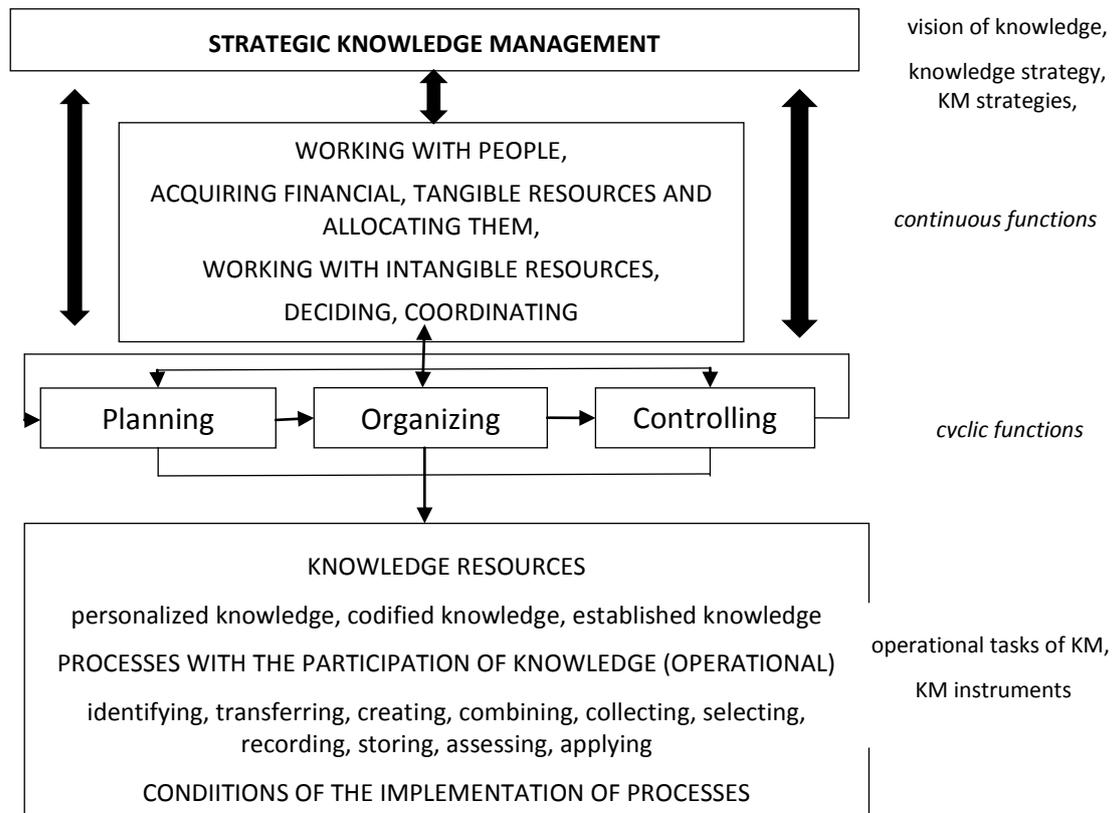


Figure 1 Model approach to the knowledge management concept in the organization

Source: Author's own study

3. THE ESSENCE OF STRATEGIC KNOWLEDGE MANAGEMENT

SKM aims at the increment of the enterprise value via the development of its key knowledge domains, namely the sets of knowledge selected in respect of goals, functions and needs of a given type of activity (Majewska, 2002, p. 30). SKM consists of information and decision-making processes which, supported by the implementation of cyclic and continuous functions of KM, set the directions for the development and ways of using knowledge resources, considering changes in the knowledge resources of the environment, forecasts for their development and the directions for their applications and own knowledge resources, the capacity for their development and use. Decisions taken within SKM primarily concern:

- development of knowledge resources possessed by the organization, the ability to use them and make competitive moves concerning knowledge,
- determination of new directions and the scope of the use of knowledge resources possessed by the organization,
- defining new types of knowledge resources necessary to be acquired and/or for further development, and the ability to use them,
- building and developing the KM system, including development of organizational systems (with IT) within it, enabling effective implementation of knowledge-related functions, tasks and processes,

- shaping knowledge resources of the environment of the firm (including partners, customers, competitors) via dissemination of knowledge or limiting the access to it.

SKM includes a lot of tasks. Among the major ones there are:

- establishment of knowledge orientation in the mission and vision of the organization - so that all employees could become aware of the significance of knowledge and KM for the enterprise;
- strategic analysis of the internal environment of the firm, including monitoring, analyzing, assessing and reporting its knowledge resources and the network of intraorganizational relationships, the level of self-organization, organizational climate and organizational culture,
- strategic analysis of external environment (near and far), with special consideration given to knowledge resources of the environment (partnership firms, competitors and organizations which are not competitors, including research and development institutes, consulting firms, universities), as well as networks of relationships in the environment, assessing obtained information and reporting,
- creating and reconstructing the vision of knowledge, that is, the description of knowledge resources, for the achievement of which the enterprise strives in order to implement its strategic goals,
- formulation of knowledge strategy,
- identification of knowledge gaps and relationships, thus, the difference between what the firm must know to perform its strategy and what it knows (Zack, 1999, p. 135), as well as gaps between strong relationships which the firm should have to fill the existing knowledge gaps, and actual relational capital (Tiwana, 2003, p.123),
- identification of barriers to filling knowledge and relationship gaps,
- the choice of the basic and supporting KM strategies necessary to fill knowledge gaps and the ways of shaping desired relationships,
- defining the prevailing approach determining the structure and operation of the KM system (personal or technological), support for the KM strategy by means of shaping the relationships with the environment, redesigning the operational tasks of KM, the organization's structure, roles, processes and information and communication infrastructure,
- defining the level of the openness of the firm to the environment in terms of making available and protecting own knowledge resources - defining the strategy of shaping knowledge of the environment and knowledge resources of the enterprise with reference to which they will be used,
- planning methods and tools, as well as the choice of people to implement KM strategy, determining necessary means and organizational conditions,
- creating the model of knowledge-oriented organizational climate and culture,
- assessing the level of the achievement of the goals set and the correctness of the activities undertaken with regard to knowledge resources,
- economic and non-economic assessment of knowledge, intellectual capital and conducted activities in respect of KM.

4. KNOWLEDGE STRATEGIES OF AN ENTERPRISE

According to G. von Krogh, I. Nonaka and M. Aben (2001, p. 426), the term Knowledge Strategy “denotes the employment of knowledge processes to an existing or new knowledge domain in order to achieve strategic goals” whereas M. H. Zack (1999, p. 131) claims: “Knowledge strategy, then, can be thought of as balancing knowledge-based resources and capabilities to the knowledge required for providing products or services in ways superior to those of competitors”. Thus, we can assume that knowledge strategy is "making the enterprise management strategy more detailed by adding requirements to the knowledge resource which should be possessed by an organization to accomplish the goals set” (Mikuła, 2006, p. 135).

In the literature of the subject we can find various proposals for knowledge strategy types. For example, G. von Krogh, I. Nonaka and M. Aben (2001, p. 427) mentioned four generic knowledge strategies: leveraging, expanding, appropriating, and probing. However, probably the most popularized knowledge strategies are those proposed by K. M. Wiig (1997, p. 400). Table 1 presents their characteristics.

5. KNOWLEDGE MANAGEMENT STRATEGIES OF AN ENTERPRISE

Knowledge strategy directs the entirety of the enterprise functioning concepts with regard to the ways of acquiring, creating and using knowledge. On the other hand, KM strategies are detailed strategies which can be compared to functional strategies, e.g. human resources management strategies. The scope of their use, however, is much broader. They determine detailed approaches to such issues as: building the KM system, the ways of filling knowledge gaps and an approach to knowledge resources lying in the environment. We can distinguish the following KM strategies (Figure 2):

Table 1 Knowledge strategies according to K. Wiig

Knowledge strategy	Characteristics	Example
Knowledge strategy as business strategy	emphasizes knowledge creation, capture, organization, renewal, sharing, and use in all plans, operations, and detailed activities to provide the best possible knowledge available at each point of action.	comprehensive strategies of this type are used, for example, by large consulting firms, which on an ongoing basis analyze the latest knowledge emerging in the environment, create solutions for customers, share their knowledge with them while consulting and training, use absorbed and created knowledge in their development and creating projects for customers,
Intellectual asset management strategy	emphasizes enterprise-level management of specific intellectual assets such as patents, technologies, operational and management practices, customer relations, organizational arrangements, and other structural knowledge assets. Management's task is to renew, organize, evaluate, protect and increase the availability and marketing of these assets,	a firm bases its activity on selected intangible resources and strives for an increase in their value, acquires and uses patents, copyrights, licenses or franchising, or creates and reinforces its image and product brands basing its success on them. e.g. Coca Cola, book publishers,

Personal knowledge strategy	emphasizes personal responsibility for knowledge-related investments, innovations and competitiveness, renewal, effective use and availability to others of knowledge assets within each employee's area of accountability. The objectives are continually to build knowledge and to apply the most competitive knowledge to the enterprise's work,	activity of the organizations is based on human capital, e.g. a legal office, tax advisory firms, some universities focused only on the implementation of didactic process (without research and development of their own faculty) ,
Knowledge transfer strategy	emphasizes systematic approaches to transfer (i.e. obtain, organize, restructure, warehouse or memorize, repackage for deployment and distribute) knowledge to points of action where it will be used to perform work. This strategy includes knowledge sharing and adopting best practices,	an example are firms creating computerized data banks, collecting information in order to make it available against payment to institutions or natural persons, opinion polling agencies, credit information agencies,
Knowledge creation strategy	emphasizes organizational learning, basic and applied research and development, and motivation of employees to innovate and capture lessons learned to obtain new and better knowledge which will provide improved competitiveness,	research and development institutes can be an example.

Source: Author's own study based on (Wiig, 1997, p. 400)

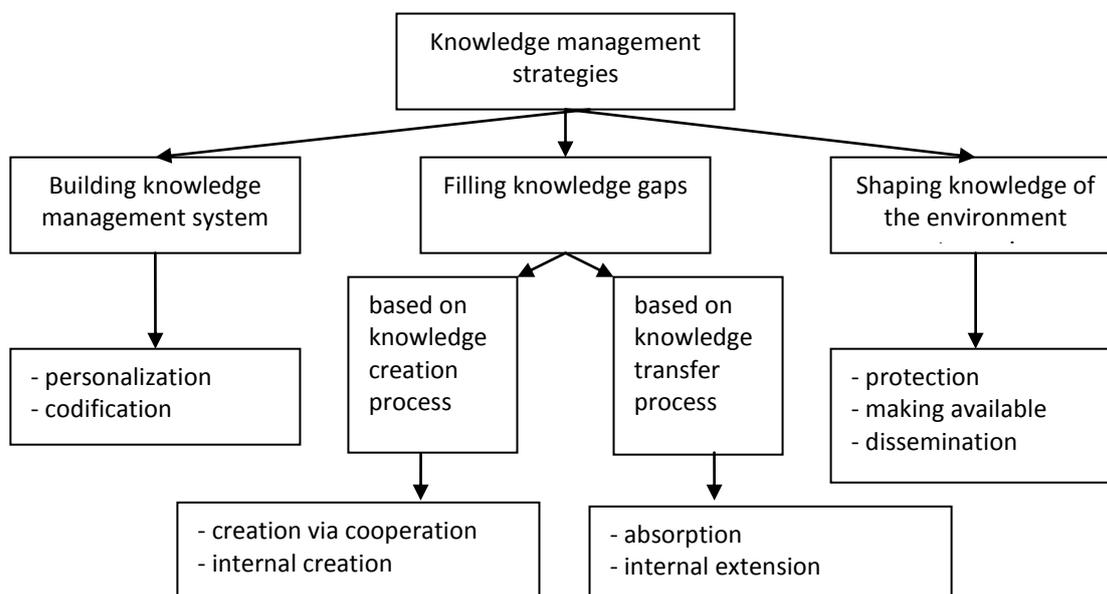


Figure 2 The typology of knowledge management strategies

Source: Mikuła, 2015, p. 74

- building system of KM - codification and personalization, which were distinguished by M. T. Hansen, N. Nohria and T. Tierney (1999),

- strategies of filling knowledge gaps – internal creation strategy, strategy of creation via cooperation, absorption strategy, internal extension strategy (Mikuła, 2006, pp. 140-142),
- strategies of shaping knowledge of the environment – knowledge protection strategy, strategy of making knowledge available (Mikuła, 2006, pp. 142-144), knowledge dissemination strategy (Mikuła 2015, p. 74).

Basing the KM system on the strategy of codification or personalization is a result of the choice of technological or personal orientation in KM. Filling knowledge gaps can be implemented via the use of strategies based on knowledge creation (in an independent way by own employees - internal creation strategy, or by cooperating with other entities of the environment - creation via cooperation strategy), or based on the knowledge transfer (acquiring knowledge resources existing in the environment - absorption strategy, disseminating knowledge resources inside the enterprise - internal extension strategy). Knowledge dissemination strategy aims at making a given knowledge resource readily available to both the employees of the organization and to entities of the environment. Limiting the access to knowledge resources is achieved by applying knowledge dissemination strategy or knowledge protection strategy. In the first of them specific individuals working for an organization and from its environment have access only to some knowledge resources, however, they are obliged to protect them and not to pass them to other indefinite entities. The other strategy, knowledge protection, is of a more radical character. Knowledge is strictly protected by the use of technical or/and legal access barriers. Both strategies have their internal and external dimension but the external dimension prevails here. Limiting the access to knowledge to own employees is primarily caused by a concern that they will pass this resource to entities of the environment or use it after leaving the organization (termination of employment).

All of the distinguished strategies are implemented via properly chosen KM instruments (technical, social and organizational ones), such as video conferences, e-mail, communities of practice, quality circles, benchmarking. Their choice must be well-thought-out and correspond to strategic goals because "using numerous but inconsistent and incompatible with strategic goals tools may do more harm than good to the organization" (Mierzejewska, 2005, p. 55).

6. KNOWLEDGE STRATEGY AND KNOWLEDGE MANAGEMENT STRATEGIES

When analyzing individual types of knowledge strategy and KM strategies, we can put forward a hypothesis about the existence of a significant relationship between the applied knowledge strategy, the prevailing KM strategy of building the KM system, and the strategies of filling knowledge gaps prevailing in the application (Figure 3).

Knowledge strategy as business strategy can be implemented with the predominant support for any KM strategy with regard to building the KM system, thus, by means of the strategy of personalization or codification or their indirect combination. However, intellectual asset management strategy and knowledge transfer strategy in their implementation will be closer to success if they are supported by the strategy of codification. Then, when filling knowledge gaps, strategies based on the knowledge transfer process will find basic applications. On the other hand, the use of the strategy of personalization is particularly justified if personal knowledge strategy or knowledge creation strategy are knowledge strategy. It favours filling knowledge gaps then, if creation via cooperation strategy or internal creation strategy are applied (Mikuła 2011, p. 163).

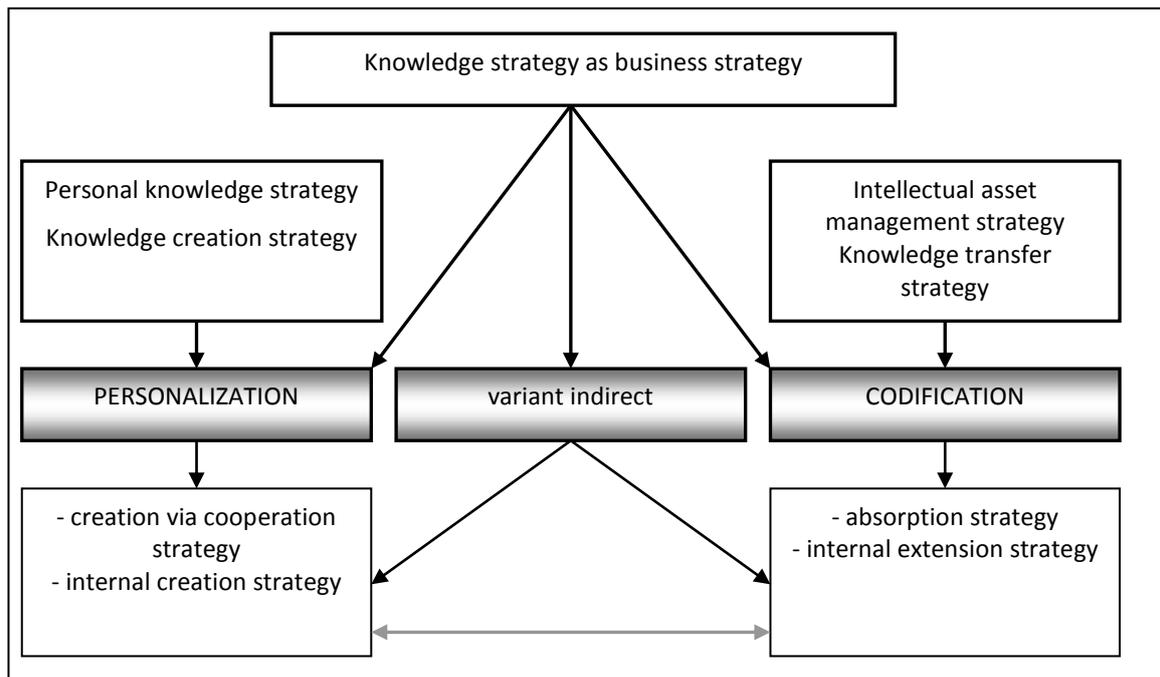


Figure 3 Variants of mutual interdependences in the application of knowledge strategy and knowledge management strategies

Source: Author's own study based on the strategy concepts by K. Wiig, 1997, as well as M. T. Hansen, N. Nohria and T. Tierney 1999

7. CONCLUSIONS

The conditionings of managing every organization are a combination of specific conditions and situations it comes across along with the system of possibilities arising from resources it disposes of. Therefore, there is no universal formula saying how to manage an organization in a given situation, much less there is no universal algorithm saying how to implement KM in an organization. Every enterprise can choose different approaches to creating and maintaining its competitive position. In general, it can independently create distinguishing knowledge, it can actively acquire knowledge from the environment in order to work out its creative and individual form or imitation of the existing solutions, it can also strictly protect the knowledge already possessed for its exclusive use, finally it can use a configuration of these approaches. What is important, however, that the entirety of those processes is not accidental but is a result of rational thinking.

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THE SIGNIFICANCE OF EMPLOYER BRAND IN THE RECRUITMENT OF COLLEGE AND UNIVERSITY GRADUATES*

Renata Oczkowska¹

Abstract: *The article is presenting the essence of the image of an organization as an employer - employer brand, indicating college and university students and graduates as the recipients of creating the image of an employer - employer branding, as well as the ways of shaping a good opinion among college and university students and graduates as prospective employees. Reference is made to the study of the student organization AIESEC Poland on the significance of the employer's image among the factors determining the choice of the most attractive employer.*

Keywords: *image of an organization, employer brand*

1. INTRODUCTION

In connection with the development of the knowledge-based economy, building the image of an organization as an attractive workplace is an important factor of creating its competitive position. The positive image of an employer enables to stand out among other entities of the market play and establish its unique position in the awareness of the entities of the environment.

The image of a firm is a significant element of choosing the workplace. An attractive employer can more easily recruit employees with appropriate competences and intellectual potential, but also reinforce the loyalty and commitment of already hired workforce.

Creating an image of a good employer - requires a new attitude to activities undertaken in the personnel sphere. The proper recruitment of employees, employee on boarding, personnel development, as well as the provision of an adequate remuneration level, the shaping of appropriate communication or work conditions are important issues. These activities influence the attitudes of workers to the employer, facilitate the identification with the goals of the firm, enable to activate creativity and innovativeness among the workforce, favor job satisfaction and, in consequence, create goodwill.

The aim of the article is to present the essence of the image of an organization as an employer - employer brand, indicating college and university students and graduates as the recipients of creating the image of an employer - employer branding, as well as the ways of shaping a good opinion among college and university students and graduates as prospective employees.

2. EMPLOYER BRANDING

The interest in the issues related to the image of an organization goes back to the early 1950s, whereas the idea of building the image of an organization as an attractive employer came into existence much later, in the 1990s. An English scientist, T. Ambler and a marketing

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practitioner, S. Barrow, who were the first to define the term "**employer brand**", are considered its precursors [Amber T., Barrow S., 1996, pp. 185-206]. According to them, employer brand is the package of functional, economic and psychological benefits, associated and obtained in connection with the employment at a given employer's. Creating an employer's brand image - **employer branding** - consists in the use of marketing techniques to create such a climate and image of an organization which is attractive both for the current staff and for potential workers.

In accordance with A. Mayo's approach, employer branding includes everything that is communicated (consciously or not) to every present or future employee [Mayo A., 2001, p. 123]. In M. Kozłowski's opinion, employer branding are activities undertaken by an organization, directed to the present and potential employees, seeking to build its image as an attractive employer, as well as supporting its strategic business goals. On the other hand, A. Mikulska understands employer branding as a strategy of creating desired associations referring to a given firm as a workplace in the minds of potential employees. This approach considers one target group, namely potential workers.

To sum up, we can assume that employer branding includes activities undertaken by an employer, addressed both to the existing and the prospective employees, as well as to other stakeholders, the aim of which is to build the image of an attractive employer, and thus support the strategic goals of the organization, the enforcement and improvement of the competitive position and goodwill [Oczkowska R., 2015].

Employer branding can be defined as a strategy of attracting, hiring and retaining the most talented, valuable employees in the organization.

Employer brand planned by an employer should be unique, which means the necessity for an employer to distinguish itself from other organizations when seeking talented workforce and fixing the image of its own unique position in the recipients' awareness. The image of an organization should be closely connected with its identity, which is a set of attributes distinguishing a given organization from other firms, particularly its close competitors. It is also a way in which a business wants to present itself to selected groups of the environment, using symbols, means of communication and behavior for that. Therefore, the identity of an organization is a basis on which an organization builds its image, that is a picture formed in the awareness of the entities of the environment and the internal environment. An image is a picture formed in the awareness of current workers and other stakeholders, dependant on their personal experiences or information reaching the environment. A positive image, and in consequence also goodwill, become a capital which materializes in the form of the value which investors are willing to pay for the firm's shares, customers to remain loyal to it, and the authorities and local community to provide their favor and approval for their operations.

Employer brand is a category which changes in time, under an influence of numerous factors, primarily the employer's activities, but also activities undertaken by competitors and changes taking place in the environment of the organization, e.g. in the industry, law regulations or on the labor market. Therefore, it is necessary to build and ensure the maintenance of a positive employer brand and investigate how it is perceived on a continuous basis.

3. COLLEGE AND UNIVERSITY STUDENTS AND GRADUATES AS THE RECIPIENTS OF EMPLOYER BRANDING

Activities implemented by an organization in terms of employer branding are addressed to two basic groups of recipients: internal and external ones. Present employees of an organization make up the first group of the recipients. The other groups is made up of the stakeholders of the firm, including: shareholders, customers, suppliers, competitors, local

authorities, local communities, and first of all potential employees forming the external labor market of a given organization, college and university students and graduates included.

The expectations of the stakeholders towards the firm are varied. They are presented in Table 1.

Table 1 The expectations of the stakeholders of the firm

Stakeholders	Stakeholders' expectations
Shareholders and owners	Growth of goodwill Maximization of the value of shares Full and reliable information Competent managing bodies Creation of a positive image of the firm
Employees and potential employees, including college and university students and graduates	Satisfactory remuneration Fulfilling obligations towards employees Full and reliable information Job satisfaction, ability to develop Efficient firm management Effective conflict solving Building career path
Customers	Product quality Purchasing process Personification of relations with customer Image of the firm
Suppliers	Financial reliability Meeting obligations Ethical activities Culture and professionalism of activities Effective communication
Competition	Transparency and clarity of activities Fair competition Culture of business activities
Governmental and social institutions	Observing legal norms Cooperation for the stimulation of local and domestic development Support for charitable institutions and those conducting social activities Protection of the environment
National and regional communities	Safe activities, unthreatening to the society Protection of the environment Patronage over and sponsorship of cultural, sports and scientific events Co-financing activities for local development

Source: Own study

External recipients, making up the external labor market, to whom the employer branding activities are addressed, are potential employees (Figure 1). In this group we can distinguish a few market segments:

- potential employees who were employed in the organization but do not work for it at present,
- potential employees who at least once participated in the recruitment process conducted by the organization but did not become employed,

- potential employees who have never had a contact with a given organization but have competences the acquisition of which would be attractive to the organization.

In each of these segments there may be college and university students and graduates constituting a segment in itself.

Among external recipients we can also mention: family members or acquaintances of current and former employees.

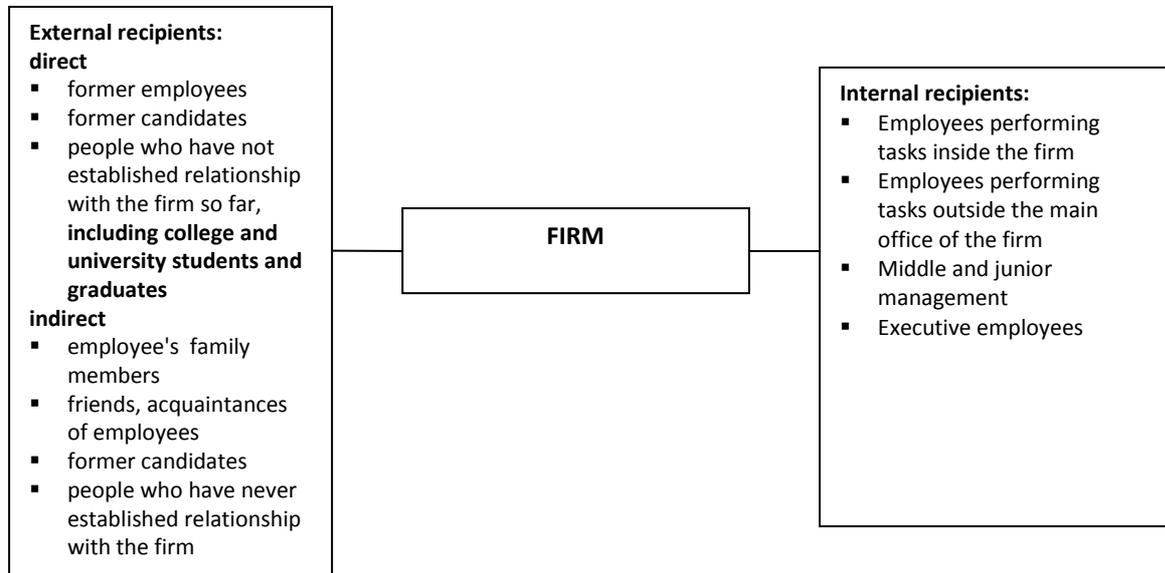


Figure 1 The recipients of employer branding activities

Source: Baruk A. I. 2006, p. 61

Internal recipients are employees hired by the organization. Internal employer branding is a strategic process consisting in making the employees aware of the goodwill of the firm, strengthening positive attitudes towards the employer and prompting employees to pass and communicate this image to the external environment [Asha C.S., Jyothi P., 2013, after: Turek D., 2013]. The role of the employees' attitudes and behaviors becomes the crucial element determining the image of a given organization. The employees' loyalty, readiness to present the organization in a good light, or the willingness to improve processes serving customers become factors which influence the assessment and image of the organization, setting the capabilities of competing on the market.

Image-related activities directed outside aim at an increase in the stakeholders' awareness on the functioning of a given organization in the environment. In particular, the activities focus on attracting to the organization potential employees who are distinguished by the profile of the possessed competences desired by the organization - skills, qualifications, qualities and values; this is the group which includes mainly college and university students and graduates although they could obviously have a previous contact with the firm during their internship or practical training.

As it was mentioned before, employer branding consists in applying marketing techniques to create such a climate and image of an organization which is attractive both to present and potential employees.

The actions related to employer branding may have an external and internal dimension.

The external dimension means that undertaken initiatives are directed to the environment. In employer branding it is very important to choose an appropriate communication channel

adjusted to the target group the organization is interested in. Reaching candidates in an effective way requires the use of proper tools adjusted to the recipients of the message, which should take into consideration the experience and status of a candidate, the preferred ways of communication with the environment or the system of values.

The key activeness in this respect are classical activities including: organizing "open doors", participation in job fairs, active promotion at colleges and universities (via lectures, presentations, meetings with students, practical training or internship programs), leaflets, brochures, posters, advertisements in the press, putting the firm forward to "good employer" ranks, mom-friendly firm ranks, etc.

Online tools are definitely effective due to the frequent presence of the young generation in particular, thus, college and university students and graduates, on the Internet. Among online tools we can mention

- search engines,
- "career" websites being the flagship of a firm,
- attractive recruitment ads,
- professional social networking sites: GoldenLine, Profeo, LikedIn, as well as relational ones
- Facebook, or Twitter, which are an effective tool for communication with professionals and young people,
- - other tools: professional recruitment films, company blogs, information bulletins, interactive games, as well as virtual job fairs [Wiśniewska S., 2013].

The internal dimension of employer branding refers to the current firm workers and consists in raising job satisfaction and showing concern for the friendly atmosphere at work. The activeness of a firm towards its employees should consider the following areas:

- worker protection - health care, helping in difficult financial situations, health leaves, departure benefits,
- work conditions - occupational safety, ergonomics of the workplace, social benefits, pension insurance,
- planning employees' tasks, scope of responsibility and transparent remuneration system
- increasing employees' satisfaction and self-realization opportunities,
- maintaining the stability of employment and rising the employees' sense of financial safety
- ensuring work-life balance,
- communication, informing employees and involving them in the decision-making process in the firm.

4. EMPLOYER BRAND AND ITS SIGNIFICANCE FOR STUDENTS - IN THE LIGHT OF RESEARCH RESULTS

For 24 years, a student organization, AIESEC Polska, has conducted an "Employer of the Year" survey. The aim of the survey is to get acquainted with the opinions and expectations as for the professional work of the student environment.

The results of the survey conducted among students, published in the AISEC report, indicate that in 2015 the most desired employers were: Google, EY (former Ernst@Young), PwC, Deloitte, ING, PZU, PKO BP, KPMG, Jeronimo Martens and Capgemini (Table 2).

Table 2 The most desired employers in the years 2012 -2015

Employer	2015	2014	2013	2012
Google	1	1	3	3
EY	2	2	1	1
PwC	3	3	2	2
Deloitte	4	11	5	5
ING Bank Śląski	5	6	7	8
PZU	6	5	7	8
PKO BP	7	4	4	6
KPMG	8	7	9	7
Jeronimo Martens	9	-	-	-
Capgemini	10	-	-	-

Source: Employer, 2016

The data included in Table 2 enable to find out that the first three firms were 3 top-ranked firms in the years 2012-2015. ING Bank Śląski was higher in the ranking, whereas PKO BP noted a drop in its position. For the first time, Jeronimo Martens and Capgemini ranked among top ten.

Among the most important factors determining the choice of the three most desired Employers of the Year there were the following aspects: the activeness of the firm on the market (71% indications), image and popularity of the firm (71%), adequate industry (64%) and high pay (60%) (Figure 2). In comparison with the previous survey, there was an increase in the remuneration and non-financial benefits, friends' opinion (53%) and prestige of the job (47%), as well as high chances for employment. A significant role of the image of a firm should be emphasized.

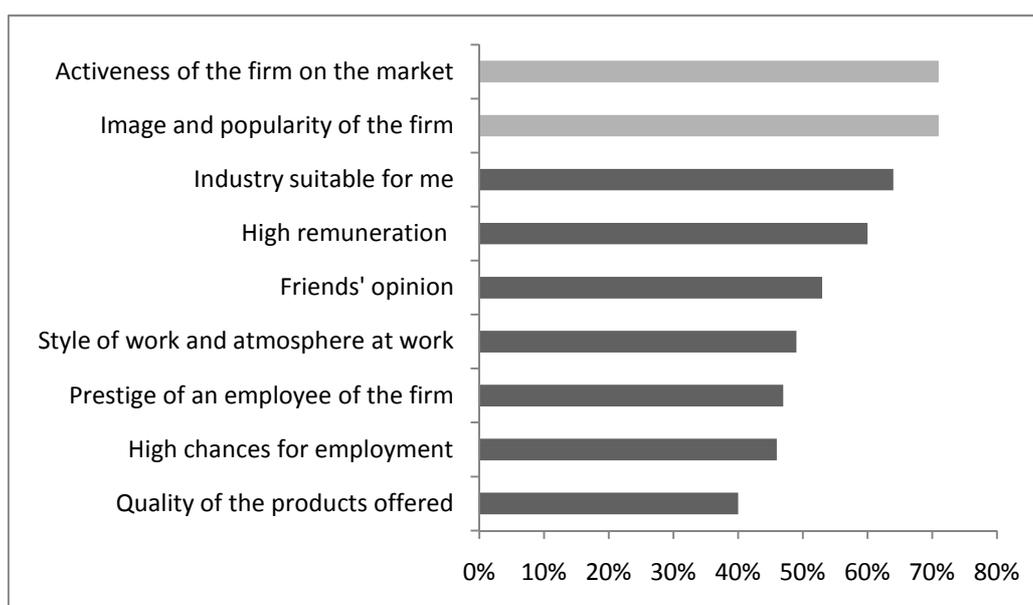


Figure 2 Factors determining the choice of three most desired Employers of the Year 2015

Source: Employer, 2016

It was the Internet which turned out to be the most important source of information about employers (82% indications) - just like in the previous editions of the survey - continuing to increase its advantage over the other sources of information (Figure 3).

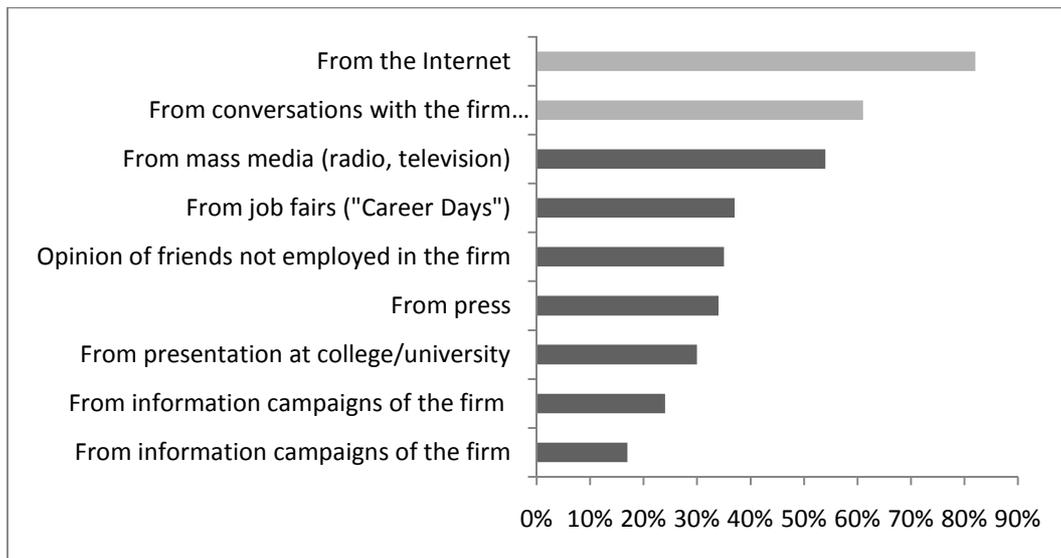


Figure 3. Sources of information about employers

Source: Employer, 2016

Also job fairs (37%), conversations with friends (35%) and information campaigns (24%) are gaining in importance as reliable sources of information about employers.

The presented survey results constitute very important information for employers and indicate effective tools of employer branding, moreover, they confirm an important role of employer brand as a factor significantly influencing the choice of a future employer by college and university graduates.

Therefore, employers should see to the proper presentation on the Internet, the proper layout and content of the "career" tab, among others, and also participate in job fairs, to a greater extent cooperate with university career services in order to establish contact with students.

5. CONCLUSIONS

A positive image of an organization as an employer is becoming more and more important, which is manifested not only in the results of the Employer of the Year survey quoted in this paper, but also in organizing numerous programs and contests in order to promote good employers. The following initiatives can be mentioned here: the Best Employer or Responsible Employer - HR Leader. Active participation of businesses in such ventures suggests that organizations notice a vital role of engaging in employer branding.

Renowned firms more easily attract the best candidates for a job, and stabilize the staff because working for a reputable company gives additional motivation to improve qualifications, provides the sense of satisfaction and the recognition of the environment, thus, it better meets higher needs: for recognition and prestige. It is worth emphasizing that an organization achieves not only benefits in the personnel sphere. Its brand strengthens, and so does the brand of the products and services offered, which in consequence leads to achieving competitive advantage.

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SHADOW ECONOMY IN FOREIGN TRADE

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Abstract: *This article aims to study shadow economy in foreign trade. Defined development stages of shadow economy (empirical research, accumulation of primary data and deep economic-theoretical analysis, comprehension of accumulated information). Analyzed the views of basic researchers dealing with emergence and development of shadow economy in the world. Reasons for evolving of and increasing in the scope of shadow economy in FEA are characterized (economic, social, ethical, administrative, legal, political, anthropological, globalization). Defined essence of shadow economy in foreign trade. Presented different approaches characterizing essence of shadow economy in foreign trade (statistical approach, legal approach, economic approach, financial approach, motivational approach, from the positions of morality). Defined types of shadow economy in foreign trade: informal, unofficial, fictitious, illegal, criminal. Subjects of illegal economic activity in foreign trade are analyzed. The level of subjects of illegal economic activity in foreign trade are presented (high level, middle level, low level). Classification of instruments used by the subjects of FEA in carrying out illegal economic activity is presented.*

Keywords: *Foreign trade, Shadow economy, Legalization, FEA, Informal*

JEL Classification: *O17, D78, H11, H26*

1. INTRODUCTION

Shadow economy is harmful to society and state, causing reduction of GDP and standards of living, spread of uncontrolled trade with commodities of poor quality or even dangerous ones, growth of economic and tax crime rates, outflow of funds, national economy downturn in the global markets and threat to global economic security.

Today, without knowing volumes of shadow economy it is impossible to get real scope of national economy, including foreign trade. That is the reason to update study of the essence of shadow economy, especially in foreign trade, its stages, types and causes of origin, classification of tools used by economic agents for the purpose of shadow economic activity.

2. LITERATURE REVIEW

Research results in the field of shadow economic activities are given in the works by Hart K. (1973), Gutmann P. (1977), Katsenelinboigen A. (1977), Bokun, P. (2001), Gerasimov, Y. (1999) and others. Issues of shadow economic activity in foreign trade are examined by such scientists as Fleychuk M. (2006), Zhalilo J. (2013), Tyschuk T. (2011) and others. Methodological approaches to assessment of shadow economy, including foreign trade are examined by Arkhipov A. (2014), Eliseev I. (2001), Ryabushkina B. (2003), Yakovlev A. (2015), Schneider F. (2012) and others.

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Several studies have been conducted across countries and over time to gain more information on the phenomenon and its causes and consequences (Feige, E.L. 1989, Katsenelinboigen, A. 1977).

However, the scientific vocabulary has not yet formulated the concept of «shadow foreign trade activities», methodology for determining shadow turnover in this area is insufficient and the issue of its implementation in economic practice is still controversial and requires further investigation.

3. METHODOLOGY

Theoretical and methodological fundamentals of writing this work represent a set of general and specific methods of scientific knowledge, use of which is due to the purpose and objectives, namely: analysis and synthesis, comparison and generalization; induction and analogy, systemic and structural analysis.

4. RESULTS AND DISCUSSION

Investigation of shadow economy is continuing for more than half a century, but there are still tense debate over its definition, classification, causes, social - economic impact, assessment methods and countermeasures. British sociologist Keith Hart was the first to study unofficial economic relations, who, when studying economic life of the capital of Ghana (m. Accra) in the late '60s of the twentieth century, discovered that the majority of employed local people had nothing to do with the formal economic system and named "self-employed" workers with the term "informal sector" (Hart, 1973).

K. Hart divided revenues of local population into three groups, based on opposition with the "formal - informal" and "legal - illegal" (Hart, 1973):

1. *Formal income* - wages in public and private sectors, transfer payments (pensions, unemployment benefits);
2. *Legitimate informal income* - employment in primary (agriculture), secondary (working artisans, tailors, etc.) and tertiary (large and small trade) sectors, production of services (various small services, begging, etc.)
3. *Illegal informal income* - services (illegal lenders, drug dealers, smugglers etc.) and transfers (theft, gambling, etc.).

K. Hart was the first who emphasized on the importance and necessity of informal structures' analysis, as without it official economic indicators are quite doubtful, and evaluation of key economic processes and trends is inadequate.

K. Hart research of the informal sector in parallel with the formal became the impetus for many scientists. In 1972 there were published the results of a collective research of informal economic activities in Kenya, conducted by the International Labour Organization (ILO, 1972).

In the history of foreign studies of shadow economy with a certain degree of conventionality two stages are distinguished (Figure 1).

At the same time American economist P. Gutmann proved that informal economy exists not only in underdeveloped countries but also in developed capitalist countries (Gutmann, 1977), further he assessed shadow sector of the US economy as 10% of the officially registered GDP (Gutmann, 1979).

Almost in parallel with the works of P. Gutmann there were published other works, which presented slightly different estimates of the shadow sector in the United States: American economist Edgar Feige calculated that the informal economy covers one third of official GDP, and his colleague V. Tanzi defined shadow US economy at 4.4% of GDP(Feige, 1977).

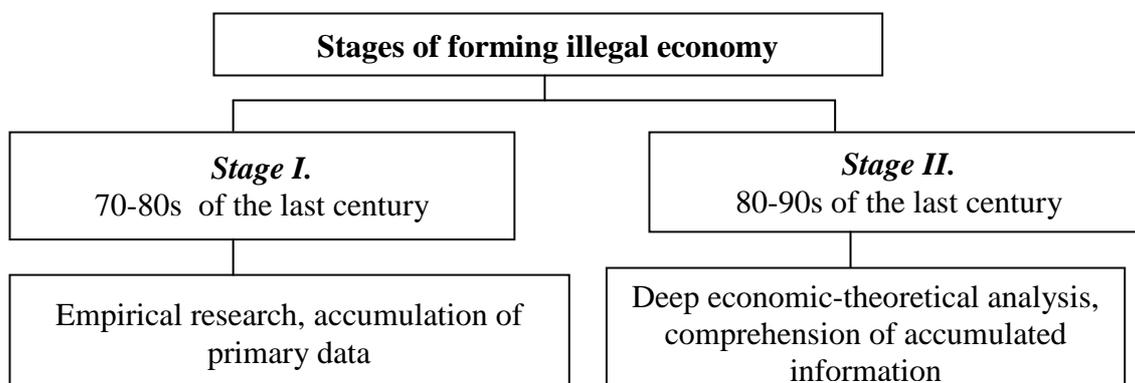


Figure 1 Stages of forming illegal economy

Source: Arkhipov A. Economic security: assessment, problems, ways of ensuring / Arkhipov, A. Gorodetsky, Boris Mikhailov // Issues of economy. - 1994. №12. - P. 35-39

Works of these scientists gave impulse to rapid study of shadow economy in many countries.

First publications concerning the existence of informal economic sector not only in underdeveloped and developed capitalist countries, but also in the countries of socialist camp appeared in 1977, they were: "The second economy of the Soviet Union" by American Sovietologist Gregory Grossman (Grossman, 1977) and "Colored markets in the Soviet Union" by Aaron Katsenelinboigen(Katsenelinboigen, 1977)

Until 1989 among researchers of shadow economy was commonly held that main reason for its occurrence is the result of modernization, when farmers move to cities with expectation for higher earnings, but unable to get a job in the industry, due to lack of skills and therefore are forced to shadow activities.

A fundamentally new approach to the genesis of shadow economy was put forward in 1989 by Peruvian economist Hernando de Soto in his book "*The Other Path*" where he points out that the main cause of shadow economy is bureaucracy.

Reasons for evolving of and increasing in the scope of shadow economy in FEA:

- **Economic:** high rates, large amount and complex mechanism of calculating taxes; the striving of obtaining super-profit; instability of the business climate in the country; instability of the investment climate in the country; establishment of favorable conditions for the functioning of individual entities; competition within market economy; connection between business and criminal organizations.
- **Social:** high unemployment and orientation of the large part of population on getting income in any way; violation of obligations of social orientation of the state; low authority of the government in the population; social differentiation of the society; low standard of living.
- **Ethical:** weak ethical base of business; lack of education in business culture, which all institutes must have in civil society.
- **Administrative:** excessive administrative barriers that prevent the development of legal business; bribery of officials; absence of dependence of the salaries of officials

on the concrete results with developing legal market economy; large informal burden on businesses.

- **Legal:** imperfect legal framework of entrepreneurship; weak law enforcement agencies providing logistical resources; low level of legal knowledge and legal culture of population; weak preparation of employees of law enforcement institutions to work in new economic conditions; ineffective law enforcement activities against illegal and criminal shadow economy; imperfect coordination of mechanism to combat economic crime; absence of clear distinction between official and shadow areas of activity.
- **Political:** the contradictions in the political system; the merger of government and private sector.
- **Anthropological:** contradictory human nature, a desire to have more, pay less.
- **Globalization:** use of the innovations of latest scientific and technological progress in their own interests; formation of favorable institutional environment for international financial transactions; use of transfer pricing; use of offshore centers.

Empirical analysis of shadow economy development capabilities in various sectors shows that the most favorable area for its implementation is foreign economic activity. This is due to the peculiarities of border crossing regimes and mass character of export and import operations and shortcomings of legislation in this area in the countries with their economy in transition.

Illegal economic activities in foreign trade of commodities is related to the implementation by FEA subjects of dubious foreign operations or those that violate current legislation and are not taken into account by official statistics, evasion of mandatory taxes and charges in order to minimize economic costs and maximize profits accordingly with neglecting generally accepted social norms and principles of socially responsible business, leading to social losses due to the mechanism of redistribution of tax resources for the benefit of individual private and corporate interests.

Classification of instruments used by the subjects of FEA in carrying out illegal economic activity is presented at Figure 2.

Let's explore definitions of illegal economic activity in the foreign trade which are based on different approaches:

- *Statistical approach* - hidden activity of foreign economic activity subjects which is not considered by official statistics.
- *Legal approach* - activities of foreign economic activity subjects conducted with violation of applicable law.
- *Economic approach* - illegal or dubious foreign trade operations conducted by subjects of foreign trade activity in order to minimize economic costs.
- *Financial approach* - avoidance of FEA subjects from the payment of mandatory taxes and charges while conducting foreign trade operations.
- *Motivational approach* - illegal or dubious foreign trade operations engaged conducted by FEA subjects in order to maximize profits.
- *From the positions of morality* - activities in the field of foreign trade in goods which violates generally accepted moral standards and the principles of the society.

Shadow economic activity in foreign trade can be:

1. *"Informal"* - is informal cross-border trade ("unorganized import") - legal importation of goods into the country by individuals (both residents and non-residents) with the aim of further sale on the domestic market. Within this trade Ukraine except losses of customs duties

loses taxes on profits from the sale of imported goods. In addition, products that are transported for individuals' for personal use are not subjected to any review and may be harmful to health and life, for example, it can be toxic toys or radioactive utensils. It should be noted that this type of trading is recognized legal as it is almost impossible to prove that the person is importing the goods not for personal use.

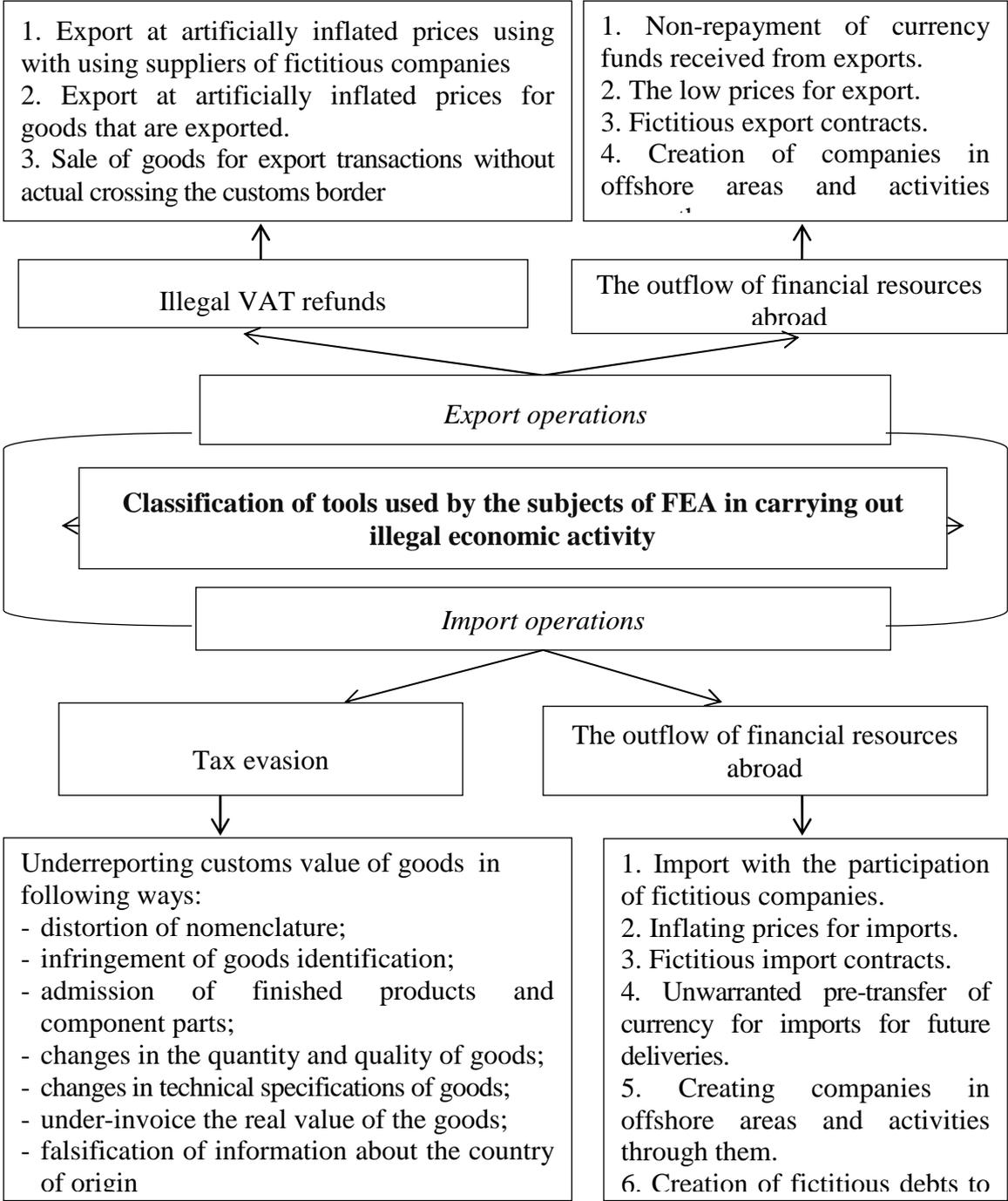


Figure 2 Classification of instruments used by the subjects of FEA in carrying out illegal economic activity

Source: Author research

2. “Unofficial” - is associated with offshore centers due to differences in tax laws and levels of tax rates in different countries.

Due to the presence of offshore zones market players have the opportunity to minimize taxes, to withdraw from the control of fiscal and law enforcement authorities a part of doubtful or illegal financial or business transactions.

Unofficial economy in the area of foreign trade is connected with the activities of exporters that use transfer prices for the purpose of exporting financial resources and tax evasion in the budget, and importers who use "gray" schemes for this purpose.

3. "Fictitious" - fictitious transactions that are used to hide the real purpose of the operation carried out with the aim of paying less taxes or export of financial resources abroad. A striking example of fictitious transactions is pseudoexport. The essence of pseudoexport is that during the implementation of the contract, which as though provides export goods, the latter does not cross the customs border and is sold domestically. At the same time the documents are completed for committed export with the aim of illegal VAT refund.

4. "Illegal" - related in particular to the activities of individuals - non-residents who are illegally staying on the territory of Ukraine. Illegal labor migration and the shadow economy are closely interrelated. On the one hand, the shadow business provokes illegal migration caused by demand for cheap labor and defenseless labour of migrants. On the other hand, illegal migrants in country for whom official employment is impossible promote development and prosperity of shadow economy.

5. "Criminal" - criminal offenses.

Subjects of illegal economic activity in foreign trade - are set of institutionalized subjects that operate under established mechanisms of inherent crime algorithms.

The level of subjects of illegal economic activity in foreign trade:

1. High level - corrupt representatives of public authorities, employees of large companies and corporations, public and joint-stock companies, which control the activity of shadow structures; some law enforcement and controlling bodies associated with shadow economic activity.

2. Middle level - less influential representatives of institutions mentioned as well as entrepreneurs and highly paid professionals related to foreign trade shadow structures.

3. Low level - hired workers whose wages depend on the degree of their inclusion in the activity of shadow structures.

5. CONCLUSION

The results of conducted research allow to state that illegal economic activities in foreign trade of commodities is related to the implementation by FEA subjects of dubious foreign operations or those that violate current legislation and are not taken into account by official statistics, evasion of mandatory taxes and charges in order to minimize economic costs and maximize profits accordingly with neglecting generally accepted social norms and principles of socially responsible business, leading to social losses due to the mechanism of redistribution of tax resources for the benefit of individual private and corporate interests.

Main instruments which are used by the subjects of FEA in carrying out illegal economic activity are export at artificially inflated prices using with using suppliers of fictitious companies: export at artificially inflated prices for goods that are exported; sale of goods for export transactions without actual crossing the customs border Non-repayment of currency funds received from exports; the low prices for export; fictitious export contracts; creation of

companies in offshore areas and activities across them; distortion of nomenclature; infringement of goods identification; admission of finished products and component parts; changes in the quantity and quality of goods; changes in technical specifications of goods; under-invoice the real value of the goods; falsification of information about the country of origin; import with the participation of fictitious companies; inflating prices for imports; fictitious import contracts; unwarranted pre-transfer of currency for imports for future deliveries; creating companies in offshore areas and activities through them; creation of fictitious debts to affiliated entities abroad.

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UNIVERSITY EDUCATION IN THE ERA OF MODERN CHALLENGES VS EMPLOYERS DEMANDS - THE CASE STUDY OF POLAND*

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Abstract: Answering the question concerning the guidelines for teaching to meet current expectations, directed by the labor market, needs the information from employers. The next step is comparing this information on the required characteristics and candidates' potential to work with the existing teaching process at universities. The didactic process may indeed have an impact on what kind of candidates leave the university for the labor market. It is therefore important to determine to what extent the positive intervention and change in the field of teaching is possible in order to meet the needs of the labor market. However, beyond the fact of preparing future graduates to the labor market, it is also important to prepare young people for life and work in a global and competitive society [Śliwińska K., 2005, p.20-25]. The paper objective is the presentation of consideration and findings from both literature and empirical research on the employers' expectations towards university graduates in terms of their competencies and abilities when entering the labor market.

Keywords: higher education, entrepreneurship, labor market

1. INTRODUCTION

The problem encountered and discussed in the literature defined as *educational mismatch*, refers to the gap between contents that are transmitted to students, future graduates entering the labor market and the expectations of specific skills announced by employers. Factors that affect this gap can be divided into three groups:

- Dynamics of changes in economic processes associated with progressive technological processes and globalization,
- Targeting employers' requirements in terms of their expectations, their own needs,
- Shaping the educational contents by the universities as more *general academic-oriented* where not only the knowledge but also the characteristics and behavior of students is important.

For companies not only professional abilities are important when hiring the new personnel. The overall employee's attitudes should also be considered. It is important to study and find answers to the question to what extent the intervention is possible and needed when talking about adaptation of education changes according to the labor market expectations. This does not mean the labor-oriented adaptation is not needed. This is rather the question on the intensity of labor market orientation against the need of fundamental education of students. Apart from the professional life of future employee, he or she needs also to function as the member of society and family. Therefore it is possible to make the division of objectives from the educational point of view.

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Also in the process of recruitment companies assess the level of education and its grading, which is presented by the education results. Therefore one does not speak about competencies but intelligence, abilities, knowledge.

As noted by A. Dolot [Dolot A., 2013, p.650] competencies depend on the organizational environment, both the organization from which the potential employee (graduate) is hired and then where he is employed, where her/his competencies are shaped. This obviously underlines the organizational role and less stresses the individual characteristics. This in turn leads to the important employer's role as the one who needs to change or strengthen the possessed by individual competencies.

In terms of adequate to labor market needs preparation of students, one should focus on the attitudes, qualifications and abilities that future employees will be equipped in. In the process of providing these students' abilities in a large extent the cooperation between university and business is needed. This cooperation may be obtained:

- at the stage of direct contact asking employees for their expectations with reference to the graduates. The content may be both of the direct nature so that an interested company expresses directly its needs as well as indirect when the research is made with the representation of employers,
- analyzing the labor market statistics on the needs for specific job positions. Those statistics may have national, regional or local character. Such analysis have quantitative nature,
- analyzing in terms of qualitative nature, abilities of graduates,
- analysis of the future labor market. Such analysis are defined as foresight. The analysis refer on the one hand to the expectations of employers, and on the other hand to the abilities and knowledge of graduates,
- trainings and other forms of contacts between university and business representatives.
- It is important to find out if employers expect such abilities of employees which can be described as abilities to quickly adapt to the company requirements as well as the abilities to learn new things which company requires. Therefore not, as stated, technical competencies or adequate to the existing job position abilities are required, but the personal features which allow to quickly and flexibly adapt to the organization needs. On the other side, when speaking about the existing position, which could also be characterized as more "technical oriented" or not requiring the adaptation, the situation may look different. Therefore more and more important is the process of teaching attitudes and general competencies, which will build such abilities of students which will allow them to be better adaptive for future organization requirements.

Today's labor market situation is shaped and characterized by the rapidly changing environment - the era of modern economy, the era of globalization [Borowiecki R., Siuta-Tokarska B., 2012]. The organizational needs to permanently change into more and more innovative entity to be effective and competitive on the market. In the era of globalization or the era of data or even data processing the human activities are of a value. Human potential and human capabilities, or usage of intellectual capital [Alimpic S., 2014, p.203] or also the usage of human resources to function effectively [Oczkowska R., 2013, p. 541] are the main factors determining the dynamics of the changes on an organization. Appropriate knowledge management should transfer the knowledge into intellectual capital [Allimpic 2014, p.204].

The more important for organization success is the knowledge management then the management of usage of goods and materials.

The recruitment strategies for achieving the highest effectiveness, take into consideration the activities where people with experience are recruited which expands the potential of employees from just recent graduates to the employed people. The important factor [Oczkowska R., 2013, p. 544] in this case is the minimization of efforts leading to filling the gap between possessed and required preparation performance for the job position for which the candidate is sought. Human resource development is bi-directional [Oczkowska R., 2013, p.548]. On one hand this is the action driven by the needs of organization and on the other the needs of employee himself. In each case it drives from the needs of changing environment.

What is important and seems not to be recognized is that the abilities to adapt to the new economic conditions refer not only to the potential employees – not even to more extent – to the already employed personnel. As Z. Arsovski indicates [Arsovski et al, 2014, p.296] in modern management every person should re-shape and re-call his strengths and skills and put his value into organization.

It seems that such actions should not however be treated as one-time actions. One should look at such actions from process perspective, such actions should be employee's behavior. And so it should be for new, prospective employees, there is why in the process of perceiving potential employees one should take into consideration such situation as permanent change which is again presented and underlined by researchers [Borowiecki R., Siuta-Tokarska B., 2012].

Cooperation with business practice means both aspects of the demand for specific skills and competencies which universities can equip their students in, as well as the competencies and skills that the employer may not give directly, but which are also expected from persons who constitute the core of the management or team of experts in a company. This refers to the general interpersonal skills and attitudes of a candidate to work on the important position that requires good manners. Very often, unfortunately, there is presented a view that one should shape only selected competencies of a graduate for specific job positions, while at the same time one forgets about the thorough educational process, where attitudes of a graduate are obtained, which, after all, students gain not only through teaching, but throughout the period of study, through contacts with the fellowships, educators, teachers and at the same time shaping their attitudes and behavior.

In the transition from the phase of learning (education) to the phase of employment, employers are an important part of the equation. Education is for the employer a signaling function. In the absence of other forms of acknowledgment of skills and abilities of future employees, level of education and its quality expressed by the results of training, can provide information about the intelligence, skills and knowledge of a candidate [Ripemester, 2014, p.23]. Higher education, which is a summary of the educational process in schools is affected but without prejudice to getting a job [Jarmoszko, 2011, p.127]. Additional advantages include, among others, work as a volunteer, unpaid internships in large and well-known companies and everything that is making contacts and gaining experience.

Employers' expectations in terms of competencies and skills, and personal characteristics will vary depending on what position they want to hire new people (Figure 1).

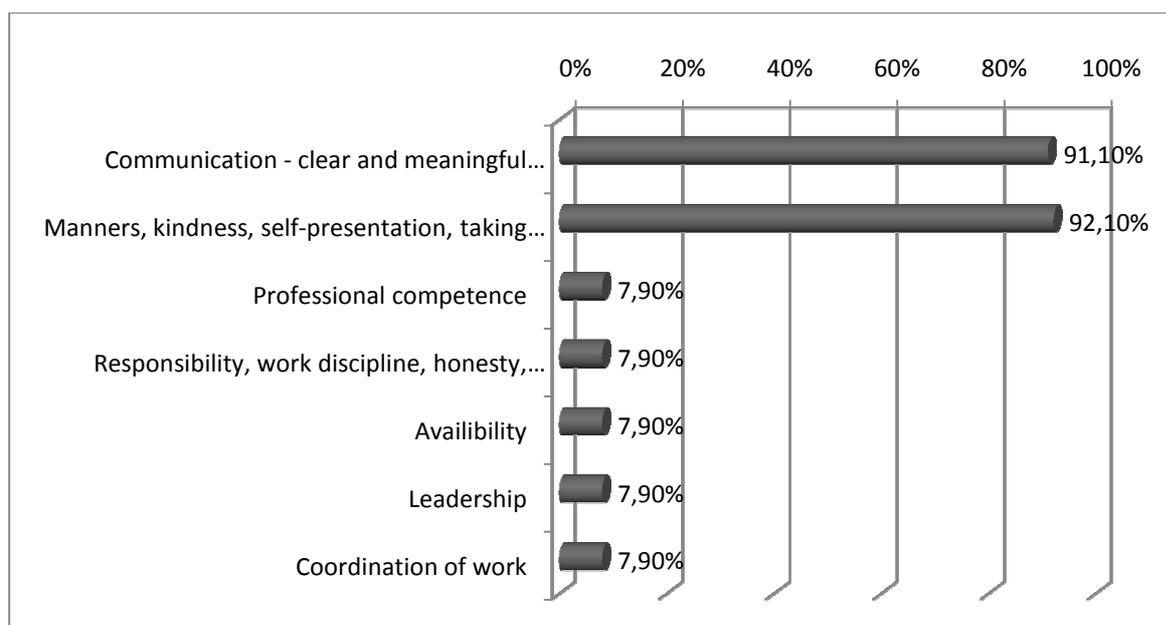


Figure 1 The competencies required for the positions of managers and officials

Source: Jelonek *et al*, 2012, p. 39

The teaching process, thus, focused on how best to prepare graduates to enter the labor market, should obviously be focused on equipping graduates in the features expected by employers (Table 1 - the characteristics desired), but one should not forget also about the overall development of the student.

Table 1. The skills lacking at graduates in the eyes of employers

Skills / Abilities	Indications of interest
Ability to combine theory with practice	42%
Customer service skills / customer contact	39%
Ability to solve problems	34%
Ability to organize work	33%
Knowledge of foreign languages	28%
Interpersonal skills	23%
Ability to work in a group	22%
Ability to adapt to changes in the environment	22%
Creativity	20%
Ability to operate machinery and equipment	11%
Computer and Internet literacy	10%
Ability to learn quickly	7%

Source: Jelonek *et al*, 2012, p.11

Trying to group the competencies expected by employers, the following groups can be divided:

- Ability to self-organization;
- Interpersonal skills;
- Work in a group.

Acquiring these competencies is possible through direct contact with other people and self-activity, ie learning by doing, or outside of formal education, such as local projects,

volunteering, initiatives pursuing passion and workshops [Jarmoszko, 2011, p31-32]. It is believed that these powers are not generally acquired while learning in higher education and only during professional work. However, expectations of employers are for the university authorities directional signal on how to shape the educational offer.

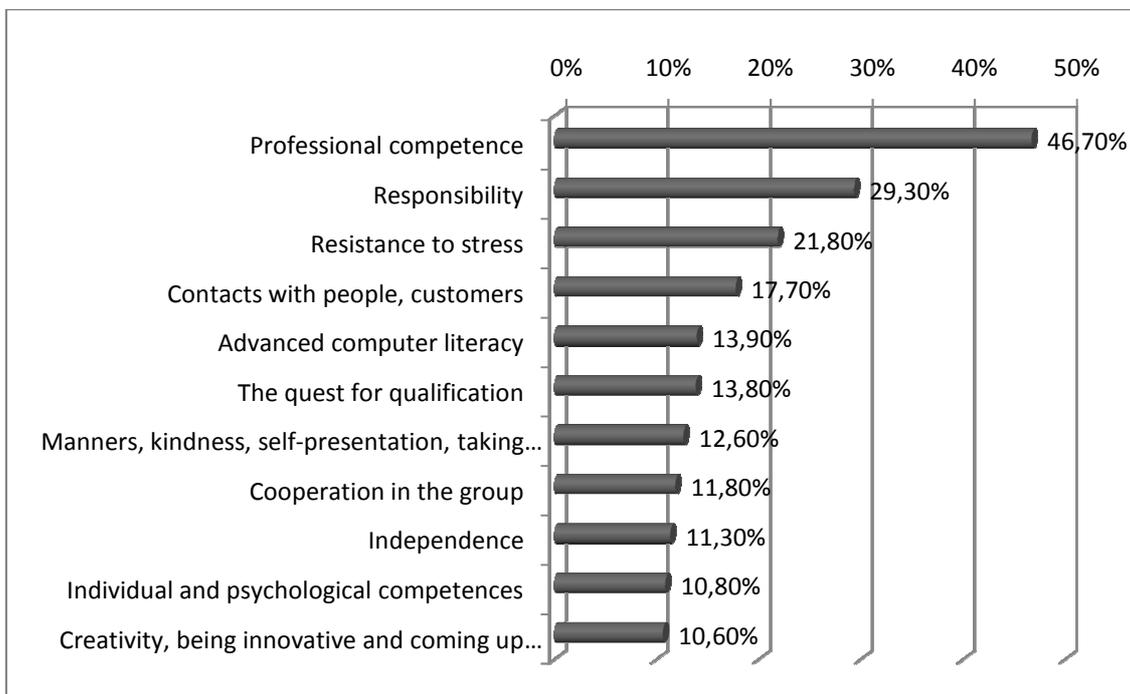


Figure 2 The competencies required for the positions of specialists

Source: Jelonek *et al.*, 2012, p. 39

Acknowledgement of the need for education through the practice is reflected in the results of a survey of students at the University of Economics in Krakow. Results of research conducted by the Department of Sociology at the University of Economics in Krakow confirm the need for learning through practice and for practice [Karwińska, Karwiński, 2005, p.352]. To achieve the desired effect, the traditional forms of teaching in the form of lectures should be replaced by classes where mutual solving problems from real life would take place. Also there should be the replacement of actual knowledge with the data and assistance in their own interpretations by the students and to propose solutions. Research results also confirmed that the need for change is noticed and declared by the scientific community. 82.1% of respondents from the faculty reaffirmed the need to make changes in didactics. Among the proposed changes and directions of changes, the mainstream was to activate the student through the introduction of methods of forcing to working the name of "to study and not to listen to a lecture." To be able to implement a similar mode of changes it would be necessary to reduce the number of groups, limiting the amount of lectures for the exercises and tutorials. To use non-standard methods of teaching it is also essential to have adequate technical facilities at universities especially in equipment and infrastructure.

Interesting results, confirming the validity of the changes in teaching, show data from the University of Economics in Katowice (Figure 3). The survey results show how the period of just five years have caused changed the opinion of students on the usefulness of the knowledge generated in the local university. As many as 46% against 29% of students from an earlier period found that the knowledge is not useful. There has been a change from answer "yes" to the answer "no". However, in this case, what should also be taken into consideration,

is the fact that virtually a quarter of respondents are still unaware of whether the obtained knowledge is or is not useful. However, as the authors point out, the perception of the usefulness of knowledge applies only to this present context, students do not perceive the stock of knowledge in the context of perspective, because they do not have the knowledge and awareness of how knowledge and attitudes which will be acquired in the course of study will result in the future. In the context of discussing the need for change in the teaching process there is also indicated the need, recognized by students, to change the form of knowledge transfer, as well as the amounts of the classes. At this point the context of presence also seems to be important as well as the context of present perception of knowledge and learning at the moment. Responses in both 2000 and 2005 are similar, although it seems from the answers that there is an improvement in this respect. It should be noted that the survey respondents were students of business studies.

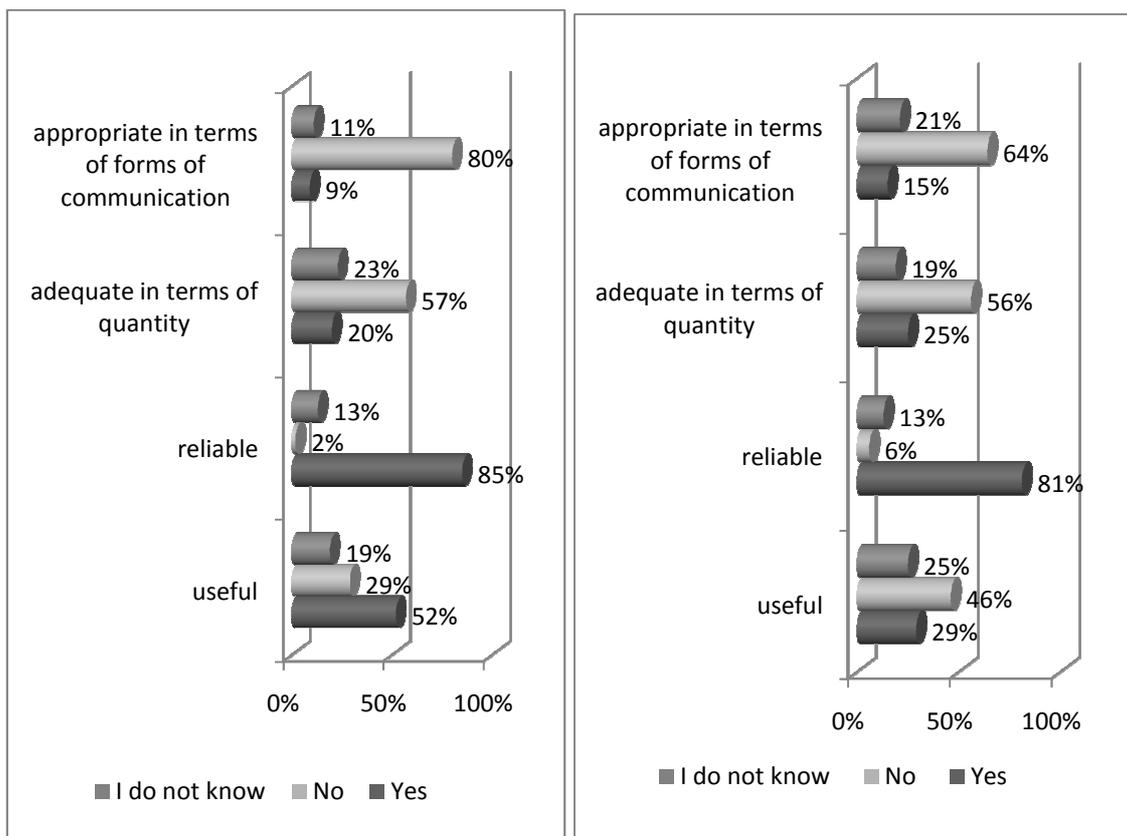


Figure 3 Characteristics of knowledge transmitted by teachers in the classroom, in the opinion of students 2000 years chart on the left and 2005 years chart on the right (in%)

Source: Own elaboration based on: Śliwińska K., 2005, p. 20-25

Expectations of employers towards job candidates, suggest however, that less attention is paid to specific knowledge, and more on general preparation and general potential of a candidate. Of greater importance are, therefore, features and general knowledge and attitudes of a candidate rather than direct, detailed expertise, which employers provide at the first stage of work as a training. For this reason there are situations on the labor market, where many graduates of technical-education nature work in accounting companies. Higher expectation of employers towards education are directed to young people. Graduate student with educational qualifications is seen as a market product. This implies decisions of companies in the context of competition, because human capital which consists of personal resources is an essential asset of the company. Taking into consideration a similar line of perception the importance of

graduate properly equipped with knowledge, the institution should seek to maintain a high quality of education [Francik *et al*, 2012, p. 28].

2. METHODOLOGY AND RESEARCH

The educational situation in the national dimension should in the first stage show the existing situation in the context of different types of cooperation with business which in effect should support the optimization of educational process. The research should also show to what extent universities are prepared and realize the process of educational optimization. Therefore firstly the state of university legislative internal acts existing at the university should be studied. Apart from that, further deeper assessment of the educational process is needed which means checking if the monitoring of the legislation is being made. Then, if the reports from this monitoring are made and finally if the recommendations are implemented into the regular educational practice. Such managerial controlling could give the answer on how national universities both public and private are prepared from managerial point of view to meet labor market needs and for the adequate adaptation.

Few areas of common university-business activities are taken into consideration when discussing processes of adaptation in terms of education-for-labor market needs. One of them is the research of labor market directions towards the need of education. Any possible knowledge that the universities may have is of a great value when speaking about the education towards labor market needs. Secondly the organization of education according to those needs. Is really such an action done by the universities. Are the courses elaborated or/and conducted with the entrepreneurs company (together with entrepreneurs)? Are the courses partly shared with the real practice education? Are there any possibilities of the internships or are the visits in companies predicted as elements of courses ? Finally the question which may also indicate the entrepreneurial process is whether the courses are offered where the element is the internship abroad, this means the internship in a company operating abroad.

Finding the answers to such educational situation in Poland may furthermore show the place at which the process of adaptation of university education to labor market needs is located.

One should also remember that the question is how the education may influence the support of improving human resources in companies. What mechanisms should be implemented to improve the quality of human resources in companies. In case of education adaptation – to what extent it should be implemented, what do universities think about such processes? There is why the research should also consist of opinion-oriented questions for respondents whether they consider as needed education-adaptive processes when speaking of improving through university activities the quality of human resources in companies.

The first question for respondents was how are universities engaged in different types of cooperation with business and administration leading to the optimization of educational process. The types of cooperation with business and administration were defined as directed towards the optimization of the educational process. Therefore the question reflected to those courses this kind of university educational activity which purpose is cooperation with business and public administration both characterized as “milieu” (university milieu).

The question referred to four levels of institutionalization:

- Existence of legal internal acts covering the cooperation with the milieu,
- Monitoring of the implementation of activities,
- Preparation of reports from the activities done,

- Implementation of recommendations from the reports.

The further level of university engagement the deeper this engagement is.

The results show (Figure 4) that more than half of universities have legal acts referring to the research directed towards directions of labor market needs for education (55,3%), less (46,6%) monitor the implementation of activities, 36,9% prepare reports from monitoring and 34% of universities implement recommendations from those reports.

More than half of universities have guidelines and internal acts on the organization of teaching according to the labor market needs. 40% of universities monitor the implementation of these tasks and less prepare the reports and implement recommendations from reports on the results of the strategy implementation. Still less universities are institutionally prepared for common courses preparation with business (35%) and the deepening of universities' activities in these directions is smaller and smaller which means universities do not have any special developmental strategy in this field. About half of the universities organize courses which part is internship in home companies. About 44% monitor realization of those activities and still less make reports and implement recommendations from reports. The least institutionalized is an organization of courses which element is the internship abroad. This entrepreneurial practice with added value which is the international dimension is represented by minority 31% of Polish universities. The reason why such actions are not so common may be the "international" barrier, not only the language but formal problems as well as financial dimension.

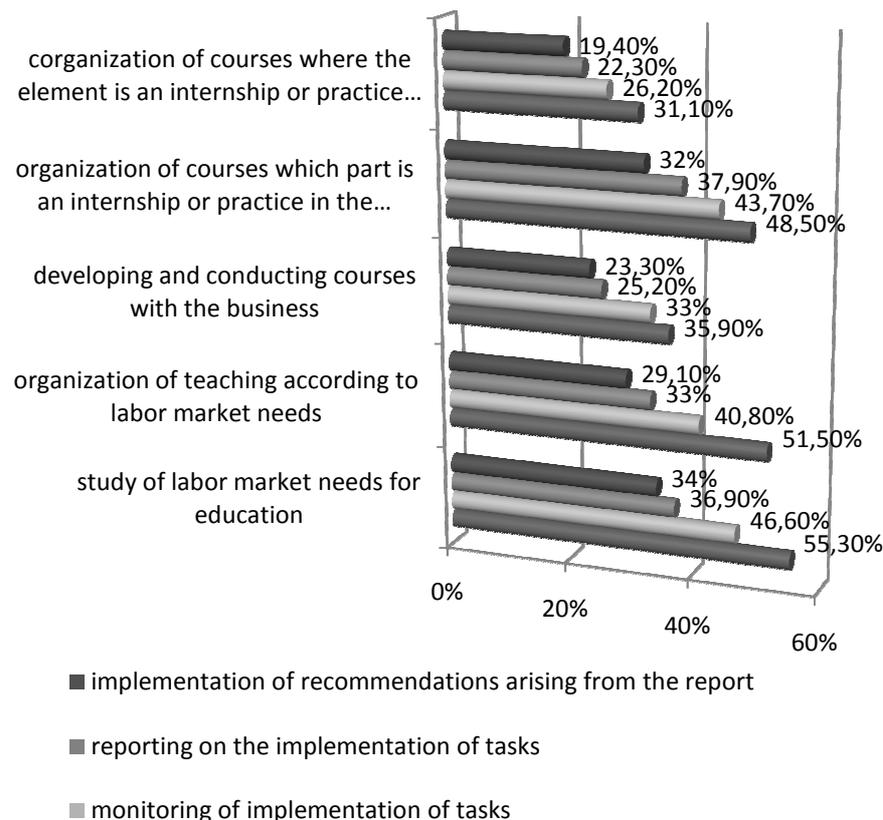


Figure 4 University engagement in different forms of cooperation with its milieu, directed towards the optimization of educational process

Source: Own elaboration based on the research among Polish public and private universities

The results of the research, where the representation of public and private universities participated, show that universities are in less than half institutionally prepared for the “entrepreneurial” dimension of the modern university model. However there is a lot to be done as there is only the half of higher education literally prepared and still less and less are engaged deeper in the transformation towards entrepreneurial university, which from the issues indicated at the beginning, refer to the adaptation abilities towards expectations of modern economy, globalization, era of data processing.

Against the current national situation leading towards the state of appropriate developmental cooperation between science and business, where to the higher extent the business requirements would at the level of education be found, another dimension of the research was done. The respondents were requested to express their opinions on the needs (Figure 5).

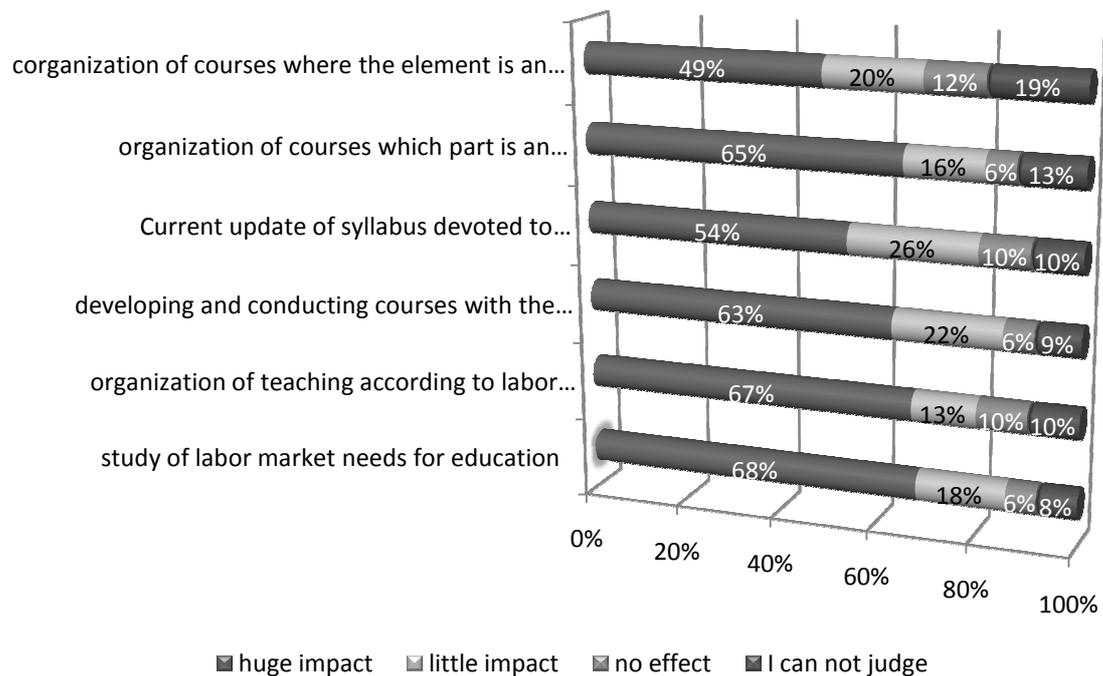


Figure 5 assessment of the impact of individual actions the university related to the implementation of the educational process on cooperation between universities and business environment

Source: Own elaboration based on the research among Polish public and private universities.

68% of respondents expressed as “huge” the impact of study of labor market needs for education on the university business cooperation. So the study itself was assessed positively in terms of flourishing this cooperation. Also almost to the same extent was perceived the organization of teaching according to labor market needs. 63% consider as important for cooperation developing and conducting courses with the business. More than half of universities consider as huge the impact of current update of syllabus devoted to entrepreneurship. This factor as well as the one with developing and conducting courses with business are strictly referring to the “educational gap”. Also more than half of responding universities consider as huge the impact for university-business collaboration the organization of courses with internship element. More important was considered the organization of courses with internship in a company and less but also important the internship abroad. All

these education-oriented elements show how important (huge) is perceived the education for the common university-business cooperation.

The conclusion from the research show that the solution for the problem of educational gap may be the direct cooperation between the business and universities. All presented to universities areas of common activities were noted as important for the cooperation between higher education institutions (both public and private) and business entities.

3. CONCLUSIONS

Today's era as precisely defined globalization era [Borowiecki R., 2015] or Data Age [Stamenkovic, Milanovic 2014, p.170] is with no doubt profiting as well as suffering from the quick decisions and quick and flexible processes. One of these processes is the transformation from graduate to the employee. To obtain this path as smooth as possible both for the student and the employer the university faces the problem of educational match towards the needs of the employer market. Making the university to be closer to the labor market may mean, among others, treating seriously labor market needs for a specific model of education and above all, the effects of this training. Also to an even greater extent, it means analyzing current changes in demand for specific knowledge and skills in the labor market by employers. Monitoring and analysis of the current labor market is, at this point, mainly the domain of labor market institutions such as labor offices, which, moreover, receive EU support for purposes related to the broad support of the labor market. In addition to tracking labor market needs for specific knowledge and skills, science and business cooperation can be of much more ad hoc. Employers can directly participate in academic activities which allow them to gain knowledge about future employees. Participation of employees of companies in the classes provides opportunities for the selection of potential candidates for employment. At the same time it allows students for direct contact with future employers. In the discussion of the desirable characteristics and skills of graduates one often draws attention to the requirements directly related to the specific work performed, but research indicates that employers expect skills and potential to the appropriate apprenticeship to the profession. Thus, it becomes important not only what specifically the candidate knows about the specific work. More important is her and his capacity to adequately carry out the work. The potential is created not only by the pure teaching, but throughout the educational process and the time spent at the university.

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BUSINESS PROCESSES MAPPING FOR IMPROVING E-SUPPLY CHAIN PERFORMANCE

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Abstract: *The paper presents a developed model of e-supply chain processes, based on a combined approach of GSCF and SCOR models, for the OEM level and the supplier- organization-customer sequence, as well as on the specificities arising from the implementation of appropriate standards in the automotive industry. Within the created conceptual model of e-supply chain processes, the focus is on defining and calculating key performance indicators, identifying gaps, depending on actual and target values of key performance indicators that belong to a particular performance attribute, as well as on calculating total performance of different types of supply chains. Based on this model, an approach to business process mapping in e-supply chains is developed, which focuses on identifying different types of supply chains and monitoring key performance indicators within a certain group of performance attributes, in order to spot where reaction is needed and thereby improve overall performance of the supply chain. The purpose of this paper is to highlight the role and importance of measuring and mapping performance of key business processes in e-supply chains, and its impact on the efficiency and quality of e-supply chains.*

Keywords: *supply chains, business processes, performance, mapping*

JEL Classification: *L20, L29, M10, M15, M21*

1. INTRODUCTION

Approach to business process mapping in e-supply chains is based on the previously developed model for improving e-supply chain processes. The developed model for improving business processes in e-supply chain is based on the combined approach of GSCF and SCOR models, and the specificities arising from the implementation of appropriate standards in the automotive industry. It focuses on interactions, control, analysis, and optimization of processes at the supplier-organization-customer sequence level in the supply chain in the automotive industry. This means the inclusion of automotive industry specifics into the model, such as operations in accordance with the rigorous standards of the global automotive industry, which implies the flow of materials and dispatch of finished goods under the FIFO system, based on exactly ordered range and quantity, on time, with acceptable supply of raw materials and the required safety stock of finished goods. As the supply chain involves the integration of multiple functions or processes in a large number of organizations, it is important for organizations to know who is or who should be part of the supply chain, or whose supply chain they are part of, how many tiers the organization manages, which suppliers and/or customers should be involved in the supply chain, when it is desirable to redesign the supply chain, etc. For these reasons, supply chain management includes visualization and monitoring of all key business processes and activities, i.e. the development of appropriate supply chain maps. Supply chain map should be easy to view and understand, display the right information, and help in improving the process of strategic planning. The key to making high-quality maps for strategic purposes is complete synchronization of the

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mapping process and the process of strategic planning. Maps allow identification of problem areas and provide support to the decision-making process. They can also be seen as a starting point for improving the process of supply chain management.

2. IMPROVING CONCEPTUAL MODELS OF E-SUPPLY CHAIN PROCESSES

The structure of the supply chain network comprises member organizations and relations among them (Appelqvist, Lehtonen & Kakkonen, 2004). In-depth knowledge about the structure of a supply chain can improve its performance. All supply chain members, both upstream and downstream, influence the supply chain performance (in terms of quality, delivery, price, flexibility). The need to identify the adequate type of supply chain performance measures is vital, as they will influence decision making. Several studies emphasize the need for the appropriate type of performance measures in supply chains (Gimenez & Tachizawa, 2012; Bai & Sarkis, 2012; Genovese, Lenny Koh, Kumar & Tripathi 2013; Koh & Demirbag et al. ,2007; Cabral, Grilo & Cruz-Machado, 2012; Saad & Patel, 2006; Vereecke & Muylle, 2006; Shepard & Günter, 2005; Gunasekaran & Patel et al., 2004; Chan & Qi et al., 2003; Aitken & Childerhouse et al., 2003; Morgan, 2004; Petroni & Panciroli, 2002).

Bearing in mind the analyzed key aspects of the process according to the SCOR and GSCF models (Croxtton, García-Dastugue & Lambert, 2001; SCOR model, 2012), it can be concluded that the process approach is a good starting point for analysis of individual processes, integration of processes within the organization, as well as in the supply chain. Also, the fact that organizations are no longer isolated entities, but integrated links in the supply chain, suggests that it is necessary to apply the process orientation at a higher level, i.e. the level of supply chains. Organizations should not constitute ad hoc supply chains, as they are unstructured, ill-defined jobs, organizational structures are not based on horizontal supply chain processes, and execution of the process is unpredictable. It is necessary that organizations, when applying the model of supply chain maturity management, derived from the model of process maturity, become able to reach the last level of maturity, i.e. be members of the organization in integrated and comprehensive supply chains.

Based on the SCOR model, GSCF model, and ISO/TS 16949, the authors specifically analyze and explore the automotive industry in the world and in Serbia, where conceptual model of e-supply chain processes will emerge as a result of the research.

Automotive industry specifics are reflected in rapid development, product complexity, large-scale production, high technology, need for product reliability, and a large number of suppliers.

As the business process management involves identification, design, implementation, and execution of business processes, a developed conceptual model of e-supply chain process focuses on interactions, control, analysis, and optimization of processes at the level of supplier-organization-customer sequence in the supply chain, primarily in the automotive industry. In order to secure shared access, synchronization of terminology, product development, improvement of the production process and reporting in the supply chain, ISO/TS 16949 standard was developed by International Automotive Task Force (IATF).

ISO/TS 16949 standard defines quality management system requirements, specially developed for the needs of the global automotive industry. The objective of this standard is to establish a quality management system, which ensures continuous improvement of the quality

of products and processes, ensuring compatibility and interchangeability, focuses on prevention of defects, reducing variations and losses in the supply chain in the automotive industry. This standard applies to the processes of design, development, production, installation, and servicing of all products within the automotive industry. The standard requires the inclusion of customer-specific requirements and presents a set of requirements within a quality management system for organizations that apply it. Some of the most important aspects of this standard are related to:

- Monitoring of key parameters:
 - On-time delivery - OTD,
 - Share of non-conforming parts per million produced (ppm),
 - Premium freight,
 - Speed of response to complaints, etc.;
- Systematic monitoring and analysis of cost of quality/poor quality;
- Establishment of process audit and product audit;
- Continuous improvement of production processes (reducing the variation of process performance) through statistical management and analysis of process capability;
- Definition of contingency plan;
- Failure mode and effects analysis (FMEA), Statistical process control (SPC), and Measurement systems analysis (MSA);
- Production part approval process (PPAP).

Another peculiarity of the automotive industry is reflected in the existence of the finalist, Original Equipment Manufacturer (OEM), which represents the supply chain owner and sets the conditions and criteria that a member of the chain must meet.

Since the SCOR model focuses on operational strategy, at the level of supplier-organization-customer, in the present model, SCOR model will be applied, while at the OEM level, GSCF model will be applied, where each process is associated with corporate strategy. This is supported by the fact that GSCF and SCOR models represent examples of two different approaches in the implementation of business processes. In case of GSCF model, inter-organizational link between all processes is coordinated through the processes of customer and supplier relationship management. In the SCOR model, the seller is related to the customer through the process of delivery by the seller and the process of supply by the customer. Also, the seller and the customer are related through the process of return of purchased products and the process of return of the delivered products. In the SCOR model, connection between organizations in the supply chain is accomplished through activities associated with the processes of supply, delivery, and return of products, while in the GSCF model, customer-supplier connection is realized by coordination of all the processes through the processes of customer relationship management and supplier relationship management.

These two models use different approaches to measure the value created. Within the GSCF model, operational measures are related to the measurement of economic value added (EVA) of the organization and reporting profitability for customers and suppliers. The key to successful implementation of the GSCF model is to identify the impact of profit in respect of all activities implemented within the organization, but also in organizations throughout the supply chain. This creates profitability reports that provide information about the value that each key supplier gives to the customer, as well as on values that the customer gives to each of its key suppliers. Thus, this model is not only to create value by reducing costs and increasing utilization of investment, but also on how the quality of relations with key customers and suppliers has an impact on the realization of profit for individual organizations.

For example, the involvement of customers in the process of development and commercialization of products can shorten the time required for product launch and produce products that better meet customer requirements, and at the same time generate higher profit for the organization.

Considering that the aim of the SCOR model is operational efficiency, the model itself focuses on achieving value by reducing costs and improving utilization of investment. This makes measurement easier, because measurement is less subjective, and it is very difficult to assess and measure how much a customer segment may be responsible for improved services, new marketing effort, or new products. This also confirms that it would be appropriate to apply the GSCF model at the OEM level, and SCOR model at the level of supplier-organization-customer sequence.

The conceptual model of e-supply chain process, which is shown in the paper, is based on a combined approach of the mentioned two models for the OEM level and supplier-organization-customer sequence, and on specificities arising from the implementation of appropriate standards in the automotive industry. Given that the GSCF model emphasizes that the processes of customer relationship management and supplier relationship management form a critical link in the supply chain, that in the SCOR model overlapping of supplier-organization-customer sequences takes place through the process of procurement and supply, and that the ISO/TS 16949 standard requires monitoring of parameters such as OTD, ppm, premium freight, speed of response to complaints, and cost of quality/poor quality, the developed conceptual model supports both models and includes the measurement of key performance indicators mentioned.

Within the created conceptual model of e-supply chain processes, the focus is on defining and calculating key performance indicators, identifying gaps, depending on the actual and target values of key performance indicators belonging to a particular attribute (quality - Q, costs - C, delivery - D, and flexibility - F), as well as calculating overall performance of different types of supply chains (efficient, fast, lean, and hybrid), which is the result of integrated key performance indicators and their relative importance in relation to the particular type of supply chain. In fact, assessing business processes in the supply chain through their key performance indicators and their different weights leads to overall supply chain performance measurement. It further allows management, both at the level of supplier-organization-customer sequence, and the level of OEM, to monitor, analyze, and identify critical places and links in the supply chain, as well as different simulations of ranking of importance of key performance indicators, to improve business processes in e-supply chain.

Figure 1 shows the developed conceptual model of business processes in e-supply chain. Coordination, synchronization, and communication among the supply chain organizations are achieved at the strategic level through GSCF model and at operational level through the SCOR model. The developed model includes the business processes of supply, sales, and logistics. The selected key performance indicators are grouped in four performance attributes (quality - Q, costs - C, delivery - D, and flexibility - F). On the supplier side, these are SQ, SC, SD, and SF, and on the customer side, CQ, CC, CD, and CF. Their values have a direct impact on the gap.

Improving business processes is achieved through the possibility of calculating the key performance indicators depending on the type of supply chain and the possibility of simulation of a set of key performance indicators, characteristic for a particular type of supply chain. This brings optimization and improves the overall performance of the supply chain. The aim is to reduce gaps along the entire chain.

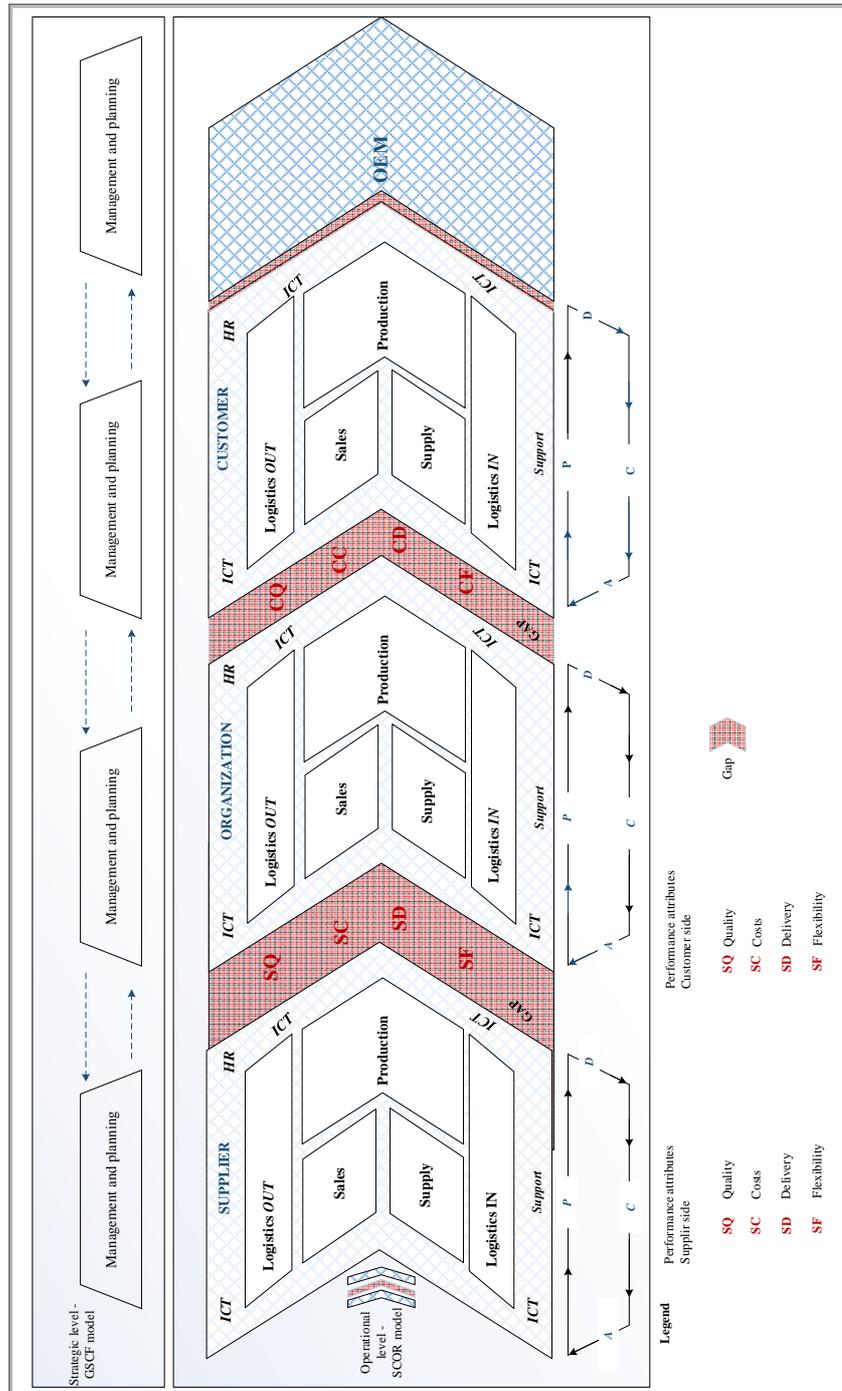


Figure 1 Business process model in e-supply chains

Source: Authors

Given that the supply chain is as strong as its weakest link, it is important to determine which organization in the chain it is. Through the developed model, it is possible to determine precisely where gaps are in the supply chain. A larger gap indicates that the realized values of key performance indicators are further from target values. The total gaps at the level of the supply chain would actually be inversely proportional to the overall supply chain performance, which indicates the quality of functioning of the supply chain. In addition, further analysis can go in the direction of looking at the average gap at the tier level, which

could be of importance for the management of OEM to determine which tier is most disruptive in the supply chain. (Figure 2).

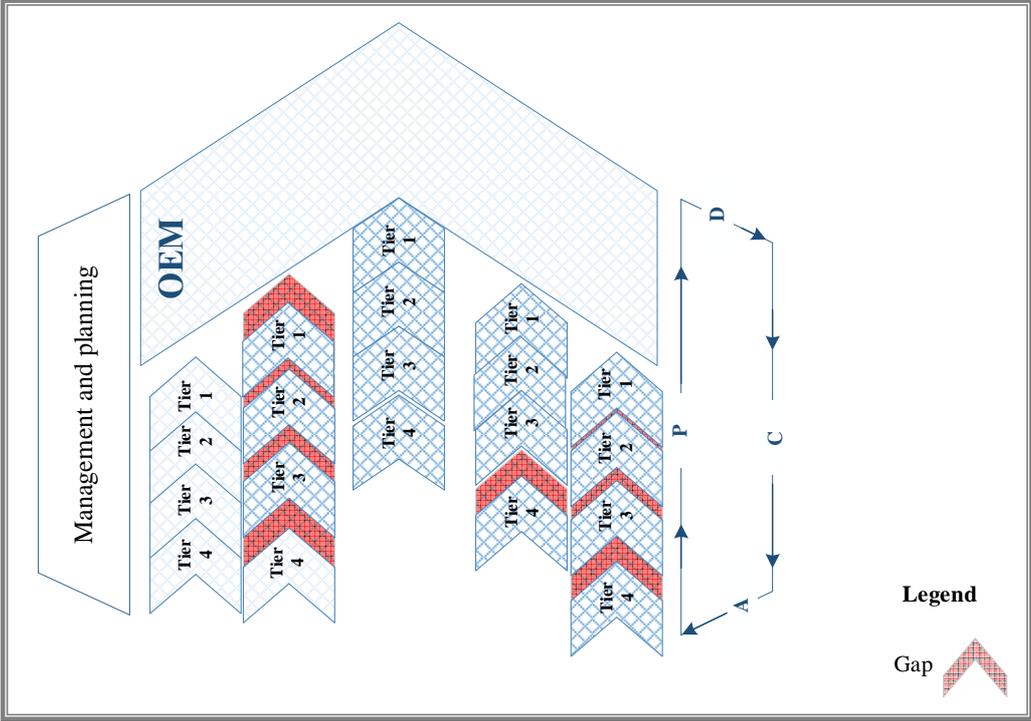


Figure 2 Gaps at tier level

Source: Authors

3. BUSINESS PROCESS MAPPING IN E-SUPPLY CHAINS

Supply chain map is visual representation of relationships and entities in the supply chain, as well as all processes and key points in the supply chain, upstream and downstream. In the supply chain with operations in several countries, management may not have a clear picture of the exact flow of materials, information, and money. The development of the supply chain map, which clearly shows suppliers, their contribution, various kinds of flows and the way the business is organized, can lead to more efficient decision-making in the supply chain. Given the complexity of the supply chain, when mapping the supply chain, one can exclude “non-critical” entities and thus make map simpler. A supply chain map should be easy to build and use, sufficiently comprehensive but not excessively detailed, intuitive in its use of visuals, and effective in building alternatives. Map would have standardized icons to allow easy identification of supply chain entities and also understanding of the flows between each entity (Farris, 2010).

The following figures show different ways of business process mapping in supply chains.

Map can be used for enhancing the strategic planning process, easing the distribution of key information, facilitating supply chain redesign or modification, clarifying channel dynamics, providing a common perspective, enhancing communications, enabling monitoring of supply chain strategy, and providing a basis for supply chain analysis.

Three main distinctions are made between supply chain mapping and process mapping: orientation, level of detail represented in the map, and purpose for creating the map (Table 1).

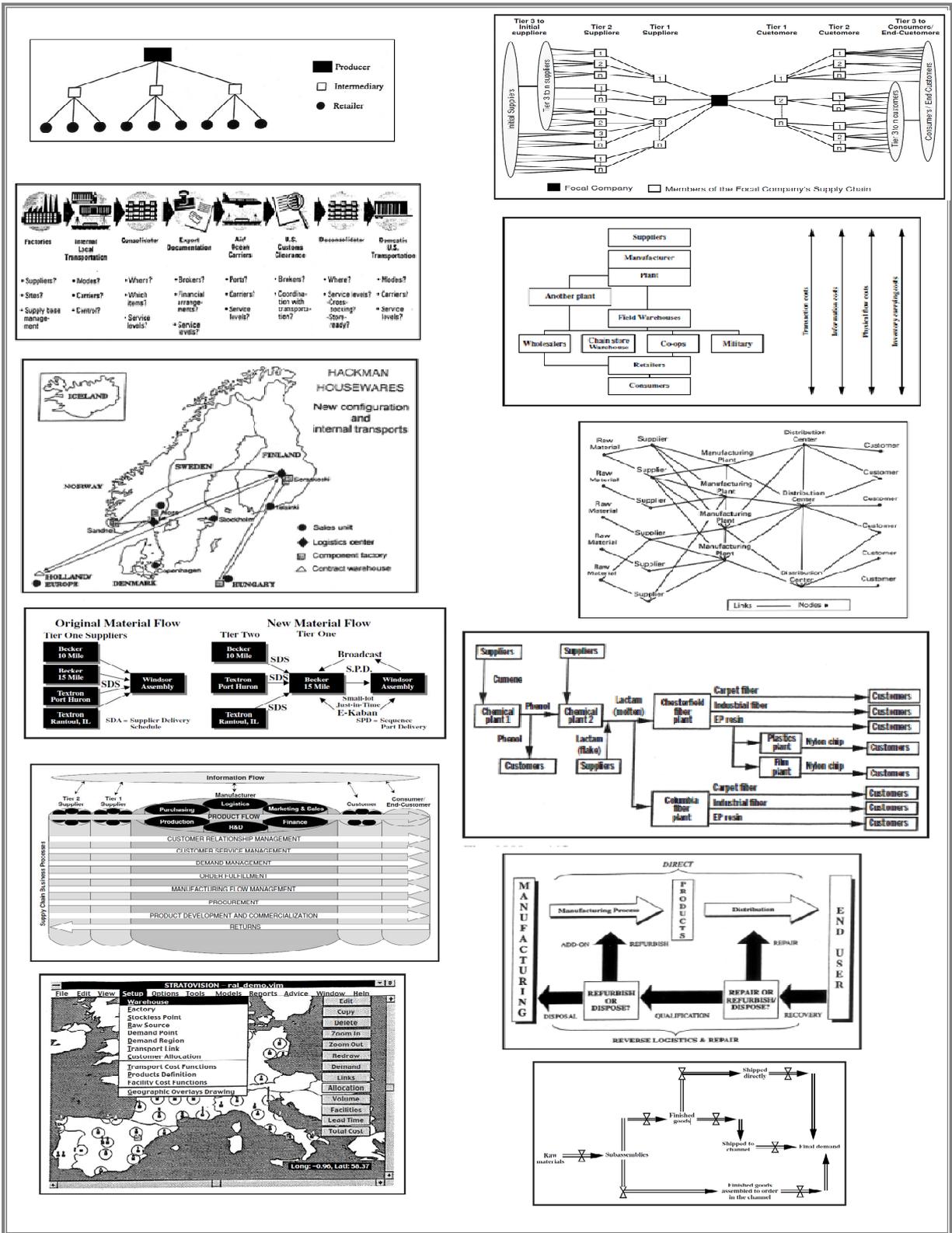


Figure 3 Different approaches to business process mapping in supply chains

Source: Gardner & Cooper, 2003

Table 1 Supply chain and process mapping

	Supply chain mapping	Process mapping
Orientation	Focuses on how material, information, and money flow in both the upstream and downstream directions, and through an organisation.	Can be defined as the focus of the mapping procedure. Generally directs its attention to a single operation or system within an organisation.
Detail	Emphasizes high-level measures such as volume, cost, or lead time.	Tends to break down a process into activities and steps.
Purpose	Is strategic. Is used to help create a supply chain that conforms to a strategy, or as a check to make sure the current chain is set up properly to fulfil that strategy.	Is typically tactical. The origin of that map comes from the recognition of a problem area and an attempt to improve operating efficiency. The goal is to make changes to the current operations of the organisation.

Source: Gardner & Cooper, 2003

4. A NEW APPROACH TO BUSINESS PROCESS MAPPING IN E-SUPPLY CHAINS

The aim of research in this paper is to develop a model for improving the e-supply chain performance through the improvement of performance of key business processes in supply chains, especially in the automotive industry, where the developed approach to business process mapping in e-supply chains focuses on identifying different types of supply chains and monitoring of key performance indicators within a certain group of performance attributes, in order to help identify where one needs to react and thereby improve the overall performance of the supply chain.

Based on the diagram context, which set the boundaries of the real system being modeled, as well as the root diagram, the model business process mapping in e-supply chain was developed, as shown in Figure 4.

The developed approach to business process mapping in e-supply chain has been tested on the case of the automotive industry, in which supply chain member organizations belong to different industries and produce a variety of products, belong to different types of supply chains (agile, lean, efficient, and hybrid), where there are various performance measure priorities. Map created in this way allows the management of each supply chain organization to understand types of supply chains it belongs to, priorities of a certain performance attribute in a specific supply chain (bold red – first priority, regular – second priority), as well as which performance measures should be monitored, which improved, and of which management should be warned. In this way, management is able to evaluate the sequence of supply chains involved, as implemented by reviewing key performance indicators of the key business processes of suppliers and the organization as a customer’s supplier (Figure 4).

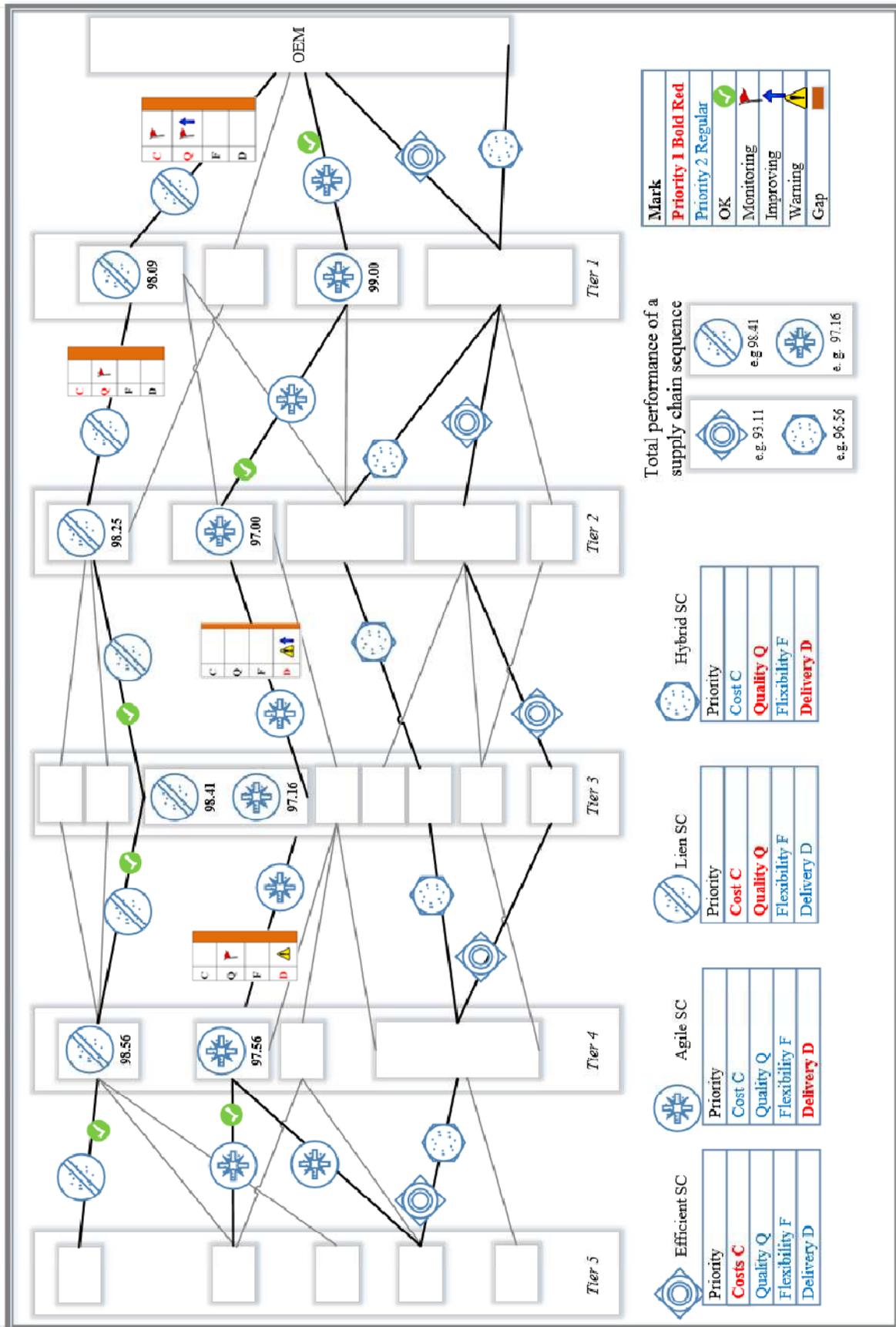


Figure 4 Business process mapping in supply chains

Source: Authors

In the same way, OEM is able to look at a map of different types of supply chains downstream, and to assess, monitor, and influence improvement of performance of complete supply chain, knowing the evaluation of each supplier-organization-customer sequence.

5. CONCLUSION

Properly constructed supply chain map leads to improvement of strategic planning processes in the supply chain, easier exchange of key information, easier redesign or modification of the supply chain, better understanding of the supply chain dynamics, a common perspective, improved communication, easier monitoring of supply chain strategy, and provides a good basis for analysis of the supply chain. The process of supply chain mapping links corporate strategy with supply chain strategy. High-quality supply chain map can alert planners to restrictions in the system. Fast identification of critical suppliers, more than one level remote, triggers further research and monitoring of bottlenecks in the supply chain. Supply chain map provides the basis for redesigning or modifying the supply chain, helps to visualize the supply chain and identify areas for further analysis, or indicates inefficiency that is not so easily seen by examining only a small segment of the supply chain. The map clearly shows overlapping and duplication of some activities, so that rationalization of the supply chain becomes easier. Supply chain map shows the current dynamics of the supply chain. Issues such as relative size, power, positioning of the competition, etc. may be considered and incorporated into the map. A well-documented approach to supply chain mapping improves supply chain management process.

A developed map is the type of supply chain map for the purposes of strategic planning. Given that such a map is created on the basis of the developed information system to support business processes in e-supply chain, further research will focus on connecting the developed maps with one or more databases available within a supply chain. Linked databases will allow individual users to access a single map in accordance with their needs. Changing conditions or customer needs will give rise to different maps.

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STUDY OF NETWORK PARADIGM IN MANAGEMENT SCIENCES

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Abstract: *New paradigms are currently being selected in the field of management sciences. This results from the dynamic changes to the conditions for the activities of contemporary organizations, initiated in the 1980s And resulting in the development of the knowledge-based economy. The network paradigm may be one of such patterns of thinking, shared by a group of scientists. The foundations of this concept are already clear and common in the theory of management sciences that their sources, planes, dimensions and assumptions may be identified. Therefore, the disciplinary matrix emerges and, as a consequence, the paradigm itself.*

Keywords: *network paradigm, network society, management sciences, paradigm of management*

JEL Classification: *J24, M12, M54*

1. INTRODUCTION

The need to revise the characteristic set of popular beliefs concerning the management sciences at the threshold of the 21st century was emphasized by P. Drucker. He claimed that basic, fundamental assumptions are impossible to apply. He denied the following postulates (Drucker, 1998; Drucker, 2000):

- there is a unique, proper method of controlling the company, including both a set of principles of management, and a universal model of organization,
- management principles are applied only in companies,
- here is - or at least, there should be - only one way of managing people,
- management is based on available technologies and markets of the final recipients of its effects. Each branch of industry has different technologies of manufacturing and their target markets are disjunctive.
- the scope of management is legally specified. It applies only to assets and employees of an organization.
- management is focused on the internal part of a given organization,
- the scope of management is defined politically. Economics, in a narrow perspective, is the "ecology" of company and management.

While thoroughly arguing the irrelevance of the previous guidelines specific for management sciences, P. Drucker does not propose any equivalents that would be suitable for the knowledge-based economy. At the same time, he presents postulates based on observations conducted at the end of the 20th century.

The search for new instruments to describe specific aspects of the dynamically changing reality is the substance of challenges faced by researchers in management sciences, especially at the threshold of the 21st century. The deliberations on paradigms are thus the domain of this scientific discipline as well. The uniqueness of the problem, however, is in finding an unambiguous answer related to the basic matter - whether management sciences, as one of the

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youngest disciplines of relatively young social sciences, are mature enough to have any paradigms at all.

The literature on the subject includes three groups of views regarding the existence of paradigms in management sciences.

According to the first view, this scientific discipline is in its pre-paradigm period. This view is represented by T.S. Kuhn - the precursor of research on paradigms in the development of sciences. He believes that management sciences are in a period characterized by a number of competitive interpretations, the willingness to find something new, the expression of firm dissatisfaction with the existing state of knowledge, referring to philosophy and undertaking fundamental actions. They thus have all features placing them in the pre-paradigm period (Kuhn, 2001). This thesis is also confirmed by C. Suszyński in his words that "management sciences are at a stage preceding the formation of new paradigms" (Suszyński, 2010). A similar view is presented by Ł. Sułkowski (2005). P. Płoszajski calls the stage in which management sciences are currently found the empirical-collector stage (as opposed to the next stage - theoretical-explanatory) (Płoszajski, 1985), while A. Szpaderski - proto-scientific (2009).

The enthusiasts of the second approach - D. Collins (1996), R. Achrol (1997), E. Gummesson(1998) argue that management sciences are in the phase of emerging paradigms, or micro-paradigms and assume their pluralistic nature. The multi-paradigmatic nature of management sciences is emphasized by W. M. Grudzewski, I. K. Hejduk, A. Sankowska and M. Wańtuchowicz who stipulate the multiplicity of patterns of science and their dynamic evolution typical of rapid changes in the environment and in organizations (Grudzewski et al. 2010).

The third, relatively small group of researchers, believes that the explored discipline is in its post-paradigmatic stage (Hardy, Clegg, 1997).

Hence, the challenge to undertake a wider discourse aimed at identifying and developing previous proposals of a paradigmatic nature. The purpose of the study is to present the patterns of science emerging in contemporary literature in the form of a network paradigm and to attempt to decide whether the emergence of a dominant pattern of thinking in management sciences is possible at all.

2. ESSENTIALS OF THE PARADIGM THEORY

The foundations for the concept of paradigms -the most influential theory in the contemporary methodology of sciences - were proposed by T.S. Kuhn. The author treats the notion paradigm as "a commonly regarded scientific achievement which, at a certain time, provides the community of scientists with model problems and solutions" (Kuhn, 2001). In the conclusion of his deliberations he proposes two approaches to the interpretation of the notion - a wide, global one (sociological) and a narrow, particular one, namely the philosophical point of view.

From the comprehensive, general perspective, a paradigm covers all internationalized beliefs of a given scientific community, and in the partial meaning it is a particular special element, a subset of common beliefs forming a significant scientific discovery (Krzyżanowski, 1999). The concept of the disciplinary matrix is the clarification of the notion paradigm in the global meaning. It consists of organized elements in the form of beliefs, attitudes or convictions, shared by scientists who are active in a given scientific discipline. Its components include symbolic generalizations, models and specimens (Kuhn, 2001).

Symbolic generalizations are expressions that do not raise objections and are unanimously applied by members of the group. These are components of the disciplinary matrix that are easy to codify or they already have a formal form. Models are the source of analogies, metaphors, comparisons for the group (Szpaderski, 2009). And, in the case of full acceptance, also the ontology. Specimens, in turn, are specific solutions of particular, significant problems recognized by researchers. They are thus a category being part of the narrow understanding of paradigm and, at the same time, they have a major significance according to T.S. Kuhn (1985).

In conclusion, a paradigm should be understood as a science pattern, accepted by the academic community of a given time and commonly accepted, appropriate for a particular period, along with philosophical assumptions constituting its basis (Kowalczewski, 2008). Thus, it includes areas of analyses important for scientific research, which provide formulas acceptable at some stage of scientific disciplines - models, namely laws, theories, applications or even equipment (Lisiński, 2009). It is thus a set of notions and theories that are commonly accepted by the scientific environment of specialists in a given field (Sułkowski, 2005). Contemporary publications, however, evidently present the wide understanding of the notion paradigm - general, significant principles, rules and approaches to management in organizations (Sudoł, 2012).

The paradigm is thus created as a result of significant transformations in the organization as well as its ability to organize processes, functions and tasks (Platonoff, 2009) which undoubtedly took place, especially in the context of the emergence of the knowledge-based economy. As a result, it is stressed that the commonly binding and acceptable standards of business behaviours need to be redefined and in the future - the model problems and solutions typical of the researchers need to undergo an evolution.

Such divagations may constitute the basis for identification of the network paradigm, more and more strongly accentuated in the subject literature, emerging as the dominant paradigm.

3. EVOLUTION OF PARADIGMS IN MANAGEMENT SCIENCES

The issues of paradigms in social sciences have been undertaken by G. Burrell and G. Morgan. They postulated that scientific research or works within social sciences in general, and especially in the theory of organisation, should be settled from the point of view of four paradigms - functional, interpretative, radical humanistic and radical structuralist. The proposal of G. Morgan is treated as an expansion of this concept, which prefers metaphor in the viewing, experiencing, describing, understanding and creating knowledge about the organisational reality. The assumption that theories and explanations concerning the life of an organisation are based on metaphors, leading to viewing and interpreting the organization in a specific but partial manner, was the basis for the postmodernist trend in management. The search for "paradigmatic metaphors" in management sciences is continued by the idea of L. Heracleos and C. D. Jacobs, juxtaposing strategic management school in the system of the paradigms of the positivist theory, social aconstructionism and realised realism, in the perspective of interpretation of metaphors and approach to strategy (Pietruszka-Ortyl, 2011a).

The subject literature is abundant in discussions on paradigms, referring to new management tendencies. The most characteristic element of the publications is the broad understanding of the notion of paradigm - general, important principles, rules and approaches to management in organisations (Sudoł, 2012).

The paradigms of new economy are thus usually reduced to formulas - models, covering such areas of analysis as: the crucial role of knowledge, globalisation, informatisation, turbulence of the environment, network communication of all business entities and natural persons,

sovereignty of customers as co-creators of values, and in fact directly defining the features of knowledge-based economy. These planes of analysis form a whole, and their interrelations, through the phenomenon of synergy, create a particular system of paradigms, determining the contemporary dimension of socio-economic life (Lisiński, 2009).

While reviewing the proposals of contemporary paradigmatic postulates of management sciences, first of all, we should refer to the concept of R. Krupski (2003), identifying a dually perceived paradigm, conditioned upon the complexity of the organisation and the complexity and turbulences of the environment.

Then, it would be necessary to indicate paradigm "7S" of strategic management or paradigm of joint creation of value of C.K. Prahalad and V. Ramaswamy.

To sum up, we should mention the proposal of K. Obłój, in which the author analyses schools of strategic management and their postulates. Particular analysis should cover the set of "methodological postulates" of P. Płoszajski (Table 1), who sets the direction of changes in the meta-paradigm of management sciences (Pietruszka-Ortyl, 2011b).

When seeking the most recent inspirations with regard to "emerging" paradigms, the meta-paradigm of sustainability can be indicated, supplemented with a holistic model of a sustainable enterprise or the paradigmatic application of the neo-evolution theory to management sciences in the proposals of Ł. Sułkowski (Pietruszka-Ortyl, 2015). It may be equally as inspiring to juxtapose two business paradigms of R. Kozielski (2012) and learn about the concept of the new paradigm in the metaphorical horizon of a four leaf clover.

The great number of proposals may be overwhelming and lead to the conclusion that, in the age of excess economics, management sciences in fact are not able to form a paradigm, which is inherently stable and recognised by all scientists for a longer period of time. However, the dynamics of the functioning of the organisation and the environment enforces revolutions on a smaller scale, concerning smaller science fields. Micro-revolutions occur among great revolutions and relate to minor elements of the paradigm.

Therefore, S. Sudoł (2012) stresses that numerous publications already use phrases that could constitute "canons", basic management principles and aspire to the role of paradigms, namely:

- Activities of the organization can't be considered without taking into account its relationship with the environment , because they largely determine its success or failure.
- The basic condition for survival of the organization in turbulent conditions of the environment is its flexible adaptation to it , while maintaining their characteristics.
- The older the organization , the stronger it tends to formalize its structures and procedures , which means that decreases its flexibility.
- In any organization should be respected the principle of management's optimal span and rang.
- The organization should be maintained at a necessary level of all kinds reserve.
- The organization can't function properly without an efficient communication system with the environment and between its parts.
- Leadership competencies of organization's managers , especially top management, seriously affect the success or failure of the organization.
- Factor having an influence on the effectiveness of the organization is its culture , and in the era of globalization , it is essential that the principles of intercultural management are applied.

- Major cultural differences between continents and countries impede the flow of management methods.

Table 1 Towards the new paradigm of management sciences

Old paradigm	New paradigm
FROM:	➤ TO:
Reductionism	➤ Morphogenesis
Mechanistic approach	➤ Holographic analogies
Universalism	➤ Relativism
Rationalism	➤ Rationalism and intuitionism
Static approach (balance)	➤ Dynamic approach (imbalance)
Search for balance	➤ Deterministic chaos (ordering by fluctuations)
Testing the impact of elements on system features	➤ Testing the impact of structure on the system features
Concept of the growth in entropy	➤ Concept of the growth in complexity
Relatively open system	➤ Loosely connected system
Strategy of competition and fight for survival	➤ Strategy of co-existence and cooperation
Information system consisting of located units	➤ Information system as a structure of arranging sets of information
Social evolution by natural selection of the best structures and methods produced by accidental mutations	➤ Conscious diversity
Social processes described with continuous functions	➤ Social processes described with discontinuous functions
Analysis of quantitative changes	➤ Analysis of qualitative changes
Hierarchy and centralism	➤ Heterarchy and pluralism
Authority research	➤ Legal validity research
Search for identity (of units, systems)	➤ Search for harmony (community, individual features, systems)
Individual approach	➤ Transaction approach
"Presenting" analyses (descriptions)	➤ Analyses looking for the essence of phenomena (abstract)
Analytical explanation	➤ Metaphorical explanation
The object of research as the subject matter	➤ Strengthening the relation of researcher-object (action research)
Researcher - observer	➤ Researcher - participant
Knowledge for understanding	➤ Knowledge for changing
Promotion of consumption at any price	➤ Proper, respective level of consumption
Only economic motives	➤ Spiritual values exceeding material goals
Selection of employees for the positions	➤ Selection of positions for the employees
Imposing goals and vertical decision-making	➤ Autonomy and participation of employees
Fragmentarisation in work and performed roles	➤ Knowledge exchange between broad-minded specialists
Identification with the work	➤ Identity going beyond the workplace
Separation of work and play	➤ Integration of work and play
Manipulation and dominance	➤ Interdependence with nature
Bipolarity	➤ Multidimensionality
Concentration on short-term solutions	➤ Long-term perspectives taking account of harmonious co-existence with the environment
Unrestrained technological race	➤ Technology adequate to needs
Allopathic approach to identifying the symptoms	➤ Diagnoses of complex and specific conditions of disharmony

Source: Pietruszka-Ortyl, A. 2015, 11-20

Such divagations may constitute the basis for identification of the network paradigm, more and more strongly accentuated in the subject literature, emerging as the dominant paradigm. After all, a network organisation questions the basic principles, on which the traditional structures have been built, namely: hierarchy, vertical coordination, strict separation of organisational structure and the environment (clear boundaries of the organisation), division into conceptual and executive employees, durability and invariability of the structure, uniformity of commanding bodies (Sułkowski, 2005). As a result, it is stressed that the commonly binding and acceptable standards of business behaviours need to be redefined and in the future - the model problems and solutions typical of the researchers need to undergo an evolution. This may contribute to development of the network paradigm.

4. BASICS OF THE NETWORK PARADIGM

In the opinion of W. Czakon (2011), there is no doubt as to the existence of the network paradigm as a common set of assumptions in the theory of organisation. Researchers only discuss its place within the theories of organization and management. E. Piwoni-Krzeszowska (2015) is of the opinion that it is separate from the relational paradigm and its scope is narrower. However, both are emerging micro-paradigms. A. Łupnicka (2014) in turn believes that the proposed network paradigm could be a partial paradigm, reaching beyond the established rules within the neoclassical economics trend. B. Woźniak-Sobczak (2015) regards it to be a comprehensive paradigm and a plane of partial paradigms in the management paradigms system in the contemporary network space.

Within the synthetic presentation of the network paradigm, W. Czakon identifies three main reference theories comprising the concerned paradigm: sociological theory of social networks, resource theory of a company and theory of transaction costs. At the same time, the author draws the following conclusions in this convention (Czakon, 2011):

- discovery of the existence of a certain structural order in social networks is of crucial importance for the network paradigm, which is tantamount to the need to examine the network as a context of operation and implies methods to learn more about the network,
- a particular achievement of the network paradigm is discovering that networks contribute to achieving competitive advantage, and thus the network becomes a resource that can be acquired, created and should be purposively shaped,
- network coordination is an important decision-making area in strategic management, contributing to achievement of competitive advantage, while network paradigm derives from social recognition of coordination mechanism as a solution occurring next to the price and bureaucratic mechanisms.

In the conclusion, the advocate of the existence of the network paradigm in management sciences puts forth research assumptions shared by the scientific community.

An expanded proposal of the network paradigm assumptions is presented by E. Piwoni-Krzeszowska (2015). They can be treated as symbolic generalisations of the disciplinary matrix of T. Kuhn:

- the organisation's environment is not unidentified, it is not anonymous,
- the organisation's environment is not atomised,
- the organisation partially controls the environment,
- resources do not have to be hierarchically controlled,

- opportunities exist in the network that notices them, conditions them and enables their use,
- competitive advantage depends on the structures, positions and relations within the network,
- the environment's conditions may be stabilised by networks,
- shaping relations is motivated by the desire to obtain Coleman's relational pension,
- shaping relations is intended to establish bonds,
- entities' operations are determined by the structures of intra- and inter-organisational bonds.

B. Woźniak-Sobczak (2015) presents a system of management paradigms consisting of the meta-paradigm of environment turbulence, comprehensive paradigm in the form of the concept of a network organisation, and partial paradigms - economic network pension, organisational form - of a network organisation, relational competence in the perspective of competition and cooptation, as well as information technology as information network. Thus, the identified elements in the management paradigms system clearly indicate the functioning of the science pattern discussed in the study.

Knowledge-based economy, treated as "new economy", does not raise any objections of the researchers and is unanimously used by the scientific community - it can thus be perceived in terms of symbolic generalisations as defined by the disciplinary matrix of T.S. Kuhn. Its components are relatively easy to identify. The most commonly indicated one is environment turbulence, constant change and hypercompetition. This proposal can be perceived as a paradigm in the comprehensive understanding - a meta-paradigm of knowledge-based economy (Figure 1). However, the organisation's reaction should be, in this convention, treated as paradigms in the partial meaning - as a model, a formula. Then the dynamic, imbalance approach connects with the chaos theory, and the second, supplementing partial paradigm approaches the concept of sustainability. The supporters of both partial paradigms rely on the turbulence paradigm, assuming high flexibility and adaptation capacity of the organisation. However, they perceive the target condition of the organisation and its environment differently. The representatives of the chaos theory see the final form of all dependencies as imbalance, while the advocates of the sustainability trend - as sustainability, pursuit of stability (Pietruszka-Ortyl, 2012).

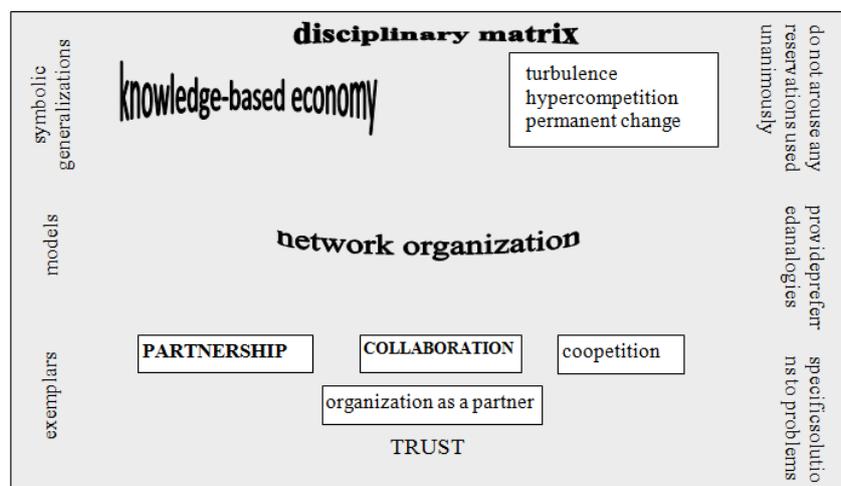


Figure 1 Disciplinary matrix of the network paradigm

Source: prepared by the author

When suggesting models as elements of the disciplinary matrix, which provide the group with its preferred analogies, the idea of a network organisation may be one of them. Based on the diamond organisational model of H. Levitt (Przybyła, 2001), one of the most popular and commonly acceptable - the network paradigm - which can thus aspire to the role of a science pattern, may function as analogy-providing elements of the disciplinary matrix. Network as a structure, network in the form of technology, network nature (complexity, interdependence) of tasks and people in Castells' view of the network society. In such a case, exemplar can be a partnership, both perceived in the perspective of inter-organisational macro-cooperation, as well as in the formula of the network and micro-cooperation at the individual and team level, both within, as well as outside the organisation, on a plane of individual relations and bonds, with the context of a specific company in the background.

Exploring the previous publishing achievements of researchers with regard to the structure of the network paradigm, we may identify specific dimensions of the analyzed pattern of science, namely the mutually penetrating organizational, social and technological plane (Figure 2).

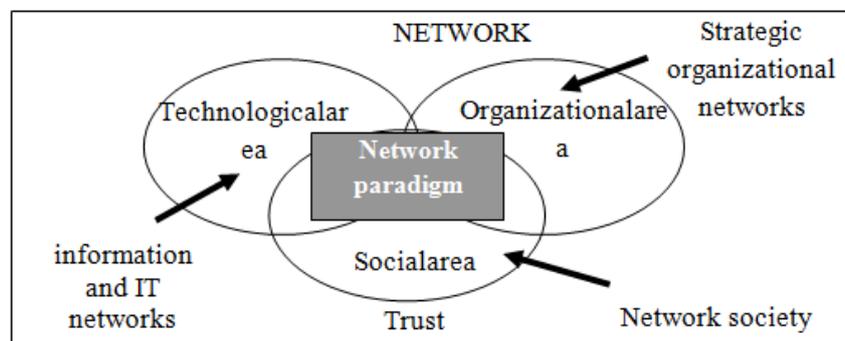


Figure 2 Dimensions of network paradigm

Source: own prepared

The organizational plane includes the theory of network in the management of companies and focuses on the evolution of the forms of cooperation in business – from bilateral alliances, through multilateral ones to the network. The social plane refers to the concept of the network society by M. Castells (2009) as well as to the theory of the social capital. The technological dimension of the network paradigm applies to tool solutions of the information-IT nature. All planes are consistent with the context of network thinking according to P. Gomez, G. Probst and H. Ulrich (Piekarczyk, Zimniewicz, 2010) strongly connected to the system perspective and based on positive as well as negative feedback. They are also supported by the theory of trust as a specimen of the disciplinary matrix.

5. CONCLUSIONS

The discussion of paradigms in the context of social sciences in general, and management sciences in particular, arouses many controversies. The complexity of the problem results both from the conditions of the disciplines and the fact that they are new.

However, the existence of the network paradigm seems to be final. But its place in the disciplinary matrix remains undetermined. Some treat it as a comprehensive paradigm, others as partial. The author supports the opinion that, due to the characteristics in the form of research purpose (generalisation, verification, analysis, prediction and programming of

changes), preferred methodology (explaining methodology - supplying predictions based on abstract systems of notions), the researcher's attitude towards the value (pursuit of objective knowledge, without evaluating the information) (Sułkowski, 2015), network paradigm emerges as the dominant one.

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OPINION MINING FRAMEWORK AND ITS APPLICATIONS

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Paweł Wołoszyn²

Abstract: *Opinion mining is a field of research that has significant impact on contemporary business. The growing number of consumer reviews creates the need for its automated analysis often referred to as opinion mining process. The goal of opinion mining is to generate a list of product attributes (quality, features, etc.) and aggregate opinions about them (poor, mixed, good etc). On different stages of this process different methods and tool of natural language processing, computational linguistics, and text analytics can be used. In this paper authors propose comprehensive opinion mining framework and present an example of its application. For each stage in the framework input and output data are described, models and methods suitable for particular step are designated and additional useful tools are discussed. The paper is summarized with an example of opinion mining analysis conducted according to presented framework.*

Keywords: *opinion mining, sentiment analysis, text mining, natural language processing, opinions, reviews*

JEL Classification: *C63, C80, C88, C89, D71, D83*

1. INTRODUCTION

Opinion mining is a field of research that can have significant impact on today's business. The number of consumer reviews and opinions posted online is rapidly growing as social media and e-commerce applications encourage customers to provide feedback on products and services they are experiencing. The literal flood of reviews creates the need for developing automated analysis techniques which are collectively referred to as opinion mining. Dave et al. (2003) defines opinion mining as analysis process acting upon a set of search results for a given item, generating a list of item attributes such as quality, features, etc. and aggregating opinion about them for example as poor, mixed, good etc. On different stages of this process different methods and tool of natural language processing, computational linguistics, and text analytics can be used.

In the first part of this paper we discuss the general characteristics of opinion mining. Then we present our proposition of opinion mining framework. For each stage of the framework we describe:

- input and output data sources and types,
- models and methods suitable for particular step,
- tools and technologies needed for implementing the process.

In the last part of the paper we provide an example application of presented framework in the context of research practice. The paper will be summarized with conclusions and further research plans.

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2. OPINION MINING

Consumer opinions are subject of sentiment analysis and opinion mining. In the literature terms “sentiment analysis” and “opinion mining” are often used as synonyms. It is somewhat consistent with simplified colloquial use of the term "opinion" which is interpreted as someone's sentiment towards or against something. According to this view an opinion resembles a scalar value located on the scale between negative (most disliked) and positive (most liked) extremes. It is surprising that the very same digital media which invite users to writing opinions are at the same time promoting this simplified, scalar kind of opinions through ubiquity of judging buttons and indicators which allow only to convey one-dimensional attitudes: like/dislike, recommend/dissuade, agree/disagree and so on. Writing an opinion is much more challenging task than simply choosing predefined option and clicking a button – and conversely reading several opinions and developing own attitude is much more difficult than glancing at averaged numerical response. Offering the option of replacing proper written opinion with binary or similar choice can be convenient for users who are less skillful in writing, but it also allows to express an attitude when the user in fact has none developed. It seems disappointing that rating facilities on many websites may actually promote laziness instead of eloquence, but nevertheless the side effect of it is identifying opinions with sentiment rating.

However from the more formal point of view it occurs that there are differences in definitions and objectives of sentiment analysis and opinion mining (Lula & Wójcik 2015). Sentiment is defined by Pang et al. (2002) as overall opinion towards the subjects mater. So the sentiment analysis can be understood as actions aiming only to determine the attitude of the speaker or writer to the subject of opinion (often this attitude is called a polarity) as it was discussed above. On the other hand opinion mining is defined by Dave et al. (2003) as analysis processing a set of search results for a given item, generating a list of product attributes (quality, features, etc.) and aggregating opinions about them (poor, mixed, good). Opinion mining therefore covers wider range of actions than sentiment analysis, aiming to perform complete analysis of opinions and not only their polarity measurement.

Opinions can have written or oral form, however opinion mining is mainly interested in analysis of textual opinions as there are many of them available in the Internet and there are tools designed for natural language processing, computational linguistics, and text analytics that can be used in opinion mining. Opinions that can be found in the Internet constitute specific type of textual data. The development of mass media and especially the Internet has influenced the form and availability of customer opinions. The most significant change concerns the transition from the passive to active expression of opinions characteristic for the contemporary information society. Nowadays we can find opinions not only in different online shops, online auctions services, opinion services etc. but also in product websites, newspapers or magazines, discussion boards, mailing lists, forums, blogs (Dave et al. 2003) and social media (Wójcik 2012).

There are three main areas in the field of opinion mining (Liu 2007):

- sentiment classification - concerned with assignment of sentiment to a given opinion or clustering opinions into groups on the basis of their polarity,
- feature-based opinion mining and summarization - aimed at discovering what aspects of product users like or dislike,
- comparative sentence and relation mining - offering analysis of sentences which compare directly one product to another.

There are a few text mining approaches to opinion mining (Lula & Wójcik, 2011):

- word-based approach - it is assumed that the meaning of the opinion is carried by separate words; in this approach tools like tokenizers, different kind of machine-readable dictionaries, shallow parsers, disambiguation tools etc. are used,
- pattern-based approach - it is assumed that phrases and expressions can have different meaning than separate words from which they are built; in this approach tools based on regular expressions and valence dictionaries can be used,
- ontology-based approach - in this approach an ontology is used to represent domain knowledge about the subject of opinion; it allows to show the structure of product or service being rated in an opinion,
- statistical learning approach - it is used in sentiment analysis, mainly in opinion classification; in this approach a training set (containing opinions annotated with known sentiment) is required; on this basis the model learns how to assign polarity to new opinions.

Each approach can be used in different area of opinion mining (Wójcik & Tuchowski, 2012). However the best results can be achieved in multi-model approach where advantages of one method can be used to automate the analysis within another method. For example word-based approach can be used for feature identification by extracting all nouns used in opinions and then from the most popular of them the subset of nouns describing product or service features can be selected. Pattern-based approach allows to group words into phrases or to identify relations between words. Ontologies as graph-like constructs make feature-based opinion mining easier to conduct by assisting in creation of feature hierarchy and in modeling of relations between products and their features. At the same time it is possible to examine how often and how much detailed features are rated in opinions(Wójcik & Tuchowski, 2015a). The framework proposed in this paper and presented in its next part is based on such multi-model approach with the use of different single approaches distributed among several distinct stages of analysis.

3. OPINION MINING FRAMEWORK

Opinion mining, as any other kind of analysis related to natural language processing, is language sensitive - tools designed for one language are often useless in analysis of texts in other languages. There are no specialized tools designed directly for complex opinion mining. When sentiment analysis became popular among entrepreneurs, simple tools, especially for sentiment classification, became part of Business Intelligence systems. Also applications for text mining and qualitative data analysis contain tools for automated analysis of consumers opinions. However none of these tools alone is sufficient for comprehensive opinion mining. Moreover most of these tools are designed for English language and using them for opinion analysis in other languages may cause problems on all levels of language analysis. On the basic level of character stream representation there can be problems with encoding of national alphabets. On the level of word morphology different languages exhibit wide range of diverse properties, especially inflexional languages. The syntactic level of word patterns is also highly dependent on specific language grammar. Perhaps the semantic level of product features and attributes can be more consistent between languages although still dependent on ethnicity and nationality of customers.

Literature studies and conducted empirical research led us to the idea of systematizing and integrating diverse tools, techniques and methods of opinion processing into general opinion

mining framework. The goals of such generalization are threefold: to identify key processing stages, to indicate potential extension points of existing procedures and to compare different opinion mining schemes.

The first goal is achieved by breaking down known procedures into more basic steps and arranging them into workflow structure. Figure 1 presents the resulting flowchart illustrating the general design of the framework. It consists of several stages joined into mostly linear sequence where the output of one stage becomes the input for the next one. At one point the flow diverges into two parallel branches concerned with two orthogonal directions of analysis: feature detection and sentiment analysis. The first branch can be treated as an attempt to answer the question "what does the user notice in the product", while the second branch deals with question "how does the user perceive the product". Both branches merge again in latter stages of the workflow which leads to the final stage of overall opinion analysis based on all resources gathered in preceding stages.

It can be noted that each stage indeed produces some kind of data resource derived from input data. These resources, such as text corpora, frequency matrices and ontologies, can be treated on their own as material for standalone analysis diverging from the main framework. Similarly, some stages require external support in the form of domain-specific or language-specific rules controlling data processing within the stage. These rules should be viewed rather as configuration source than an input source. Such organization of the framework makes it more a collection of loosely coupled but cohesive processes than a monolithic algorithm, thus providing some elasticity and extensibility.

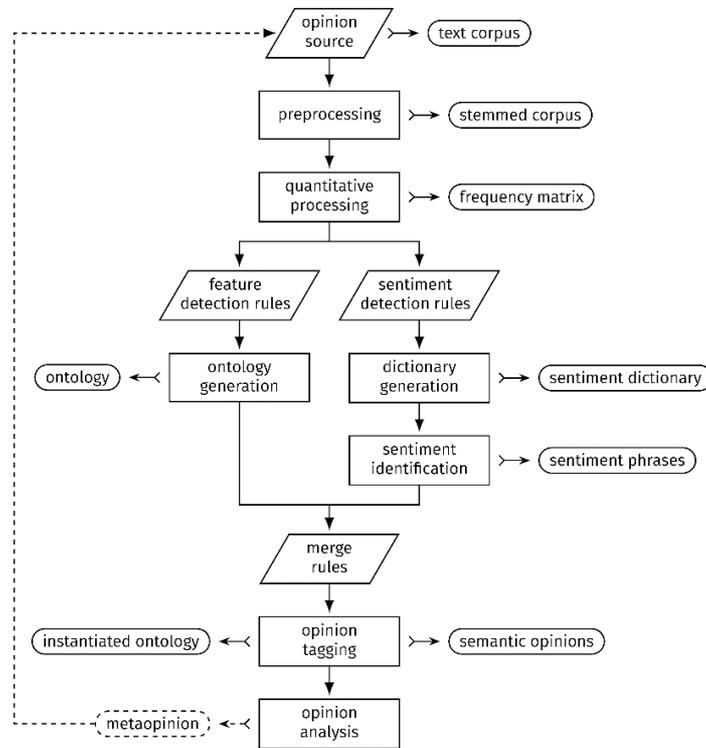
Besides input and output resources processing stages can be characterized also in terms of directly and optionally engaged tools and methods which are shown on Figure 2. The cascade of stages, which has been simplified for clarity on the figure, progresses through successive levels of natural language analysis, beginning at the basic level of character stream and then ascending through morphological level of words and syntactic level of word patterns and sentences up to the top semantic level of ontologies. Each processing level provides distinct opportunities for using specific analysis methods, for example stylometric analysis can be performed on words level while graph-based similarity measures can be applied on ontology level. The points of application of particular methods are at the same time the extension points sought after as stated in the second goal of our work. They can be seen marked on the Figure 2 as hexagonal shapes.

The third goal of comparing different opinion mining procedures can be achieved by systematically comparing those procedures stage by stage with respect to tools and methods used. Different procedures can implement only particular stages and use only some extension points while skipping and ignoring others. By confronting the model framework with concrete opinion mining scheme and identifying inputs, outputs, resources, tools and methods employed at each processing stage one can obtain a profile of that scheme, which can be later compared to similar profiles created for other schemes. A practical example of profile construction is presented in the next part of this paper.

CHARACTERS LEVEL

The initial stage of analysis framework is the acquisition of opinions which requires some kind of opinion source and extraction method. Concerning Internet, there are many potential opinions sources. What they have in common are web technologies used to develop the web page containing opinions and therefore the automated acquisition of opinions must be done in the way of ETL (extract-transform-load) process. Extraction is the process of getting data from the source, transformation covers the conversion of extracted data to the required form

and in the load phase transformed data are saved in the target storage. This can be a database, structured file or a set of raw text files. The collection of acquired opinions forms a text corpus. ETL process can be conducted with the usage of general purpose commercial or open source web scrapers or by specialized applications designed to deal with certain data source.



Processing stages (rectangles) are performed sequentially (simple arrows) and use external input data and rules (parallelograms) when necessary. Each stage produces a resource (rounded rectangles) which can be extracted (barbed arrows) for standalone analysis. Hypothetical recursive step (dashed lines) is based on manual summary of output results.

Figure 1 Flowchart illustrating the general design of opinion analysis framework.

Source: Own elaboration

The extraction of opinions is quite easy when data source is structured, like in the case of opinion services, auction services, on-line shops and other web services allowing users to post online reviews. Along with opinions some additional data can also be extracted, for example overall polarity given by the users or other statistical data. On the other hand, opinions which are part of unstructured web resources, like forums, blogs or comments in information and social media, are more difficult to extract. Sometimes instead of bulk extraction only opinions meeting certain criteria have to be found, for example opinions mentioning specific product. For that purpose web crawlers can be used. They search for specified keywords in given web domains while collecting addresses of matching pages, which can be further verified manually by the analyst. The content from collected web pages can be extracted using web scrapers (Wójcik 2012).

WORDS LEVEL

The second level in the framework contains two consecutive stages. Their aim is to prepare the text corpus (output of previous stage) for further analysis. The preparation begins with preprocessing stage which consists of such actions like punctuation removal, stripping of

whitespaces and unifying transformation to lowercase. These actions are encoding-sensitive but not language-sensitive and can be performed using different text mining tools.

However preprocessing can also include actions in which tools designed for certain language are required, as for example in proper names identification, stemming, disambiguation and synonyms replacement. All of them require some kind of dictionaries or text corpora. For identification of proper names the dictionary of most frequently encountered names of people, places, works of art etc. can be very useful. It must be taken into consideration that in different languages the same places, buildings, people etc. can have different names. For synonyms replacement semantic dictionaries like WordNet can be used. Stemming requires referenced text corpus for certain language and a set of rules and exceptions allowing to conduct morphological analysis of opinions corpus. The same tools can be also used for disambiguation.

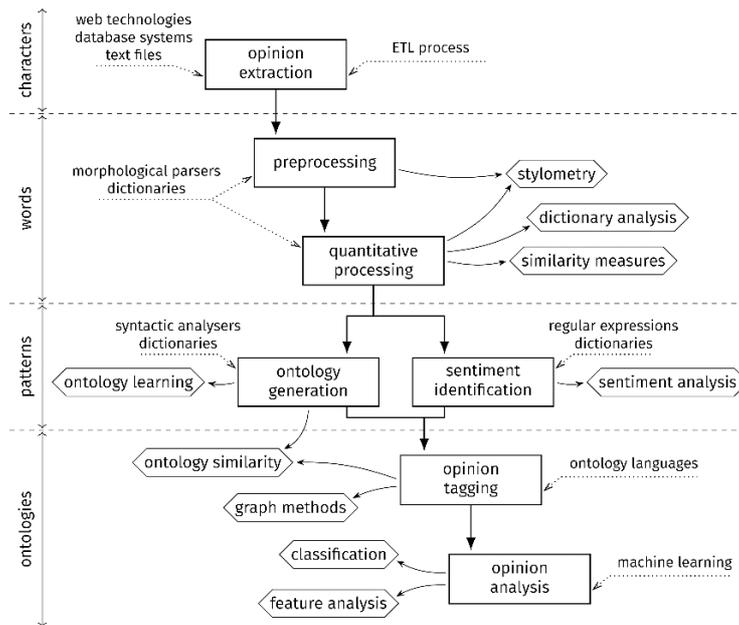
The second stage at words level is quantitative analysis of preprocessed texts concerned with counting occurrences of stemmed and disambiguated words. As its output this stage produces the frequency matrix in which rows represent words and columns represent opinions. At this stage word-based approach to sentiment analysis can be applied. The frequency matrix can be used for calculating similarity between opinions which is the basis for opinion classification. Also feature-based analysis using relative frequencies of occurrence calculated for words describing features in the list of product advantages and disadvantages can be performed at this stage of analysis. With the use of machine learning techniques sentiment dictionaries can be created on the basis of frequency data provided that opinions are annotated with some kind of polarity measure (Dave et al., 2003).

If opinion corpus contains longer reviews serving as writing style samples, stylometry techniques can be used as an extension method during preprocessing and before quantitative processing. The main goal of stylometry is to compute the so called author invariant – a set of style characteristics specific for certain author. This allows to determine whether some opinions were written by the same author or not. Stylometric methods operate on original or partially preprocessed text samples with preserved punctuation, spelling and vocabulary. For example the usage of punctuation may differentiate authors and disambiguating homonyms may conceal stylistic differences(Wołoszyn et al., 2015).

PATTERNS LEVEL

The third level of the framework contains two parallel processes. First of them is ontology generation supported by ontology learning techniques. Ontology learning is usually a semi-automated process with two major strategic approaches: ontology learning from texts and reuse of existing ontology. Pattern detection and interpretation rules allow to determine the features of examined product and relations between them. By applying pattern-matching mechanism to the collection of opinion texts one can generate ontology of given product reflecting how users perceive this particular product and its features, attributes or parts (Wołoszyn et al., 2016).

Unfortunately ontology learning techniques are not always efficient enough to produce ontologies fulfilling all requirements. Instead they can generate only a semi-ontology focused rather on how users see the product than what are all features and characteristics of certain product. Relations captured in such semi-ontology do not reflect the hierarchical relations between parts of product. Nevertheless that kind of ontology can still be helpful in manual creation of product ontology. It contains clues about features that are the most important for users and this information can be used for determining appropriate feature weights.



Processing stages (rectangles) are simplified but correspond to analogous processes or groups of processes on Figure 1. Several tools and technologies are utilized (dotted arrows) in each stage. During stage processing or on stage output specific analysis methods (hexagons) can be employed. Stages belong to distinct processing levels although boundaries between levels (dashed lines) can be ambiguous in some cases.

Figure 2 Proposed framework in the context of natural language processing levels, tools and methods.

Source: own elaboration

The other process within the third level of analysis is aimed at sentiment identification. The main part of this process is concerned with detection of phrases that express the sentiment. Specialized sentiment dictionaries may also be generated as a side effect of processing. Words from sentiment dictionary are often a part of phrase and this phrase may have different sentiment polarity or strength than single words that constitute it. Some words change the polarity of their neighbors to the opposite attitude or they strengthen or weaken the sentiment of certain words. The sentiment identification process is mainly based on regular expression style rules. As an extension pattern-based sentiment analysis can be applied (Wójcik & Tuchowski, 2015a).

ONTOLOGIES LEVEL

On the highest level of analysis framework both processing stages are related to product ontologies. First of them is opinion tagging. With the help of special merging rules product features named in ontology are combined with polarized phrases detected during sentiment identification stage. The entity resolution techniques may also be useful in distinction of products and features. The result of this process is an instantiated ontology – which is an ontology equipped with concrete product instances – and, more importantly, the collection of semantically annotated opinions. Both resources can be finally used in the second, final stage of the framework which is denoted on figures as opinion analysis. Certainly the entire workflow discussed so far is dedicated to opinion analysis but it is not until the last stage when all processed resources are gathered and ready for the most comprehensive study.

The two main modes of analysis are classification, involving similarity measures, and feature analysis. Ontology similarity measures are helpful in comparison of two products. Because

ontology is a graph-like structure, also several graph-oriented methods are very useful in opinion mining. However the most popular type of opinion mining is sentiment analysis. Instantiated ontology can be a basis for both feature based sentiment analysis and sentiment classification. Assuming that a product is a sum of its features, by aggregating the sentiment assigned to product features the overall sentiment for the whole product can be obtained. Weights assigned to certain vertices and edges of ontology graph allow to take importance of particular features into consideration. This approach is called ontology-based sentiment analysis.

4. FRAMEWORK APPLICATION IN EMPIRICAL RESEARCH

As it was mentioned earlier, the proposed framework is based on our previous research results. Our experience indicates that similar or the same processes repeat in different opinion mining tasks and conversely, the same tasks can be performed alternatively with the use of different processes. These observations further emphasize the need for multi-model framework containing all levels of analysis and taking different approaches into consideration. To demonstrate how the proposed framework can be implemented in practice we gathered tasks, tools, input and output resources occurring in several of our previous experiments and we summarized them in the Table 1. The table as a whole exemplifies actual workflow matching the framework design although its fragments were utilized independently in separate research works. Some of processing stages are not yet fully implemented, require manual handling or demand further research as noted in table remarks. All experiments were designed for processing opinions in Polish language and this language choice is reflected in the selection of tools shown in the Table 1.

Table 1 Example of Opinion Mining Framework usage

Level	Process	Input	Output	Technologies	Tools
Characters	Opinion extraction (Wójcik & Tuchowski, 2014)	list of products; online opinion source	database with extracted opinions; .txt files with opinions and their scores	ETL; web technologies; database systems; text files	dedicated PHP application based on DOM parser
Words	Preprocessing ^{1,2} (Wójcik & Tuchowski, 2015b)	set of .txt files with opinions	preprocessed documents corpus	text mining tools; morphological parsers; disambiguation tools	tm package for R language; Spejd; dedicated JAVA application ³
	Quantitative processing (Wójcik & Tuchowski, 2015a)	opinion corpus	frequency matrix; list of products features; sentiment dictionaries ⁴ ; tag clouds; classifier trained for sentiment classification	text mining tools (including text similarity measures); machine learning;	tm package for R language; Spejd;
Patterns	Ontology generation (Wołoszyn, et al., 2016)	frequency matrix; list of product features; preprocessed opinions corpus	semi-ontology of examined product	ontology learning; ontology languages;	Spejd; dedicated JAVA and Python applications
	Dictionary generation (Wójcik & Tuchowski, 2015b)	frequency matrix	sentiment dictionaries	shallow parser	Spejd

Level	Process	Input	Output	Technologies	Tools
	Sentiment identification (Wójcik & Tuchowski, 2015a)	sentiment dictionaries; preprocessed opinions corpus; sentiment modification rules	.xml files with polarity assigned to words and phrases	regular expressions	Spejd; dedicated JAVA application
Ontologies	Opinion tagging (Wójcik & Tuchowski, 2014; Lula, et al., 2016)	product ontology; .xml files with polarity assigned to words and phrases	instantiated ontology	regular expressions	GATE application ⁵
	Opinion analysis	instantiated ontology	opinion mining results	sentiment analysis (sentiment classification, feature-based sentiment analysis); ontology similarity	dedicated JAVA application (OBCA(Tuchowski, et al, 2011))
Notes:					
¹ For Polish language synonyms replacement is difficult to conduct because Słowosieć (Polish WordNet) by design contains as few synonymic relations as possible. Rather relations of hyperonymy and hyponymy are used.					
² Opinions used in research was too short to conduct stylometry analysis and there were no information about authors					
³ Spejd output has a form of XML files that have to be analyzed and transformed to raw text files					
⁴ The efforts aiming to use machine learning approach to construct sentiment dictionaries are still in progress					
⁵ Currently opinion tagging with ontology nodes is done manually, however JAPE rules which can be defined in GATE application are promising tool that can automate this process					

Source: Own elaboration

5. CONCLUSION

The framework proposed in this paper covers all stages of opinion mining and takes into account different text mining approaches to sentiment analysis. It also distinguishes inputs, outputs, useful technologies and other types of analysis accompanying the main flow. The main advantage of the framework is complex, holistic approach to opinion mining. By providing numerous extension points the framework facilitates development and integration with external processing pathways. It is also conceptually possible to treat the final output of several framework instances as metaopinions, or opinions about opinions, and use them as a new source of input to another instance of the framework thus forming a recursive loop indicated on the general framework scheme. Furthermore the presented implementation example points out suitable tools that can be used for analysis of opinions in Polish language. Our future plans include designing dedicated software library for coordinating the processing flow and exchange of input and output resources between different applications involved in the framework without user intervention. Automation of task control and integration which is currently done manually would increase the efficiency of opinion mining analysis, however we are aware that there is still much more work needed before such goal could be fully achieved.

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THE IMPORTANCE OF FRANCHISE NETWORKS IN ECONOMY ON THE EXAMPLE OF POLAND

Karolina Orzeł¹

Abstract: *Franchising is a specific form of conducting business and it is broadly applied in almost all sectors of economy all over the world. The growing popularity of franchise is reflected in a greater and greater number of dynamically developing networks which are conquering sales markets. This way of conducting business activity has numerous advantages for which independent entrepreneurs are ready to give up some of their autonomy to become partners of a network firm. On the other hand, large network businesses take decisions about long-term cooperation with sole traders within which they participate in creating the image of one brand. The paper presents the influence of franchise on economy with particular focus on an opportunity to overcome obstacles, mainly financial, demand-related and technological ones, which cooperation within franchise provides. The Polish market will be analysed, based on secondary data collected by the Author.*

Keywords: *franchise systems, economy, Polish market*

JEL Classification: *E02, L24*

1. INTRODUCTION

The current highly competitive environment motives to search for cooperation with other entities. The main driving force which necessitates entrepreneurs to cooperate with other partners is the fact that the opportunities to develop new products and the penetration of new markets have become a too expensive venture to be implemented on one's own. Therefore, in the turbulent economy there is no place for "isolated activities of firms"(Kortan, 1986), we can observe fast growth of network relationships, and franchise systems among them.

Although there is not one definition of franchise, its idea is clear - a prosperous firm with a reliable, registered brand and codified procedures of conducting business (network founder) offers an opportunity for autonomous activities in its franchise system, namely the use of its knowledge/experience, trademark and other elements (depending on the type of franchise, these may be: products, training system, technologies, etc.) to other entrepreneurs, most often new on the market, for an adequate licence fee (a one-time fee when entering the network) and by charging monthly fees (depending on the turnover or a pre-imposed amount).

The aim of the article is to present the influence of franchise as a modern network relationship on economy. Based on the analysis of literature and available reports on the franchise market, the Polish market and its transformations undergoing over the last ten years will be analysed.

2. LITERATURE REVIEW

Depending on the side from which we look at franchise, we can discern various levels of defining the issue. The basic definition included in the European Code of Ethics for Franchising (EFF, 2016) is worded as follows:Franchising is a system of marketing goods

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and/or services and/or technology, which is based upon a close and ongoing collaboration between legally and financially separate and independent undertakings, the Franchisor and its individual Franchisees, whereby the Franchisor grants its individual Franchisee the right, and imposes the obligation, to conduct a business in accordance with the Franchisor's concept. The right entitles and compels the individual Franchisee, in exchange for a direct or indirect financial consideration, to use the Franchisor's trade name, and/or trade mark and /or service mark, know-how, business and technical methods, procedural system, and other industrial and /or intellectual property rights, supported by continuing provision of commercial and technical assistance, within the framework and for the term of a written franchise agreement, concluded between parties for this purpose (it is an unnamed contract in the Polish law).

In the definitions which can be found in the management literature, various aspects of franchise are highlighted. According to Zeller (2001), franchise is the capitalisation of intangible assets - the franchisor, who worked on "deciphering" the industry and adjusting to the market, in this way can earn on imitating a proven idea in the form of a ready operational guidebook. In Ciechomski's (2009) opinion, franchise is based on a close collaboration form of integration of legally and financially independent businesses: the franchisor and the franchisee, the aim of which is the maximisation of the sales of goods and services. According to Sławińska (2010), franchise can be defined as a total, permanent form of cooperation of firms, which can take a form of both vertical and horizontal cooperation. Gillis and Combs (2009) claim that franchise is a ready formula of a firm, including the business concept, organisational procedures and the whole management system, starting from the selection of people and the location of the facility, and ending with the solutions to all kinds of ongoing problems. The resale of such a type of licence without having own establishments in the network is called "TURNKEY franchising" and is quite popular on the services market.

The United States are considered to be the cradle of franchise networks, thus, in foreign literature the phenomenon of franchise has been analysed since mid-20th century. It is extremely abundant but we can observe that the deliberations of scientists oscillate around three main issues/theories; specific milestones searching for an answer to the question "Why do entrepreneurs choose franchise?" The mentioned theories include:

- Resource Scarcity,
- Agency Theory,
- Possessing both own and franchised establishments (The Plural Form Symbiosis).

The research developed in this stream constitutes specific foundations for contemporary scientists in the search for new relationships and analysis of the aforementioned theories on their domestic markets. The complete summary of the output of Western scientists can be found in the following works: "*Franchising Research: Major Milestones, New Directions, and Its Future Within Entrepreneurship*" (Combs, Ketchen, Short, 2011) or "*Antecedents and Consequences of Franchising: Past Accomplishments and Future Challenges*" (Combs, Ketchen, Shook & Short, 2011).

In Poland, the first franchise systems appeared only after 1989 with political and economic transformations. When analysing the Polish literature, we can observe that the majority of works are those defining the phenomenon of franchise or attempting to place it in reality and the legal and economic environment of the country. Among the most often cited publications within that scope there are, among others, works by Stecki (1997), Tokaj-Krzewska (1999) or Pokorska (2000, 2002, 2006). Only after 2000 research papers analysing a relatively young franchising market started to appear in the Polish literature. Papers by Ziółkowska (2011) and Antonowicz (2010) are worth distinguishing. Moreover, it should be emphasised that franchise in Poland is such a characteristic and at the same time a relatively new form of the

functioning of firms that data concerning it are collected and processed mainly by appropriate industry-related associations and specialised private firms, and not by Polish statistical offices. This fact is the reason for which direct comparisons among individual countries are often difficult and not fully possible.

3. THE INFLUENCE OF FRANCHISE NETWORKS ON THE POLISH ECONOMY

The Polish franchising market is developing extremely dynamically, which is proven by the fact that since the beginning of its existence the number of franchise networks has been on the increase (Antonowicz, 2007). Over the last ten years of the functioning of franchise contract in Polish business transactions, there has been an increase of 80 networks a year on average, and the lowest growth of the number of networks could be observed in 2006 (only 19 systems were established over the year), whereas the largest one in 2010 (136 new systems were established) - see: Table 1.

Table 1 The number of franchise systems and entities in Poland in the years 2006-2016

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016*
The number of franchise systems	329	405	517	626	762	845	942	998	1,062	1,114	1,170
The number of franchise entities	23,131	25,654	30,634	37,982	45,202	53,392	57,490	63,482	65,984	68,460	71,000

*PROFIT system forecast

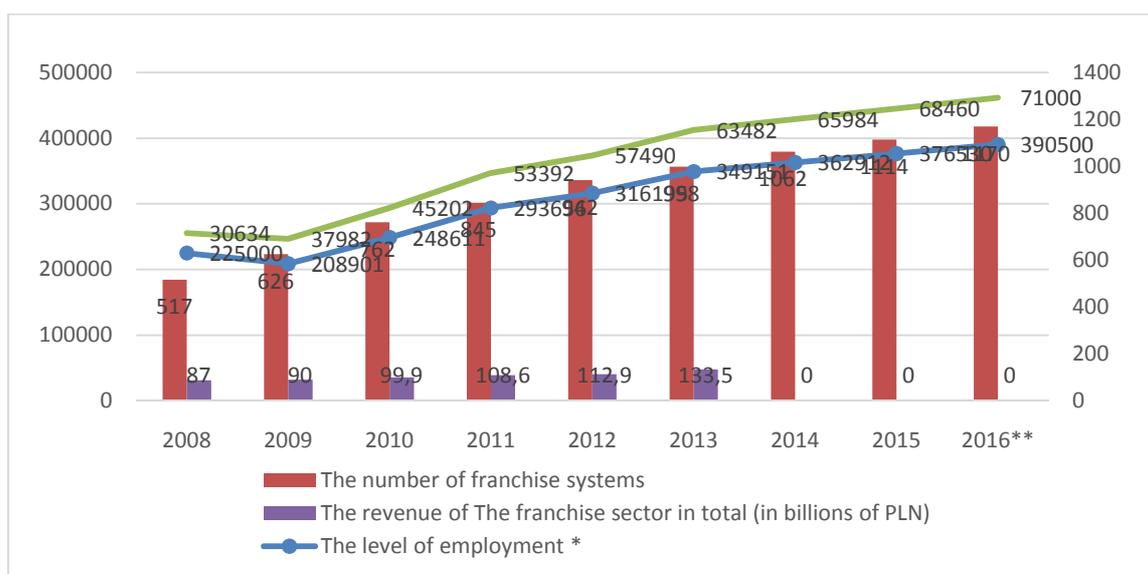
Source: Raport o franczyzie w Polsce, 2016

As an organisational form of conducting business, franchise has contributed to substantial qualitative changes in many areas of economy, at the same time bringing about their accelerated growth. According to Gerber (2001), only the development of franchise networks has initiated the era of "true entrepreneurship", as it has introduced a new manner of deriving benefits from the fact of finding a good idea and transforming it into an effective business venture. In addition to two basic forms of making profits, namely running a profitable business or selling it, a third opportunity has appeared: making a comprehensive and proven concept of running a business available to other entrepreneurs against fee and according to specific principles. As a result, a new stream of entrepreneurial initiatives has been launched, consisting in the search for and implementation of business concepts which presuppose the use of franchise.

Franchising has considerably extended the group of people undertaking entrepreneurial initiatives. It has enabled a start in business to people who would have never decided to do that or would not have been able to face such a challenge before. In the franchise system candidates for entrepreneurs, for a suitable fee, receive a tested prototype of a business venture. A great majority of them would not be able to work out a similar solution due to the lack of creative predispositions, experience, and due to financial limitations. Simultaneously, such a prototype can be also tested in operation, understand how its components function, and achieve necessary skills and qualifications by participating in training programmes, even before the launch of one's business. Of course, it is related to paying some fees to the creator of the prototype of a business formula. However, (which we have emphasised before), without such a possibility, the majority of the system participants would never undertake it on their own.

As it arises from the PROFIT system study (Raport o franczyzie w Polsce, 2016), both franchisors and franchisees coped much better than other entrepreneurs with the economic situation in which they functioned in recent years. In 2015, as it was determined by the Central Statistical Office, the number of private firms increased by 0.8 percent, including firms owned by natural persons by only 0.4 percent. At that time, the franchise market was characterised by relatively fast growth - it was 4.9 % in the case of franchisor networks and 2.4 % in the case of franchisees - there were 56,510 of them at the end of the year. Franchisees are almost exclusively natural persons conducting business activity. Thus, we can claim that franchisees' firms are developing about six time faster than enterprises of natural persons in total in Poland. Moreover, the share of franchising firms among business entities is growing fast.

The rising employment in this market sector has also a substantial impact on the Polish economy. For the Poles, franchise is an attractive and beneficial way of conducting business activity. As we can see in Figure 1, an increase in the number of franchise establishments is accompanied by the growth of employment. In 2015, with the average employment at the level of 5-6 people per a franchise establishment, the total number of workers in franchise establishments fluctuates around 370 thousand. The value concerns employment expressed as full-time jobs and does not include franchisees or the system organisers. With franchisees and franchisors, even 460 thousand people work on the Polish franchise market.



* Assuming that the employment in a franchise establishment is 5 - 6 people on average

**PROFIT system forecast

Figure 1 Franchising relationships in Poland in the years 2008-2016

Source: Own elaboration based on Raport o franczyzie w Polsce, 2016

The dynamic development of the discussed market at the time of increased uncertainty, and its greater "immunity" to the economic situation, primarily result from the benefits granted by franchise collaboration. As early as at the investment stage, the franchisee bears much lower costs than an entrepreneur basing on his or her own idea. As it arises from research, more and more entrepreneurs functioning under their own brand are undertaking cooperation with franchisors, and what is more important, they continue such cooperation successfully. Franchisees a few times more seldom take a decision about terminating business activity in comparison with entrepreneurs conducting activity under their own brand. Thus, franchise is

not only a more beneficial solution, but also much safer, less risky. As it was observed rightly by Ziółkowska (2011), franchise relationships contribute to the decline of the unemployment rate in small and medium-sized towns, an increase in the group of experienced employees of franchise entities receiving cyclic training organized by parent firms.

The value of sales revenues in franchise entities is also characterised by an increase. In the years 2008-2013, almost double growth was noted (see: Figure 1). In Poland, the franchise market generates about 7% of GDP. It is still not much in comparison with the leader in this respect, the United States, where the share reaches 15% of GDP. Likewise, the revenues of the Polish sector are still lower than in other European Union countries. The value of the turnovers achieved in franchise firms is growing year by year. However, one should remember that the economic impact of franchise networks is even broader, as by engaging other firms, their suppliers and partners in cooperation, networks fuel the economic growth and give jobs.

Franchise has also a significant impact on export and transborder trade. The ability of the system to duplicate makes this business strategy particularly suitable for territorial expansion, both within national and international borders. The phenomenon can be observed on the Polish market where the number of brands which develop their establishments outside the country of origin is increasing every year (Figure 2).

After stagnation in the years 2010 and 2011, there has been a recovery in terms of the foreign expansion of Polish franchise systems. In 2012 there was an increase by 10 to 82 such systems, in the following two years by 11 - to 93 and 104 networks, respectively. The slowdown of the dynamics took place in 2015, but the growth was considerable, anyway (by 6 systems). Moreover, 89 franchisors from Poland are declaring the intention to internationalise their concepts via franchise. Some of them have their own foreign establishments.

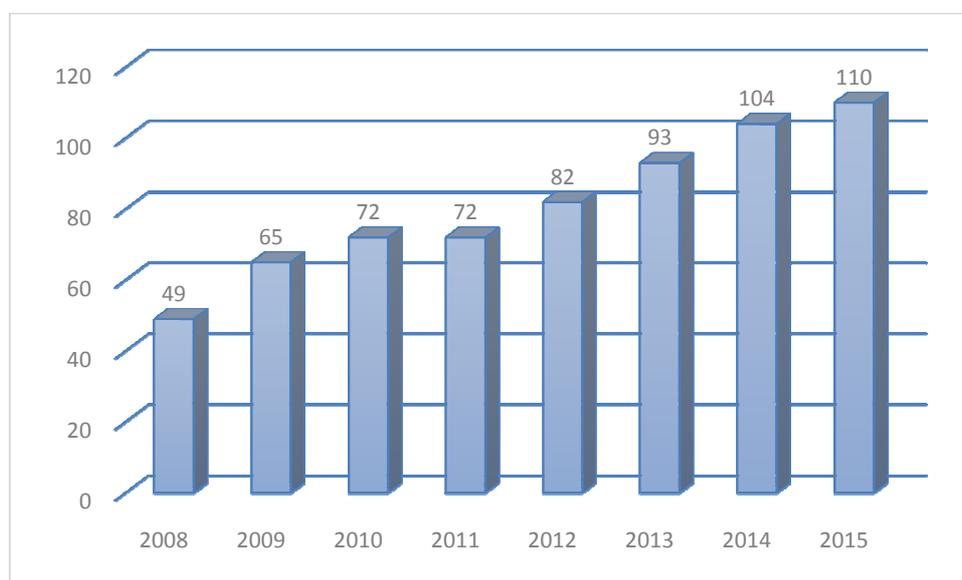


Figure 2 Foreign expansion of Polish franchise systems in the years 2008-2015

Source: Raport o franczyzie w Polsce, 2016

As it arises from the PROFIT system study, the majority of the organisers of franchise systems who cooperated with foreign franchisees had their brands in a few countries. Polish franchisors most often internationalised their systems to 6 neighbouring countries. The most

frequent directions of development are Slovakia, the Czech Republic, Germany, Ukraine, Russia and Lithuania. In 2015, 110 franchisors cooperated with franchisees having a little more than 2.2 thousand establishments. Thus, year after year the access to foreign markets turns out to be more beneficial and easier. Owing to that, Polish franchise brands are more and more popular worldwide.

4. CONCLUSIONS

According to the latest PROFIT system study (Raport o franczyzie w Polsce, 2016) 1,114 franchise systems operate on the Polish market, within which there are 68.4 thousand stores and service points. At present, franchise is one of the main paths of development for small firms and gives employment to as many as 460 thousand people. Franchise:

- influences the basic economic indicators, namely the reduction of unemployment rate connected with the self-employment of new franchisees and the growing share in national GDP,
- is a perfect instrument of the economic activation of entities on the market - it influences the development of entrepreneurship in the sector of small and medium-sized enterprises,
- enables the restructuring of a firm - it opens a new perspective for developing activity to a greater scale by offering a product of new generation - a ready business concept which can be successfully developed both on the domestic and foreign market,
- it is a stimulator and transmitter of innovativeness - owing to network relationships and improved mechanisms of sharing knowledge, the system participants can make use of product, system or organisational improvements created in various parts of the chain.

To sum up, the continuous development of franchise networks is of great significance to the national economy.

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VALUE FOCUSED RESTRUCTURING AS A TOOL FOR AN INCREASE IN THE EFFECTIVENESS OF ENTERPRISE VALUE CREATION^{*}

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Abstract: *Enterprise value creation is perceived at present as the most universal and comprehensive measure of the effectiveness of activities undertaken by an enterprise and a determinant of the quality of management which, acting as a superior goal, most comprehensively favors the maximization of the equity owners' benefits, at the same time considering the expectations of the remaining groups of the enterprise stakeholders. Effective enterprise value creation also requires to undertake often radical changes in the enterprise, implied both by the influence of the environment (adaptive changes) and the strive of the enterprise to search for new scopes, concepts and methods of functioning which will serve its development, and through it, an increase in the effectiveness of value creation (anticipatory changes). In this context, restructuring is regarded a useful tool enabling the growth of the effectiveness of enterprise value creation. It has been used for a long time to seek the paths for an increase in enterprise effectiveness. Thus, the main aim of this paper is to indicate the possibilities, the scope and the conditioning of using value focused restructuring as a tool for the search for the paths of an increase in the effectiveness of enterprise value creation.*

Keywords: *Effectiveness of enterprise value creation, Value based management, Value focused restructuring*

1. INTRODUCTION

Effectiveness is one of the most important economic categories constituting an aspect of the rationality of management. In this context, both economics and management studies have worked out, for their own needs, separate but complementary ways of looking at the essence and the substantive sense of the effectiveness category. The theory of economics, particularly welfare economics, identifies the notion of effectiveness with so-called Pareto effectiveness which refers to the search for the paths of growth of economic effectiveness and the use of optimum solutions for this, in terms of the allocation of economic resources (Acocella, 1998) (Stiglitz *et al*, 2015). Thus, the applicative character of management studies is the reason for which effectiveness becomes an inherent part of the process of making optimum choices for the pursuit of the enterprise goals and the selection of adequate means and methods of their achievement.

At the same time, a variety of goals of individual stakeholders of a firm makes it not fully possible to consider and equilibrate the expectations of those groups. Simultaneously, however, it should be strongly emphasized that the strive for enterprise value creation and its multiplication, beneficial for the owners, is not in conflict with the interests of other stakeholders. On the contrary, the financial success of the owners creates the conditions for the value growth for the other parties, as well. Effective enterprises create new jobs and

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financial incentives for their employees, they pay higher taxes, they are reliable and desired customers for banks and counterparties for business partners. Such an assertion also suggests that businesses create value for their owners only when at the same time the value for other stakeholders is created. Hence, the stakeholder theory in the first place identifies the goal of enterprise activity with the creation of value for its internal and external stakeholders, noticing a broad, social context of the functioning of business entities. Therefore, enterprise value creation is perceived at present as the most universal and comprehensive measure of the effectiveness of activities undertaken by an enterprise and a determinant of the quality of management which, acting as a superior goal, most comprehensively favors the maximization of the equity owners' benefits, at the same time considering the expectations of the remaining groups of the enterprise stakeholders.

Effective enterprise value creation also requires to undertake often radical changes in the enterprise, implied both by the influence of the environment (adaptive changes) and the strive of the enterprise to search for new scopes, concepts and methods of functioning which will serve its development, and through it, an increase in the effectiveness of value creation (anticipatory changes). In this context, restructuring is regarded a useful tool enabling the growth of the effectiveness of enterprise value creation. It has been used for a long time to seek the paths for an increase in enterprise effectiveness. Thus, the main aim of this paper is to indicate the possibilities, the scope and the conditioning of using value focused restructuring as a tool for the search for the paths of an increase in the effectiveness of enterprise value creation.

2. THE IDEA OF VALUE FOCUSED RESTRUCTURING

Restructuring is a process of radical changes in economic structures, which are implied both by the transformations in the sphere of the mechanisms of the functioning of economies and the strive to shape new paths of growth for enterprises in order to increase their effectiveness and competitiveness on the market. This assertion is fully compatible with the origin of the "restructuring" term which comes from the combination of two words: "*to reconstruct*" and "*structure*". The thoroughness and radicality of changes undergoing within the restructuring process is a common feature of virtually all definitions of the economic category which for decades has been permanently present in the economic space of countries with developed market economy. Hence, the restructuring theory and practice, coming from the United States and the West European countries, strongly stresses its purposeful and long-term character, relating it to the process of shaping the strategy of an economic organization and undertaking activities focused on the implementation of necessary and radical changes within this scope (Hurry, 1993) (Blatz *et al*, 2006). Simultaneously, restructuring is treated as a process focused on the reinforcement of an organization's capabilities of implementing its goals, including the basic financial goal, namely the maximization of the value of economy and its entities (Myers, 1977). Simultaneously, it is emphasized that it is a process of radical and multi-area changes which focus on significant areas of business activity, which in practice has given rise to various types and kinds of restructuring (Singh, 1993) (Hoskinsson *et al*, 1990).

Creating the value of an enterprise requires undertaking permanent activities focused on changes undergoing in its environment. It implies the need to make transformations in the sphere of organizational, technical and economic processes and systems determining the growth of the enterprise effectiveness – including the pace of its value creation. Hence, restructuring is also considered to be a significant tool for adapting enterprise management system to the requirements implied by the value creation process. The implementation of value-based strategy enhances the usefulness of restructuring, both for the aims of shaping the

enterprise development (development restructuring), and in order to adapt the enterprise to radically changed conditions of functioning (adaptation restructuring).

Among the most commonly quoted aims and anticipated effects of restructuring there are: enhancing the competitiveness, efficiency and effectiveness of activities, raising modernity, adaptation and innovation, improving the rationality and efficiency of the economic resources management. And when specifying the above phrases, a great variety of measures allowing the quantification of restructuring effects are taken into account. When probing into the restructuring process from the micro-economic perspective, i.e. from the point of view of an enterprise under restructuring, close interrelation between the “aims of enterprise functioning” and the “aims of enterprise restructuring” should be emphasized. While presenting them, one cannot overlook their vivid similarity, if not sameness, as both of them may have a more or less specific character, both may pertain to financial, marketing, technological or social aspects of enterprise functioning, and lastly, they both may be formulated on a short-term or long-term basis. The points raised above may lead to the assertion that the aim of enterprise restructuring is to make enterprises capable of fulfilling their aims to a greater extent than before, and therefore, make them better at meeting expectations of their owners, as well as of other stakeholders. And since the maximization of enterprise market value is regarded the primary goal of an enterprise, all restructuring actions, engaged in order to implement it, should make it successfully accomplished. The tangible effect of restructuring viewed this way should be seen in an increased pace of creating enterprise value. This objective is more possible to be reached through undertaking restructuring actions, as referred to various areas of an enterprise and the spheres of enterprise functioning. In this context, enterprise restructuring becomes an integral approach focused on the optimization of operational and strategic processes from the value creation perspective (Blatz *et al.* 2006). Restructuring may thus involve all realms of actions which have an influence upon creating enterprise value, including so called value drivers³. In such a context, restructuring may be acknowledged as a tool used for creating enterprise value and defined as value focused restructuring (VFR). It fully corresponds with the contemporary perception of restructuring as a tool enabling the growth of the attractiveness of a firm from the point of view of potential investors, and not only as a tool for introducing short-term changes in an enterprise, most often forced by the impact of external factors. Such a perspective of perceiving restructuring has underlain its treatment as a permanent process, constituting a response of an enterprise to turbulent and less and less predictable environment (Borowiecki, 2010).

Value focused restructuring needs clearly distinguished areas of indispensable changes so as to institute them suitably within the sphere of activities of an enterprise. Such a context allows to use so called Restructuring Pentagon, which is an example of a textbook view of both the scope and the effects of restructuring (Copeland *et al.* 1990). The usefulness of this model can be seen in its ability not only to depict the overall effects of restructuring, but also to trace successive steps of enterprise value potential undergoing changes, and factors influencing it. The Restructuring Pentagon, proposed by one of the creators of the value based management concept, is the first model solution exposing the usefulness of restructuring from the point of view of the strive for the maximization of enterprise value and the creation of value based management systems.

3. THE SCOPES AND THE INSTRUMENTS OF VFR

On the basis of the mentioned Restructuring Pentagon, the value focused restructuring process comprises four consecutive restructuring stages, namely:

³ The creator of the value drivers concept is an American economist A. Rappaport. See: Rappaport (1986).

- restructuring of communication with the environment,
- operational restructuring and strategic reorientation,
- restructuring of links with the environment,
- financial restructuring.

Each of the restructuring stages necessitates the employment of diverse instruments and methods of restructuring, which should be individually adjusted to a particular situation of the entity being restructured, and to internal and external conditionings being the basis for the restructuring process. It should be brought into attention that restructuring may apply to an enterprise afflicted with problems and threatened with decline (restoration restructuring), as well as to enterprises in good economic condition (developmental restructuring) and seeking new ways to increase their competitiveness and attractiveness on the market. Partial effects of employing diverse instruments and methods of restructuring materialize in the form of the growing value of an enterprise. Accordingly, Table 1 presents both instruments and methods used in particular stages of VFR, and the effects of their application.

The difference between “*value after restructuring*” and “*value before restructuring*” represents the total value effect of the VFR process, that is, an increase in the enterprise value. It is the final result of all stages being integrated, including various methods and instruments which helped to produce individual, partial effects. It should also be reminded that particular effects of restructuring, represented by changes in the value and structure of the capital and the assets of an enterprise, as well as by growth of the its profitability and competitiveness on the market, all, collectively, determine the enterprise market value.

4. VALUE CONTROLLING IN VFR

The efficient implementation of value focused restructuring at the same time requires the identification of the areas of necessary changes, and within their limits, the indication of the scope of desired activities initiating and stimulating value creation processes. Controlling is a tool which is useful for this purpose, a tool enabling not only the identification of necessary improvements, but also the coordination of the undertaken activities and monitoring their effectiveness. It is a system of steering the entirety of an enterprise’s activity and the element supporting the process of its management. The use of the controlling concept to monitor and assess the processes of value creation in the first place requires the identification of the key determinants of these processes, and by showing the way these determinants influence the change in the market value of an enterprise.

When indicating controlling as a useful concept of enterprise management, we should bear in mind that the concept has developed as one of the results of improving the enterprise management process. Hence, the roots of controlling lie basically in the economic practice. Tight relationship with the economic practice is the reason for which a lot of its definitions focus, on the one hand, around the implementation of enterprise goals as the key determinant of the management process (controlling as a tool for steering the enterprise activity towards the accomplishment of the goal set, while on the other hand they stress coordination as a leading task of controlling in an enterprise (Schultze *et al*, 2005). In this context, controlling is seen as a system supporting the enterprise management process in taking decisions for the effective pursuit of its goals.

Table 1 The value focused restructuring process

Restructuring stages	Restructuring scope	Applied instruments and methods of restructuring	Description of restructuring effects	Enterprise value
		Enterprise before restructuring		value before restructuring
Stage 1	restructuring communication with the environment	<ul style="list-style-type: none"> improving the communication between the enterprise and the market so as to eliminate the asymmetry between the market and the enterprise and its board of directors, buy-out of enterprise's own shares 	<ul style="list-style-type: none"> enhancement of enterprise attractiveness as a form of investment removal of the information gap, better positioning of the enterprise on the market . 	value according to the present state
Stage 2	operating restructuring and strategic reorientation	<ul style="list-style-type: none"> Reengineering, Total Quality Management (TQM), Lean Management, Benchmarking, Just In Time Kaizen, Downsizing, Delaying, change of management structure, change of remuneration system, strategic alliances. 	<ul style="list-style-type: none"> improvement of efficiency of enterprise assets, increase in work efficiency, quality improvement, enhancement of sales dynamics, increase in operating profit margin, activating unused reserves. 	value after internal and external improvements
Stage 3	restructuring links with the environment	<ul style="list-style-type: none"> Mergers, Acquisitions, Outsourcing / Insourcing, Outplacement, Spin-off, Investments / Divestments 	<ul style="list-style-type: none"> changes in the structure of enterprise assets, diversification / specialization of enterprise functioning, taking advantage of synergy effects. 	value after internal and external improvements
Stage 4	financial restructuring	<ul style="list-style-type: none"> privatization, Leverage Buy-Out (LBO), Management Buy-Out (MBO), Employee Buy-Out (EBO), buy-out of enterprise's own shares. 	<ul style="list-style-type: none"> optimization of capital structure, taking advantage of the effect of financial leverage, taking advantage of the effect of tax cover, changes in ownership structure. 	value after internal/external improvements and financial restructuring
		Enterprise after restructuring		value after restructuring

Source: own study based on Copeland *et al*, 1990, and Blatz *et al*, 2006

When discussing it from the perspective of the value creation postulate, controlling can be perceived as an enterprise infrastructure element supporting the functioning of the value chain and involving necessary economic resources to do that. As the resources are directly related to the functions performed by individual organizational units of an enterprise, it has become necessary to adjust controlling to the specific character of various functions, the effect of which has become the creation and development of functional controlling, also including the basic kinds of controlling, such as: financial controlling, investment controlling, marketing controlling, personnel controlling and logistics controlling.

The occurrence of functional controlling should be perceived as a consequence of the development of the controlling concept towards its adaptation to the specific character of individual areas and using controlling methods and instruments appropriate for their specific character with reference to them. The development of controlling and the improvement of the tools used within the types mentioned is at the same time a consequence of the search for ways leading to an increase in the effectiveness of an enterprise and its more and more effective adaptation to the changing conditions and requirements of the environment in which it is to conduct its activity. At the same time, taking into consideration the fact that controlling is in its essence a coordinating process, which subordinates various areas of an enterprise to the pursuit of the assumed goals, the formation of the objectively specialized controlling areas should be treated as a logical consequence of the pro-value orientation of individual fields of enterprise management.

The development and the popularization of pro-value orientation in enterprise management in connection with treating controlling as a system of achieving an enterprise's goals is at the same time a reason for which it becomes necessary to direct instruments and methods used in controlling directly towards the support for the implementation of the basic goal, namely the maximization of its market value. The result is the formation of so-called value controlling as the reflection of the formal direction of controlling concept towards enterprise value creation, and thus the multiplication of the capital invested by its owners (Schierenbeck *et al.* 2002).

The value controlling concept makes the information, planning and control subsystems creating controlling system be directed towards the support for the process of enterprise value creation, whereas the coordination function of controlling focuses on guaranteeing efficient and effective management leading to the growth of enterprise value. The achievement of the goal set in this way requires *ex ante* an analysis of various decision alternatives leading to an increase in enterprise value, whereas *ex post* it implies the need for the control of effects achieved in the mentioned scope. Therefore, it becomes possible to plan and control the potential of the value growth, which, in connection with the remaining functions of pro-value focused management, creates conditions for the effective functioning of the whole system of enterprise value management (Schultze *et al.*, 2005). In this context, we should meet a need for the close relationship between value controlling and value focused restructuring presented before. VFR, based in its essence on a specific philosophy of management focused on the multiplication of value, has to be supported by a practical solution which will let the achievement of specific benefits in an enterprise, materializing themselves in the form of the effective multiplication of its value. Value controlling seems to be exactly the solution which meets this kind of expectations in an enterprise.

Thus, in the context of individual components of the value based management system, we can indicate the following value controlling functions which are the key functions from the point of view of this system's functioning as an element supporting and coordinating the process of value creation in an enterprise, as well as enabling the monitoring of its partial effects (Schierenbeck *et al.*, 2002):

- determining the current (initial) value of the enterprise (value before restructuring),
- planning and controlling potential value growth opportunities,
- supporting activities focused on the use of the existing potential of the enterprise value growth in order to increase the effectiveness of its value creation process.

The formation and development of value controlling should be perceived as a logical element of the development of the controlling concept in the conditions of the prevalence of value focused management. Thus, planning, budgeting and reporting value, possible owing to the application of adequate measurement indicators and the assessment of the value creation effectiveness, enable to plan and implement value focused restructuring in an enterprise. In this way, the obvious pragmatics of conducting business becomes a determinant of not only the scope and the directions of the evolution of an enterprise, but also the whole restructuring process based on the owners' expectations referring to the multiplication of the value of the capital invested by them. Such a method of using value controlling as a tool for monitoring the effectiveness of the restructuring process may be treated as a starting point for the formation of a concept of separate controlling of enterprise restructuring.

5. CONCLUSIONS

The use of restructuring as a tool supporting the creation and improvement of value based strategy must be perceived as a logical consequence of the development and popularization of the value management concept. The pro-value paradigm of enterprise management implies the need for creating and implementing tools which would enable the effective accomplishment of the basic goal of an enterprise which in this case is the maximization of its market value. In this situation, building an enterprise's strategy directly focused on the achievement of such a goal becomes a condition for its efficient and effective pursuit. The use of restructuring as a tool serving the growth of the effectiveness of enterprise value creation is also a consequence of the formulation of a new management paradigm - the permanent restructuring paradigm (Borowiecki *et al*, 2015). Thus, value focused restructuring is a management tool which is closely connected with two paradigms: the pro-value paradigm and the permanent restructuring paradigm.

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LOGISTIC MANAGEMENT FOR SUPPLY CHANGE: ANALYSIS INSTRUMENTS FOR BUSINESS STRATEGIES

Barilla, D. Caristi, G. Puglisi, A. and Saitta, E.¹

Abstract: *The paper illustrates a methodology that integrates different risks and economic factors in a route transport optimization problem and proposes an original decisional tool for decision makers (public and private) to better manage the environmental risks of hazardous materials transport. We introduce a new decision model based in which the importance of at the weights of the considered criteria. The model can be easily customized to other case studies and adapted to different routing problems. The model, integrated, for the calculation of the criteria, the probability of occurrence of certain random events, graph theory for the measurement of distances, then a set of mathematical tools, such as eigenvalues and eigenvectors of matrices that enable the adjustment of the weights on criteria, which are obviously taken by a decisionmaker.*

Keyword: *logistic, decision, matrix, transport, risk*

1. INTRODUCTION

Logistics deals of spatial distribution study of nodes and logistic flows, such as of their government and balance in networks and in space, both local and global. The main problem is to identify and to assess the constraints, and above all the factors of production and logistics development of a local economic system, explaining a reticular vision of territory based on new principles of planning and organization that move towards a better balance between flows and nodes often located in geographically distant, and to intersection between supply and demand of goods, services and infrastructure.

For the above, it becomes necessary to study the interconnections between exogenous and endogenous factors between the logistics and transport. This has a strong weight in the economic literature, since it allows to optimize the costs of storage and transport of goods, taking into account the risks to which it is subjected the environment and people from the transport of dangerous goods.

We have to consider a model that takes into account that the decision maker or the entrepreneur often not familiar with the mathematical models, then you need a model that tends to adapt the parameters dictated by people and make them to gain an international normalized a very good point.

The joint implementation of logistics instruments can be seen as a dynamic process to optimize flows and to organize activities in territory according to its vocations and specificity, in order to agree efficient and systemic processes of mobility and development, then to reduce the impacts that result from the creation of new infrastructure, production and service models that will be constitute.

The literature dealing with the problem of routing hazardous materials is rich and numerous models have been proposed in recent years. Robbins (1983) proposed three models having as objectives respectively:

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- the minimisation of the size of the population affected by the accident;
- the minimisation of the route length.

Saccomanno and Chan (1985) proposed a model that could represent more realistically the effects of an accident on the surrounding population. Actually, the model employs two criteria: a minimum risk criterion and a minimum accident likelihood. A third criterion dealing with the economics of the problem, that of minimization of the truck operation cost, is also involved. Zografos and Davis (1989) developed a multi-objective decision making model. The four objectives proposed to consider in the model are:

- population risk;
- property damages;
- truck operation cost;
- equitable distribution of risk by imposing capacity limits on the network links.

Karkazis and Boffey (1994) selected the routes to minimize the expected damage effects on the population in case of an accident. The model proposed generalizes the existing one in the following aspects:

- the dispersion of pollutants is determined by the meteorological conditions;
- the population can be distributed arbitrarily and anywhere on the plane.

Leonelli *et al.*, (2000) developed a route optimization model using mathematical programming to calculate the optimal routes. The optimization problem is presented as a single objective minimum cost-flow problem, where the objective is to minimize the total cost over the route.

To avoid the increase of uncertainty in calculation of optimal route for HazMat transport, Bonvicini *et al.*, (1998) proposed in their research study the reduction of the uncertainty in the estimation of the probability values later to be used in the calculation of individual and societal risk by means of fuzzy logic.

Frank *et al.*, (2000) developed a spatial decision support system (SDSS) for route selection for HazMat transport.

The paper illustrates a methodology that integrates different risk and economic factors in a route transport optimization problem, in particular we propose an original decisional tool for every decision maker (public and private) for the environmental risk management of hazardous materials transport.

2. LOGISTIC IN MODELS OF TERRITORIAL DEVELOPMENT

The set of instruments for the logistic analysis can be considered as a strategic factor of territorial development policies, with particular reference to the processes of spatial localization of economic activities and light and heavy infrastructural facilities, as well as to compensatory manufacturing-distribution processes and of flows and markets regulation.

These instruments are new conditions to obtain the optimum, as "*min-max*" à la Thore (1991).

The interest in the localization effects of development returned to the attention with the emergence of the models "downtown-environs", reinterpreted by Krugman (1991). Hence, the consideration of the factor "space" as a production factor of economic activities is not a new fact: after the analysis of the Marshall district systems (1890), the space developments of the theory are mainly related to the German school, with contributions of Christaller (1933) and

Losch (1940), that resumed the concepts of neoclassical theory to apply them to the geographical distribution of economic activities.

Then, the concept of convergence between countries and regions is transformed, in absence of friction, in a space convergence, that it has as results the reduction of territorial disparities.

In the fifties of the last century, localization models of development, different from the neoclassical, were established, where starts to spread the principle of “cumulative causality”: the firms are located where there are already other productive activities, in order to benefit from the reduced costs resulting from the proximity of the markets for sourcing and selling.

In this case, the presence of increasing returns of scale conduce the aggregation of firms and workers in the area, causing a situation of “spatial polarization”(Harris, 1954; Pred, 1966).

This model, in its equilibrium configuration, does not determine harmonious development in space.

Finally, the presence of location advantages is the basis of New Geography Economic theories, that puts together the aspects of localization and those of the productive activities development, in order to show the concentration or the migration of economic activities and of production activities inputs from and in determine geographic areas.

Some concentration factors were added in literature, often as externalities, such as technological spillovers, the access to a labor market more articulated, and the access to a richer market of productive inputs.

Then, the progress in the transport sector and the technology advances have made it possible to overcome many natural constraints on the production activities location.

In particular, making technically and economically viable the transfer of raw materials, semi-finished, products very heavy, congested or perishable items on ever greater distances, in ever shorter time and in more and more relevant to each trip in terms of integrity increasing, the evolution of techniques in the field of transport have had on the spatial dimension of economic activities impact that has not equals, allowing to the areas that do not produce certain goods to dispose of them equally (Marchese, 1996).

3. MODELS OF LOCALIZATION INVARIANCE BASED ON LOGISTIC RATE

The transport of goods performs a function much more complex than in the past, because it is not limited to a simple transfer of good from one place to another, from producer to consumer, but it is an integral and strategic factor in the economy of the logistics-productive and distributive chain.

The costs of transportation are linked by an interdependent relationship with the production and distribution decisions, because the costs of production and distribution of the firms are connected with:

- the choice of concentration of the production and/or distribution plants in order to obtain economies of scale in production and/or in storage activities, that imply, however, the higher costs of transport in various markets, but at the same time increased productivity of the primary transport processes as a result of an increased rate of filling of vehicles and of loading unit (lower disturbances);
- the choice of vertical integration or vertical disintegration of the different stages of the production and/or distribution process, that it allows to take advantage of

specialization economies, that have a particularly strong effect on transport costs of semi-finished products;

- the choice of processing and/or storage/distribution of the same products in all plants or to differentiate the products of individual plants, if there is an opportunity to segment the market demand: this leads higher transportation costs if the markets are geographically distributed;
- the choice of processing and/or storage/distribution of different products in the same plant that implies an increase in transport costs if the markets of individual products are mutually different and distant, or to produce and/or to storage/distribute different products in different plants, especially if the corresponding demand is differentiated to geographical scale.

Therefore, there is a link between transport costs and production and distribution costs and even the same income of firms, if the transportation cost is for customer (Cappellin, 1998).

Moreover, the production and the storage may be considered as transactions that are closely integrated if some characteristics of the product can be modified through appropriate manipulations, such as assemblies and change of labels or other characteristics in a logistics platform.

In these cases it is necessary to determine if to postpone some terminal stages of production, after the products have been received from the manufacturing to the point of storage to forward them in to their markets.

In this case, it will be necessary to find the right balance between the costs of production, of storage and transportation and the risks of losses due to sudden changes in demand.

The *principle of invariance* of the economic logistics has the purpose of measuring and highlight the differential cost between different localization solution of production's factors that results from a process more or less intensive of logistics growth, that are aimed to increase the competitiveness of goods.

In particular, the relative convenience to the productive position in a given geographical area can be assessed by comparing of the *logistic rate* of various hypotheses concerning different locations.

We consider, for example, the case of the choice between two alternative locations (K_1 and K_2) to produce an intermediate good, that will be transported in a third area (K_3), further processed and transformed into a finished product (Y_3) for final sale.

In this case, it is assumed that it is possible to obtain Y_3 in an alternative way from a logisticization of the intermediate product X_1 or the intermediate product X_2 , obtained respectively in K_1 and K_2 .

For simplicity, it is assumed that the cost of production C_1 of the good X_1 is equal at the cost of production C_2 of good X_2 .

Then:

$$C_1 = C_2$$

Moreover, it also assumes that the generalized cost of transport from K_1 to K_3 is greater than that which should be supported from K_2 to K_3 , i.e.

$$C.G.T._{(K_1-K_3)} > C.G.T._{(K_2-K_3)}$$

As result we have:

$$C_1 + C.G.T._{(K_1-K_3)} > C_2 + C.G.T._{(K_2-K_3)}$$

The *principle of invariance*, in term of *total cost* (production and logistics, and including transport), between the two alternative locations comes in if in only one of locations, i.e. K_2 , is carried out not only the process of production of the good X_2 , but also a whole series of activities such as the storage, quality control and distribution to K_3 by a provider of logistics services for third parties.

In a situation of equilibrium of the total costs between two locations, will be the *logistic rate* (L), that expresses the percentage of the overall transportation costs and other logistics activities on the total cost of intermediate products, to ensure that in the presence of logistical processes can be:

$$C_1(1 + L_{1-3}) = C_2(1 + L_{2-3})$$

In this case, L is a constant in the location K_1 and K_2 , with particular reference to their economic position in relation of location K_3 .

We want to formalize the concept of *logistic rate*, and we obtain:

$$L_{1-3} = (C.G.A._{(K_1-K_3)}/C_1) + (C.G.T._{(K_1-K_3)}/C_1)$$

$$L_{2-3} = (C.G.A._{(K_2-K_3)}/C_2) + (C.G.T._{(K_2-K_3)}/C_2)$$

In particular, $C.G.A._{(K_1-K_3)}$ and $C.G.A._{(K_2-K_3)}$ are the generalized cost of other logistics activities excluding the transport respectively in locations K_1 and K_2 .

On based of these assumptions, to obtain a situation of *invariance* by the point of view of the costs supported in the two alternate localizations is necessary that:

$$C.G.A._{(K_2-K_3)} = C.G.T._{(K_1-K_3)} - C.G.T._{(K_2-K_3)}$$

In this point, in the localization K_3 will be occur to develop a greater number of logistics activities of *quasi-manufacturing* for the product X_1 compared to those required for the product X_2 , to complete the production cycle and to obtain the good X_3 to sell at consumers.

Then, respect to a total cost *invariance* of goods that arrive from K_1 and K_2 , the most logistizate product, that is X_2 , is more competitive in the complex economy of *supply chain*, causing a variance in favor of K_2 .

Another hypothesis of “*invariance-variance*” could relate the case of two goods (X_1 and X_2) that are produced at different costs in two alternative locations (K_1 and K_2), but that, thanks to the action of the *logistic rate* resulting in complementary activities to the production process developed in a more or less intense in two localization, received in K_3 with the same cost for the firm.

In order that a situation of indifference localization between K_1 and K_2 , must be verified by the following equilibrium condition:

$$\begin{aligned} (C_1 + C.G.A._{(K_1-K_3)} + C.G.T._{(K_1-K_3)}) &= \\ &= (C_2 + C.G.A._{(K_2-K_3)} + C.G.T._{(K_2-K_3)}) \end{aligned}$$

The analysis model of *invariance*, based on the logistic rate should always be interpreted considering the possibility to replace the cost of transport services with the cost of other logistics services.

This possibility is supported by the current trends related to the methodology of production and distribution based on *just in time*, then on trivialization of transport prices. (Forte, 2003; Iannone, 2005).

Concerning *just in time*, we could imagine to use this method of operation from one of the two alternative locations, for example K_2 , for deliveries of the intermediate product to K_3 .

In this case, we will have more frequent deliveries in small quantities respect to deliveries from K_1 to K_3 (that, for hypothesis, are in larger quantities and at full load).

It is assumed that the goods X_1 and X_2 suffer only one type of manufacturing process in their respective locations and at the same cost ($C_1 = C_2$); then, the additional processing (*quasi-manufacturing*) are made in K_3 .

The average total cost of these, is equal to $C.G.A._{(K1-K3)}$ and $C.G.A._{(K2-K3)}$ respectively for each of the two types of intermediate products.

It is hypothesized that to obtain n unit of finished/final product Y_3 , takes h units of semi-finished X_1 , or h units of semi-finished X_2 .

It's possible to indicate the average total cost of n unit of Y_3 with:

$$C_3 = C_1 + C.G.T._{(K1-K3)} + C.G.A._{(X1-K3)}$$

$$C_3 = C_2 + C.G.T._{(K2-K3)} + C.G.A._{(X2-K3)}$$

To formalize the consequences of the process *just in time* relative at type of product X_2 and considering different activities and logistic cost necessary to obtain Y_3 , respectively from X_1 and X_2 , we have:

$$C.G.A._{(X1-K3)} = C.G.M._{(X1-K3)} + C.G.Q._{(X1-Y3-K3)}$$

With:

$C.G.M._{(X1-K3)}$ = average generalized cost of storage of h units of good X_1 in localization K_3 .

$C.G.Q._{(X1-Y3-K3)}$ = average generalized cost of *quasi-manufacturing* activities of h units of good X_1 and of storage/distribution of n units of final/finished product Y_3 .

If the location chose is K_2 we assume a system of split deliveries to K_3 and, then, a division of h units of intermediate product X_2 , i.e., in d batch of b unit of good for everyone. In this case, we not have business storage of X_2 in K_3 , but only *quasi-manufacturing* activities of X_2 , then, of storage/distribution of the good Y_3 .

And, from here, we have that:

$$C_3 = C_2 + [(h/b)*G.G.T._{(K2-K3)}] + C.G.Q._{(X2-Y3-K3)}$$

where it is assumed the generalized cost of transport as independent from the weight/distance.

Moreover, we assume that the generalized cost of the *quasi-manufacturing* activities in K_3 for each unit of intermediate product is equal for X_1 and X_2 . In this case, we obtain:

$$C.G.Q._{(X1-Y3-K3)} = C.G.Q._{(X2-Y3-K3)}$$

To compute a *situation of localization invariance* between K_1 and K_2 , we must be demonstrated the following equality:

$$C.T.G._{(K1-K3)} + C.G.M._{(X1-K3)} = (h/b)*C.T.G._{(K2-K3)}$$

At the end, all firm can choose to bear the costs of transport and other logistics activities according their preferences, to obtain many location choices.

This depend to existence of an organization of network logistics services that connects the supply areas with production and consumption areas and that it is carefully designed, to exploit in the best way the different models of transport.

The structural framework that links the dynamic phase of logistic processes centered on flows with phase static vertical localized activity represented, the starting point, most suitable of the logistics approach to balance problems and government of flows (*invariance principle*).

Is possible to carry out an economic analysis of logistics processes at the space-time using either separately or simultaneously the four principles-tool of logistic: *invariance, transversality, compensation and auto-regulation*.

In reference to the transversality we can say that it becomes synonymous of “intermodality”, in the sense of substituting for unimodal routes, for example, an all-road or an all-sea (understood as dominant segment of a transport process door to door), multimodal routes more balanced in the individual segments, in order to allow the flow to be able to fully perform in an efficient and effective.

This integration will generate multiplier effects in investment and generating public and private income, especially with regard to the interchange nodes modal where, in an optical *hub and spoke*, will be concentrated flows of goods, transportation and unit of load standardized.

Therefore it is necessary that new approaches to planning and public transport dimprenditoriale be construed as planning of flow routes cross, in which the design of a line becomes the major part of the planning process, while the application is integrated with an offer adequate infrastructure, giving the concept of flow supply and demand.

In this sense, the trasversality is object of greatest interest in the context of transport schemes road-sea, rail-sea, etc. where the principal effect is to subtract flow to model all-road.

Moreover, the complexity in the management of transport consist by differences in the physical characteristics of the objects to be moved: weight, dimensions fragility, value, perishable, hazardous, environmental impact in the event of leakage.

All these factors cause real challenges of managerial skills, that we can be summarized in:

- Saturation of freight capacity,
- Optimization of modal operation (train, ship, plan, truck),
- Standardization of freight units,
- Rationalization of logistics processes,
- Development of performance of efficiency service,
- Safety and risk analysis during transport.

In particular, we propose to offer the assessment of the transport risk, in order to identify possible alternative routes and choose among these the route of minimum risk. It is necessary to appropriately integrate risk analysis with planning and transport management to prevent a potential danger being transformed into a real event. In the present study, we introduce a new decision model, calibrating weights for each choice criterion and each alternative proposed for different stakeholders. A comparison with the approach of a different model proposed by the author (Leonardi, 2008) is presented.

4. RISK ANALYSIS FOR THE TRANSPORT

In the planning of routes, in order to identify the route of minimal risk between O and D , it is necessary to identify the “risk factors” (hazard, vulnerability and exposure) which must be considered to achieve the objective. Risk can be defined as the expected consequences associated with a given activity. Considering an activity with only one event with potential consequences risk R is thus the probability that this event will occur (accident) P multiplied by the consequences given the event occurs C . For an activity with n events the risk is defined by:

$$R = \sum (P_i \cdot C_i^\alpha) \quad (1)$$

where P_i and C_i are the probability and consequence of event i , and where α is a weight factor of consequences (depending on social perception of gravity of the consequences).

Equation (1) can also be written as:

$$R = P \cdot V \cdot N \quad (2)$$

where C is defined as: $C = V \cdot N$.

V is the *vulnerability*, defined as the resistance of people, infrastructures, buildings and goods when the emergency occurs.

N is the *exposure* that can be defined as the elements (people, goods and infrastructures) affected during and after the event.

Considering equation (2) two types of measure for risk reduction may be defined:

- *prevention*, which consists of reducing the level of P ;
- *protection*, which consists of reducing the level of N .

5. THE SEQUENTIAL DECISION-MAKER PROCESS

The proposed model *estimates the risk of each route among those identified and chooses the route with minimal risk based on a set of criteria (goals) and their weights for each alternatives.*

Risk analysis of different alternatives to achieve the elimination of unacceptable alternatives and to find the route with minimal risk through Multi-Criteria Analysis (MCA).

The objectives that will be used as criteria in the route optimization model presented in this study are (Castillo, 2004 and Leonardi, 2008):

- *minimization of travel time,*
- *minimization of travel distance,*
- *minimization of risk for the population,*
- *minimization of risk for the urban environment,*
- *and minimization of risk related to a natural hazard.*

The objectives are not fixed; they reflect the interests of the stakeholders involved in the decision-making process. However, in order to give an understandable explanation of the proposed method, each of these objectives will be described below:

Travel Distance

In order to reduce costs, private or public companies in charge of HazMat transportation often use the shortest routes available.

The travel distance is simply the length of each arc. The total travel distance is the sum of length values of every arc in the route.

$$d_{route} = \sum_{arc \in route} l_{arc}$$

l_{arc} = length of each arc.

Travel Time

The travel time for each arc can be estimated by dividing the length of the arc by the arc average speed. Impedance time values can be added to represent average waiting time at road intersections. The route travel time will be:

$$t_{route} = \sum_{arc \in route} [(l_{arc} \times \bar{v}_{arc}) + t_{arc}]$$

where: \bar{v} = average speed for each arc; t_{arc} = average waiting time at arc intersection.

Risk for the population

According to Zografos and Androutsopoulos (2004), the risk for the population in relation to a HazMat transport accident is defined as the product of the probability of the HazMat transport accident and the exposed population.

$$ap_{arc} = ar_{arc} \times hp$$

where: ap_{arc} = accident probability on each arc involving a HazMat transport; ar_{arc} = accident rate for each arc in the transport network; hp = probability for HazMat transport unit to be involve in an accident.

The population exposed to the hazard is the sum of the on-route and off-route population.

$$p(ex)_{arc} = p_{on} + p_{off}$$

The first is the population estimated to be travelling on the arcs that could be affected by the accident; this is the number of vehicles on the arc multiplied by the average number of persons per vehicle. The latter is the population situated within the impact area of the accident:

$$p(ex)_{arc} = \left(n_{vehicles} \times n_{\frac{person}{vehicle}} \right)_{arc} + pop_{arc}$$

where: $p(ex)_{arc}$ = number of persons exposed to an accident event along one arc; p_{on} & p_{off} = estimated population on and off-route for each arc; $n_{vehicles}$ = average number of vehicles travelling on one arc; $n_{\frac{person}{vehicle}}$ = average number of persons per vehicle; pop = number of persons situated within the impact area of the accident site.

The risk of the route will be given by the summation of the risk values of every arc in the route. This risk measure will indicate the number of persons expected to be injured or to die in case of a accident occurring:

$$Rpop_{route} = \sum_{arc \in route} (ar_{arc} \times hp \times p(ex)_{arc})$$

Risk for the urban environment

The probability of fire occurring once a transport accident has taken place can be estimated by multiplying the fire probability and the probability of a transport accident (which has been already defined in the previous phase).

To estimate building vulnerability in case of fire, the predominant building material type per arc is considered. For areas with a predominant type of building material of reinforced concrete, a low building vulnerability value will be assigned, whereas the areas where wood is the predominant building material type will have a higher building vulnerability assigned. The specific risk for the urban environment will be the result of multiplying HazMat accident probability, fire probability, and estimated building vulnerability in relation to fire:

$$Rurb_{route} = \sum_{arc \in route} (ar_{arc} \times hp \times fp) \times bv_{arc}$$

where: $Rurb_{route}$ - relative risk value estimated to represent the degree of urban damage along the route produced in case of fire triggered by transport accident; fp = fire probability; bv_{arc} = building vulnerability in relation to fire assigned to each arc.

Risk related to a natural hazard

If HazMats are being transported through a city, route selection should also consider building vulnerability to the natural hazard.

For example in the case of earthquake, or in case of flood the amount of debris produced by the collapse of buildings during the earthquake or flood event increases the hazard of an accident occurring, or a damage to the dangerous buildings (for example nuclear plant).

The value assigned to each arc can be labelled as earthquake-building risk score, making reference to the fact that the natural hazard considered is related to an earthquake and the vulnerability is based on buildings. The route optimization equation will then be:

$$Rb_{route} = \sum_{arc \in route} Rb_{arc}$$

where: Rb_{route} = qualitative risk measure of the amount of expected building damage in case of an earthquake along the route; Rb_{arc} = earthquake-building specific risk score assigned to each arc.

6. THEORETICAL METHODOLOGY FOR DECISION MAKERS

Now we have to define an opportune scale of measure upon which to measure the relative importance of each considered criterion (objectives). The methodology used is based on a complete comparison of the elements taken two at a time (a total of $m(m-1)/2$ comparisons for m elements).

Suppose that a decision-maker wishes to elicit the relative priorities, or weights of importance, of m entities, then he has to compare them two at a time and make a simple binary choice, selecting the objective more important between the two ones considered and after to assign a value between 1 to 9.

We can write the pairwise comparison matrix $[P]$ (square, reciprocal and positive) of dimension $m \times m$, whose elements p_{ij} , said *coefficients of dominance*, define the relative

importance of the attribute (i) with respect to the attribute (j) and have the following properties:

$$p_{ij} > 0 \quad p_{ij} \times p_{jk} = p_{ik} \\ p_{ii} = 1, \quad p_{ji} = \frac{1}{p_{ij}} \quad \forall i \quad P = \begin{pmatrix} p_{11} & \cdots & p_{1m} \\ \vdots & \ddots & \vdots \\ p_{m1} & \cdots & p_{mm} \end{pmatrix}$$

The matrix $[P]$ can be also represented in function of the weights $w_1 a_k, w_2 a_k, \dots, w_m a_k$ of the single elements, and alternative determining the coefficient of dominance of every couple as the ratio of the respective weights, that is: $p_{ij} a_k = w_i a_k / w_j a_k$.

Therefore, it is easy to prove that the following matrix relation is verified:

$$[P] \times \bar{W} = m \cdot \bar{W} \quad (3)$$

where:

$$\bar{W} = [w_1 \quad w_2 \quad \cdots \quad w_m]^T,$$

and

$$\bar{W} a_k = [w_1 a_k \quad w_2 a_k \quad \cdots \quad w_m a_k]$$

Note that the matrix $[P]$ is a consistent one, or it satisfies the condition $p_{ji} = p_{ik} \cdot p_{kj}$ for all the values of i, j, k .

The relationship (3) expresses algebraically the fact that \bar{W} is an *eigenvector* of $[P]$ with *eigenvalue* m .

It is not possible to determine the values p_{ij} as w_i/w_j , in fact w_i and w_j are unknown. To evaluate the “weight” of a set of attributes it is necessary to rely on the judgements of one or more experts. Not having measuring instruments but only his personal experience, the expert is not able to determine directly the weights w , but he can only give some approximate valuations of their ratio with the aid of the semantic scale or with the rating technique. Therefore, the matrix $[P]$ given by the expert decision-maker, in the majority of cases, is not consistent. In this case, to determine the weights w it is necessary to make some simple considerations.

1. If, $\lambda_1, \lambda_2, \dots, \lambda_m$ are m numbers that satisfy the equation:

$$[P] \cdot x = \lambda \cdot x \quad (4)$$

(that is, they are the eigenvalues of $[P]$) and if for every values of i is $p_{ij} = 1$, then:

$$\sum \lambda_i = m \quad (i = 1, \dots, m) \quad (5)$$

1. If (4) is valid, all the eigenvalues are necessarily equal to zero except one, that is equal to m . According to this, when $[P]$ is a consistent matrix m is its maximum eigenvalue (or *right principal eigenvalue*) and it is the only one to be different from zero.

2. If the values of p_{ij} of a reciprocal and positive matrix are slightly modified, the corresponding values of the eigenvectors change a little, slightly and in a continuous way.

Combining the preceding results we can deduce that when the elements of the principal diagonal of the matrix $[P]$ are all equal to 1 and the matrix is consistent, shifting slightly the

values p_{ij} the principal eigenvalue λ_{max} of the matrix assumes a value that doesn't change much from m , while the residual eigenvalues stay near to zero. Then, to resolve the problem it will be sufficient to determine the vector that satisfies equation:

$$[\mathbf{P}] \times \vec{W} = \lambda_{max} \cdot \vec{W} \quad (6)$$

in other words it will be sufficient to determine the principal eigenvector corresponding to the eigenvalue λ_{max} of the matrix $[\mathbf{P}]$.

There is still the problem of establishing if the weights that are obtained with (6) represent the view of those who made the pairwise comparisons. In other terms it is necessary to establish if and in what measure the values of the fractions w_i/w_j , calculated after having determined the principal eigenvector, are different from the estimate values p_{ij} given by the expert. To this aim we define an index of consistence (CI, *consistency index*) and a percentage of consistence (CR, *consistency ratio*), that allow us to measure the difference between these two set of values:

$$CI = \frac{\lambda_{max} - m}{m - 1} \quad (7)$$

$$CR = CI \times RCI \quad (8)$$

where the index RCI (*random consistency index*) is calculated making the average of the CI of numerous mutual matrixes of the same order, whose coefficients are randomly produced by a computer. The different values of RCI in function of m are proposed in the following table:

m	1	2	3	4	5	6	7	8	9	10
RCI	0,0	0,0	0,58	0,9	1,12	1,24	1,32	1,41	1,45	1,49

It is evident that in the case of perfect consistence CI is equal to 0, in fact, when the matrix is perfectly consistent (4) coincides with (3) and the principal eigenvalue λ_{max} is equal to m . If the value of the CR index is smaller than 0.1 the matrix $[\mathbf{P}]$ compiled by the expert is acceptable, if $CR > 0.1$ the difference from the condition of perfect consistence is judged unacceptable, in this case the expert has to try hard to increase the coherence of his judgments modifying, totally or in part, the values p_{ij} .

Once determined the vector of the weights \vec{w} can be normalized so we have:

$$\sum_{j=1}^m w_j = 1$$

For a comparison of alternatives, the different performances, assessed in function of the criteria considered, must be appropriately normalized:

$$r_i = \frac{x_i(j)}{\sum_{\text{column } j} x_i(j)}$$

so we have the following normalized evaluation matrix:

	Criterion 1	...	Criterion m
Alternative 1	$R_1(1)$...	$R_m(1)$
\vdots	\vdots	\vdots	\vdots
Alternative k	$R_1(k)$...	$R_m(k)$

The performance of each alternative k is represented by the weighted sum of its individual performance.

$$v(k) = r_1(k)^{-w_1 a_1} + \dots + r_m(k)^{-w_m a_m}$$

In (10) the weights are introduced as negative exponent.

So, it is possible to sort the global performance of alternatives finding the one with minimum risk.

The best alternative, denoted with A^* , can be determined as:

$$A^* = \arg \left\{ \max_{a_i \in A} (v_i) \right\}$$

7. CONCLUSIONS

The problems related to the transport have been addressed by policy makers in the light of three aspects: infrastructure, normative and environmental. By the end of the 1990s logistics was at the top of the rise of the policy maker's agenda, entering fully in the field of transport planning. In the logistics sector the problem of public regulation is where exist the so-called "failures of market", as in the case of natural monopolies or of external diseconomies caused by logistics – transportation activities. Analysis tools of logistics can be viewed as conditions for the development of logistics and transport infrastructures that serve to support the deployment of innovative production and distribution processes in local and global scales. The application of the principles of *invariance*, *transversality*, *compensation* and *auto-regulation* will encourage a new organization and planning of territorial systems through precise actions of drawings of knots, transport axes and of graticule areas for production systems, in order to achieve local and extra-local connections strategic in nature based on different aspects of transport infrastructure and intermodal services, manufacturing and service production, processing, distribution and sale of goods.

The paper illustrates a methodology that integrates different risk and economic factors in a route transport optimization problem. In order to be able to evaluate routes a Multiple-Attribute approach was proposed. The model proposed concurs to determine an ordering of the different solutions giving a concrete tool to support decisions (DSS). In this approach we wanted to do a major importance at the weights of the considered criteria. Also, the model can be easily customized to other case studies and adapted to different routing problems. The model, integrated, for the calculation of the criteria, the probability of occurrence of certain random events, graph theory for the measurement of distances, then a set of mathematical tools, such as eigenvalues and eigenvectors of matrices that enable the adjustment of the weights on criteria, which are obviously taken by a decision-maker and layman who does not know mathematics, so the use of eigenvalues allows the decision maker to choose the weight based on subjective parameters, political or business, and these are automatically parameters adjusted using the calculation. After entering criteria parameters, we will be faced with a matrix of weights normalized by the eigenvalues, which after being controlled through the

index of consistency and coherence based on the specified weights, allow to calculate the best alternative.

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