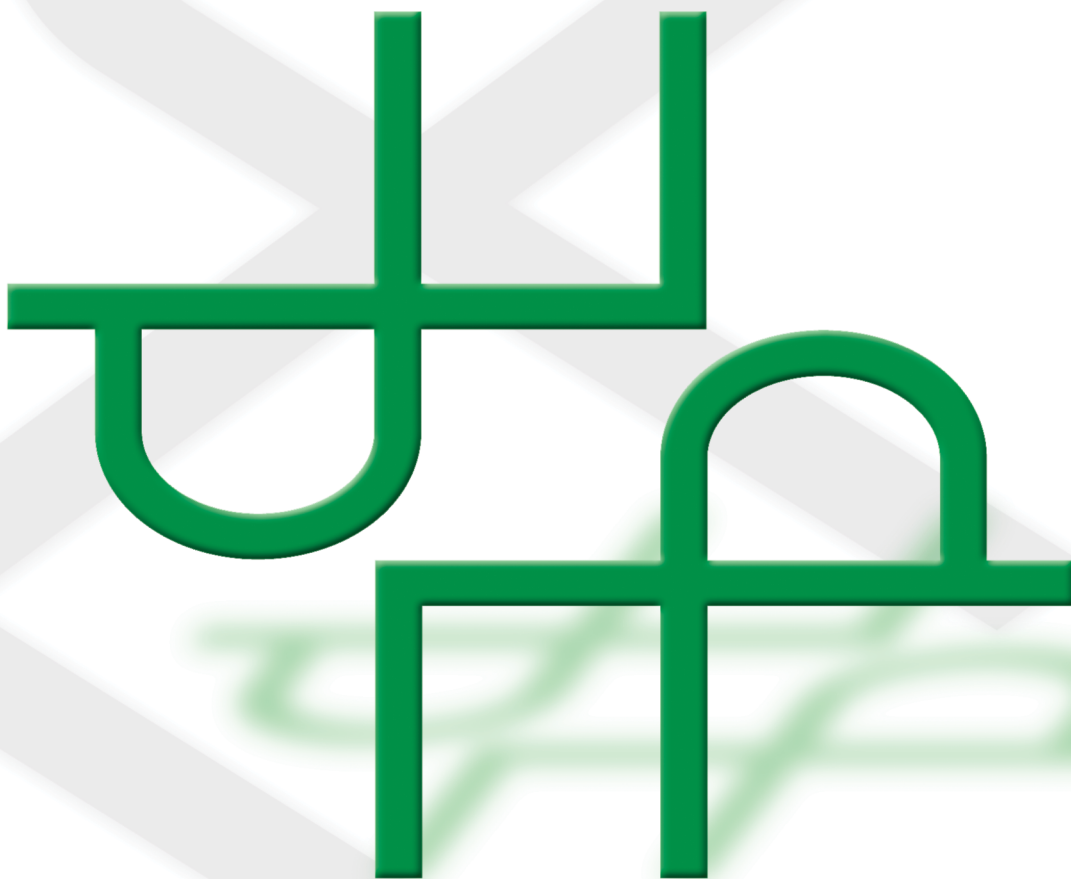


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4





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2. Часопис су покренули Друштво економиста Ниша и Друштво инжењера и техничара Ниша (остало као издавач до краја 1964. године). Удружење књиговођа постаје издавач почев од броја 6-7/1958. године. Економски факултет у Нишу на основу своје одлуке броја 04-2021 од 26.12.1991. године постао је суиздавач “Економике”. Такође и Економски факултет у Приштини постао је суиздавач од 1992. године. Почев од 1992. године суиздавач “Економике” је и Друштво за маркетинг региона Ниш. Као суиздавач “Економике” фигурирали су у току 1990-1996. године и Фонд за научни рад општине Ниш, Завод за просторно и урбанистичко планирање Ниш и Корпорација Винер Брокер Ниш.

3. Републички секретариат за информације СР Србије својим Решењем бр. 651-126/73-02 од 27. новембра 1974. године усвојио је захтев “Економике” за упис у Регистар новина. Скупштина Друштва економиста Ниша на седници од 24. априла 1990. године статутарном одлуком потврдила је да “Економика” има статус правног лица. На седници Скупштине Друштва економиста Ниш од 11. новембра 1999. године донета је одлука да “Економика” отвори посебан жиро-рачун.

4. Према Мишљењу Републичког секретариата за културу СР Србије бр. 413-516/73-02 од 10. јула 1973. године и Министарства за науку и технологију Републике Србије бр. 541-03-363/94-02 од 30. јуна 1994. године “Економика” има статус научног и ранг националног часописа “Економика” је поћев од 1995. добила статус међународног економског часописа.

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2. The Journal was initiated by the Society of Economists of Nis and the Society of Engineers and Technicians of Nis (the latter remained as the publisher till the end of 1964). The Society of Accountants became its publisher starting from the issue no. 6-7/1958. The Faculty of Economics, Nis, on the basis of its Resolution No. 04-2021 from December 26, 1991, became the co-publisher of EKONOMIKA. Likewise, the Faculty of Economics of Pristina became the co-publisher since in 1992. Starting from 1992, the co-publisher of EKONOMIKA has been the Society for Marketing of the Region of Nis. Other co-publishers of EKONOMIKA included, in the period 1990-1996, the Foundation for Scientific Work of the Municipality of Nis, the Institute for Spatial and Urban Planning of Nis and the Corporation Winner Broker, Nis.

3. The Republic Secretariat for Information of the Socialist Republic of Serbia, by its Resolution No. 651-126/73-02 from November, 27, 1974, approved of EKONOMIKA's requirement to be introduced into the Press Register. The Assembly of the Society of Economists of Nis, at its session on April 24, 1990, by its statutory resolution, confirmed the legal status of EKONOMIKA. At the session of the Assembly of the Society of Economists, Nis, on November 11, 1999, the resolution was adopted the EKONOMIKA was to open its own bank account.

4. According to the Opinion of the Republic Secretariat for Culture of the Socialist Republic of Serbia No. 413-516/73-02 from July 10, 1973 and the Ministry for Science and Technology of the Republic of Serbia No. 541-03-363/94-02 from June 30, 1994, EKONOMIKA has the status of a scientific and national journal. Starting from 1995, EKONOMIKA has been having the status of international economic journal.

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MODELS OF IRRATIONAL BEHAVIOUR OF HOUSEHOLD AND FIRM

Abstract

To study the basic characteristics of impulsive household, economists use probabilistic different models, These models are stylized and lack many details. Despite the fact that these models lack realism, studying these models will enable economists to see what is really important for them. For example, increasing the relative price of commodity X decrease the consumption of commodity X. The model of irrational household behaviour indicates that the irrational economic subjects will be forced to behave as-if-rational, i.e. that their behaviour is consistent with the fundamental theorem of rationality of traditional economic science that states: demand curve of rational household have a negative slope. Also, The model of irrational household behaviour indicates that a large number of independent impulsive households gravitate toward the point p, which represents the best of choice. This theory is true for irrational firms.

Key words: the model of irrational household, the model of irrational firm, the fundamental theorem of rationality, demand curve, the best choice.

JEL classification: A1, D1

МОДЕЛИ ИРАЦИОНАЛНОГ ПОНАШАЊА ДОМАЋИНСТВА И ФИРМЕ³

Апстракт

Да би економисти изучили основне појединости импулсивног домаћинства користе различите моделе. Ти модели су стилизовани и недостаје им мноштво детаља. Упркос мањку реалистичности, проучавање оваквих модела омогућиће економистима да виде оно што је за њих заиста важно. На пример, повећање релативне цене производа X, смањује потрошњу истог. Модел понашања ирационалног домаћинства, према томе, показује да ће ирационални привредни субјекат бити присиљен да се понаша

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као рационалан, односно да је његово понашање у духу фундаменталне теореме рационалности традиционалне економске науке која гласи: крива тражње рационалног домаћинства има увек негативан нагиб. Поред тога, модел понашања ирационалног домаћинства указује да већина независних импулсивних домаћинстава гравитира ка тачки n која представља најбољи избор. Ова теорија важи и за ирационалне фирме.

Кључне речи: модел ирационалног домаћинства, модел ирационалне фирме, фундаментална теорема рационалности, крива тражње, најпожељнији избор.

Introduction

Economic theory is inhabited by a specific type of organism, which we sometimes call *homo economicus*. Members of the species are always rational. As the managers, they maximize profit, as consumers they maximize their utility or equivalently, they choose the point on the highest indifference curve. In addition to the constraints they are faced with, participants rationally measure all the costs and benefits and they always choose the best possible course of action (Menkju, 2007).

The actual people are, however, *homo sapiens*. Although they largely resemble to rational, calculating people who are assumption of economic theory, they are away from more complex creatures. They can be “forgetful”, “sudden”, “confused”, “emotional” and “myopic”. These deficiencies in human reasoning represent the most important topics of psychologists’ studies which economists had ignored until recently (Menkju, 2007).

Herbert Simon, one of the first psychologists who studied the border areas of economics and psychology, proposed that firms and households cannot be observed as rational actors who maximize their utility, but as subjects who satisfy their needs and desires. Simon refuses the maximization hypothesis, but retains the rationality assumption. Actors cannot get all the necessary information and to process them, but they can still make rational decisions within a limited set of alternatives. Thus, firms and households are not characterized by “maximizing” but “satisficing” behaviour (Krstić & Krstić, 2015).

The aim of the paper is to explain when we can expect from an irrational economic entity (firms and households) to be forced to behave rationally, or “as if” its decisions were rational, instead of impulsive, for instance. In this paper, we will discuss the characteristics of the model of irrational household behaviour. Furthermore, we will present the model of irrational firm behaviour.

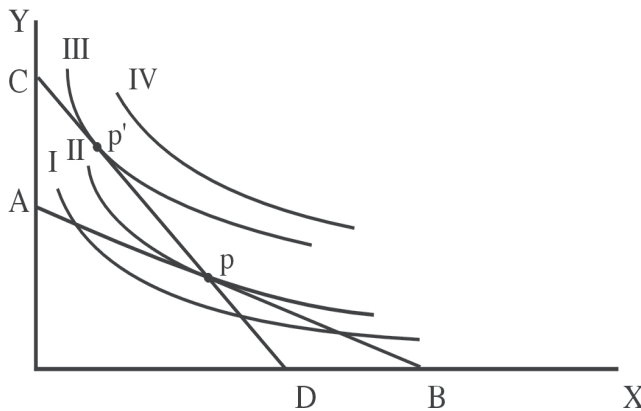
The model of irrational household behaviour

Herbert Simon, Richard Curt and James Marcus have proved that firms and consumers do not behave in a “maximizing”, but “satisficing” fashion (Simon, 1991; Marcus, 2004; Robles, 2007). Firms and households tend to realize a particular acceptable minimum (Simon, 1982). “Satisficing strategies” can often be effective. However, this strategy gives good results if we adequately collect and process information (Simon, 1961). From Geoffrey Hodgson’s perspective, the key source of satisficing behaviour

is not located in the deficit of information (the missing information) or the institutional constraints, but the main source of satisficing behaviour is located in the excess of information in relation to the power of capacity of rationality (Hodgson, 2012). If the members of the household have the imperfect mental abilities and the decision-making process takes place in complex and changing environment, the ability to adapt to change is relevant criterion of rationality. In this case, routines, habits and informal rules have an important role in the behaviour of household (Hodgson, 2016).

To gain an understanding of the model of satisficing household behaviour, it is necessary to firstly considered models of maximizing action. The model of maximizing action is based on the postulate which states: the behaviour of can be described by saying that household always chooses the combination that maximizes its utility or satisfaction, between all collections of goods that it can buy (Varijan, 2014). Figure 1 shows the diagram with a price for commodity Y on the vertical axis and a price for commodity X on the horizontal axis. By using this diagram, we can determine the best choice household.

Figure 1: Model of maximizing action



Source: Becker, G., 2009). *Irrational Behaviour and Economic Theory*, Chicago Journal, Chicago p. 3

The line AB is a budget constraint and surface OAB is the consumption opportunity set (set of available combinations of X and Y). Indifference curve (which connects the different collection of goods with the equal utility) shows the internal preferences of household's members (Labus 2003). The household realises the best choice at the point p , i.e on the intersection between the budget line AB and indifference curve ii (Becker, 2009).

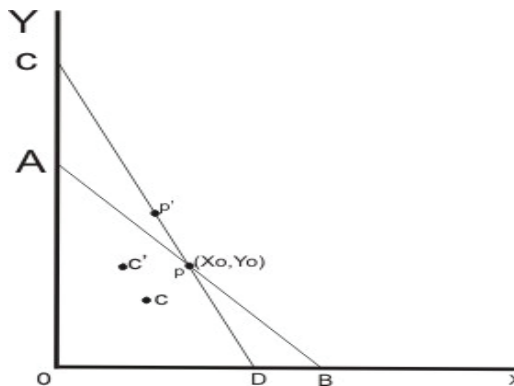
In this collectivist-based model, with a shift of the budget line from AB to CD , the price of commodity X is increased. According to the usual analysis of supply and demand, the price of commodity Y is fallen. The optimal choice shifts from point p to point p' . This change indicates that household increases consumption of commodity Y on account (of) consumption of the commodity X . If the fundamental theorem of traditional economics science - the demand curve has always a negative slope, if a large number of factors that influence on consumer decisions, except price, remain unchanged – is true, reducing the price of commodity Y decreases demand for the commodity X (Becker, 2009).

Studying the amount of income that households spend on any kind of quantity of commodities is based on some the theorems of traditional economic science. For

example, “decrease in real income necessarily decreases the amount spent on at least one commodity, and the average present age change in expenditure on all commodities must equal the percentage decrease in income” (Becker, 2009 (1962), 4). These theorems are largely independent of the decision rule. This will ease the modelling of behaviour and solving real economic problems of household (Гилбоа et al., 2015).

In Figure 2, the relationship between a consumption and an available income (a budget constraints) is shown. The change in the budget line (people change their the budget line from AB to CD) would decrease consumption of commodity X and increase consumption of commodity Y . In this way, the opportunity set OCD is obtained. This opportunity set is limited by the budget line CD and it offers “more opportunity to consume Y , and less opportunity to consume X than does set OAB ” (Becker, 2009, 4). Since the point p represents the quantity of commodities X and Y (X_0 and Y_0), which would be chosen in the space (set) OAB by the particular decision rule, the surface OCD offers a smaller opportunity to consume more than X_0 of X , on the one hand, and the greater opportunity to consume more than Y_0 of Y , on the other hand. The application of the particular decision rule will ensure that households choose the quantity of commodity X to the left from the X_0 and the amount of commodity Y to the right from Y_0 within the consumption opportunity set OCD . This is perfectly consistent with the idea that the quantity is positively correlated with the total benefit.

Figure 2: Model of maximizing behaviour of household - the impact of relative prices on the equilibrium of a household



Source: Becker, G., 2009 (1962). *Irrational Behaviour and Economic Theory*, Chicago Journal, Chicagop. p.5

According to Becker, it does not matter whether a participant realized the maximum value of the goal function or not?, for analysis of rational behaviour, but it is important that the participant's behaviour is consistent with the fundamental theorem of rationality that states: demand curve for any commodity must be negatively inclined (Becker, 1957, p. 2-3). Becker recognizes that rational behaviour is not necessarily selfish behaviour. The altruistic (selflessly or irrational) behaviour can be classified as rational. As the negative slope of the demand curve is a demonstration that household acts rationally, we conclude that irrational household, which has a negative sloped demand curve will be rationally. Becker has identified two extreme types of irrational behaviour: impulsive and inert behaviour. Between these two extremes lies a wide spectrum of altruistic forms of action (Krstić & Krstić, 2015).

Impulsive behaviour is reduced to the random change of behaviour, and inert (routine) behaviour excludes any changes in behaviour (regardless of environmental conditions). To study the basic characteristics of impulsive behaviour, economists use probabilistic model, in which each solution is assigned a number from the interval from 0 to 1. Inert behaviour is represented by a model in which participants' decisions determined by the previous knowledge and experience (Becker, 2009). These models are stylized and lack many details. Despite the fact that these models lack realism, studying these models will enable economists to see what is really important for them (Гилбоа et al., 2015).

These models simplify irrational behaviour of a household. Thus, the fundamental theorem is related to the impulsive behaviour, at least in the case of a market with a large number of participants. In the model of irrational behaviour, impulsive household forms a negatively sloped demand curve. By increasing the relative price of commodity X , the structure of the budget space is changed at the expense of reducing the consumption of commodity X . Generally speaking, it can be expected that the irrational economic subjects will be forced to behave as-if rational, or as if its decisions are rational, and they are not, for example, impulsive.

The assumption is that the impulsive households behave according to pattern “as-if”. This means that the household's action does not depend on the utility function of a single member, but from a probability mechanism. In the model of impulsive behaviour, the number of completely inefficient households would assign equal probabilities all points in the opportunity set (including points in inside of the consumption opportunity set, regardless the fact that only the points on the budget line have probability of being selected). Although the consumption of household could not be determined in advance, the average consumption of a large number of independent impulsive households gravitates toward the middle of the budget line, which also represents the amount of expected consumption. When the consumption opportunities were initially limited to the budget line AB (Figure 2), the average consumption of households would be close to the point p that lies at the middle of the line AB , while other households uniformly distributed around the point p .

A changes in relative prices rotate the budget line AB around the point p . This point represents the consumption of household that contributes to the realization of the interests of the household, in the best way. The line CD shows a compensated increase in the price of commodity X , so now the household chooses a point on the line CD rather than (a point) on the line AB . A single household can choose any point on the line CD , but the average location of many independent impulsive households would almost certainly be somewhere at the middle, around the point p' on the budget line CD . It is clear that the point p' is not to left and above the p by accident: a compensated increase in the price of commodity X shifts the midpoint of the budget line to the left and upward, while a compensated decrease shifts it to the right and downward. Finally, Becker concludes that the fundamental theorem of the rational behaviour, that the demand curve is negatively inclined, takes into account impulsive behaviour. The expected demand curve of individual household also has a negative slope. The cause of the negative slope of both expected individual and actual market demand curves is price that influence on the distribution of total consumption.

Consider now a model of inertia in which the utility of the household in any period depends not only on consumption in this period, but also from previous spending (Krstić, 2013). The point p (Figure 2) again represents the average consumption of large groups of households that are faced with the budgetary constraints AB , while the budget constraint CD is the result a compensated increase in the price of the commodity X . Households, who

are initially distributed in the region Ap (Figure 2) do not change their budget constraint (in any period) after the price changes. Households, who are initially distributed in the half open region pB , change their the budget constraint after prices changed because the line pB would be outside the new opportunity set OCD . Clearly, households who are forced to adjustment are not accidentally just those whose consumption of commodity X is above the average: increasing price of commodity X changes the structure of the consumption opportunity set at the expense of reducing the consumption of the same. If the average household with the budget constraints pB , spends more commodity X than the line CD permits, then average consumption of commodity X is reduced. If the line Ap is not changed, households with the budget line pB reduce consumption of commodity X , since the line OD offers an opportunity to accomplish maximum consumption of commodity X with the budget constraint CD . In general, large changes in relative prices and the wide distribution of households increase the probability that, with the new the budget line, the maximum consumption of commodity X will be lower than the average consumption at the level of the pB line. Although the adjustment made by households on the pB line cannot be accurately illustrated, their consumption is likely to decrease.

In the model of irrational household, an actual choice is based on a prior behaviour and probability theory. The choices of impulsive and inert households caused the emergence of the average results (outcomes). Since these subjects tend to form negatively sloping demand curve, market demand curve of impulsive and inert households have a negative slope. Therefore, all forms of irrational behaviour reproduce the fundamental theorem of rational behaviour. Households, who tend to maximize the quantity of goods, have a negatively inclined compensated demand curve, as well as the consistent and transitive preference system. It is important to point out that the rationality of the market does not depend on the rational behaviour of individual actors. In other words, a market with a large number of irrational households will form a negative declining demand curve (market will be rational function) (Krstić & Krstić, 2015).

The behaviour of inert household in the market depends on both their dispersion and changes in market prices as well as the reactions of households which forced to adjust. If the price of X increases by 10 per cent and if households were uniformly distributed along the initial budget line subjects forced to adjust reduce the average consumption to the midpoint of the budget line, total demand is reduced by 30 per cent, and the value of elasticity of 3 (Becker, 2009 (1962)). A small change of price or larger dispersion would provide higher elasticity (of demand). In this regard, it is important to point out that a large group of erratic households can form a unitary elastic demand curve. With a shift the budget line from AB to the CD , inert households in Figure 2 shift from the boundary toward the interior of region Ap . Since a goods are precisely specified, households are located on the boundary of the region Ap , According to Becker, this is usually understood as an additional implication of rationality (Becker, 2009, 7).

This utility-maximizing households lie on the boundary of the opportunity set because they accomplish the maximum their utility in this way (as long as the marginal utility of at least one commodity was non-negative). “Even if expenditures were defined so that the total income had to be spent, irrational households might not consume the entire amount because some commodity might be lost, spoil or accumulate unused” (Becker, 2009, 9). In addition, inefficient impulsive households might assign equal probability to (the importance of) all points in the opportunity set, not just to those on the boundary. The average consumption of the largest number of such households would be at the centre of opportunity set, with households uniformly distributed around this point .

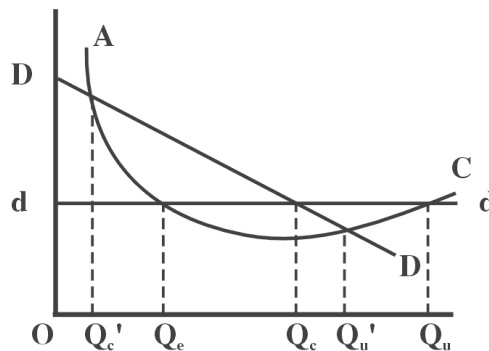
The model of irrational firm behaviour

To gain an understanding of the model of irrational firm behaviour, it is necessary to firstly consider the model of rational firm behaviour. The behaviour of a rational firm can be graphically illustrated by Figure 2. The graph looks like the graph in Figure 2, but with the isocost lines instead of the budget lines in the space between the abscissa and ordinate. An available quantity of commodity Y is illustrated in the ordinate, the available quantity of the commodity X is illustrated in the abscissa. The increasing price of the input X decreases the quantity of this input in the production process, with a given level of total costs. The isocost CD of the rational firm shows reducing the quantity of input X in relation to the isocost line AB . However, the “irrational companies” tend to react rationally to changes in input price. Thus, most of the “impulsive firms” would certainly be at the point p (Figure 2), when they faced with the isocost line AB , i.e. the p' , to the left and above the p , when they faced with the isocost line CD .

The traditional distinction between households and firms indicates that firms should not be subject to budgetary constraints if the assumption that the firm chooses the one mode and scope of action that will provide greater profits than any other possible choices is true (Becker, 2009, 11).

According to Becker, the great achievement of “survival” argument, improved by Alchian and his colleagues (Alchian 1950; Fridman, 1953), is not a demonstration that the firms will survive, if they maximize the profit, but a rather demonstration that the decisions of irrational firms are conditioned by a budget constraint. Really the “survival” argument is simply a special case of a general argument linking the behaviour of all economic subjects to the distribution their opportunities. Therefore, the firms that are unable to achieve continuous production cannot survive on the market and realize negative profits until the available resources are finally consumed. For the same reason, households cannot continually spend, and survive outside their capacities.

Figure 3: The model of behaviour of rational firm



Source: Becker, G., 2009 (1962). Irrational Behaviour and Economic Theory, Chicago Journal, Chicago, p. 11.

Since space, that is limited by the axes and the budget lines is known as the consumption opportunity set of household in the professional literature, the region of non-negative profit can be represented as the production opportunity set of the firm. For example, a household with the budget line AB has the consumption opportunity set OAB

(Figure 2), and a firm with the average cost curve AC and demand curve dd (Figure 3) has the production opportunity set $Q_e Q_u$. Just as a household makes decisions about amount of income, that it can spend, analysing all combinations of goods that it can buy (from their income and given prices), so a firm plans the output, taking into account the fact that invests no more than the realized profit (that is, it cannot live beyond its opportunity).

The entire amount would be spent at the output that yield (yielding) zeroes profits; nothing would be spent if profits were maximized; and a positive, but less than the total amount would be spent at the other available output. The traditional conclusion that firms are not the subjects to budget constraints is made valid when profits are maximized: nothing will be spent and so no budget constraints. If any other decision is conducted, something would be spent and will exert a budget constraint will exist. Changes in the cost or production conditions would change the production opportunity set, and force even irrational firms to respond systematically. Many variables influence on the production opportunity set? Regarding the difference between monopolistic and competitive phenomena, the authors stress a well-known theorem that is closely associated with maximizing behaviour, and even economists can be impressed by demonstrated a wide interval of irrational behaviour would reproduce this theorem.

Industrial costs would be the same as firm's costs in industries that have a lot of independent, identical firms, but the industrial demand would be more elastic than firm's demand. Therefore, the curve AC in Figure 3, can, represent both industry and firm average costs, DD industry and dd firm demand conditions. the line DD is drawing so firm achieves a balance at a price Od , and the output OQC , where the marginal cost equals price. If the industry becomes fully monopolistic cartel, then DD measures both industrial and firm demand, while dd would no longer be relevant. The famous old theorem says that if firm constantly maximizes profit, output member of the cartel would be less than OQC .

Completely impulsive firms would assign an equal probability to all available outputs and choose one of them randomly. Cartelization would shift the firm's demand curve to DD and shifts the opportunity set from $Q_e Q_q$ to $Q'_e Q'_u$. If the output were again selected randomly, firms would be uniformly distributed along $Q'_e Q'_u$ and the average output would almost certainly be at the midpoint that is to left of OQ_c . Also, it can be shown that the inert and many other irrational firms reproduce this famous theory of neoclassical economists. The transition from competition to monopoly shifts the production opportunity to lower output, which in turn encourage irrational companies to reduce their activities.

Discussion about the input price and the degree of competition indicates that “irrational firms” can produce very rational market responses, and this, seeming paradox, offers the solution to boiling and protracted controversy between marginalists and anti-marginalists. Confidence in the irrationality of firms affected the anti-marginalists to conclude that the response of the market was also irrational, while confidence in the rationality of the market contributed to the view of marginalists that (in these circumstances) and rational firm.

Conclusion

To gain an understanding of the model of behaviour of irrational household it is necessary to firstly considered the model of rational behaviour of household. From the viewpoint of this model, rational household always chooses the combination that maximizes its usefulness or satisfaction. Figure 1 represents the diagram that enables to find the best choice of household. The abscissa shows the quantity of commodity X , and the ordinate shows the quantity of commodity Y . Line AB is a budget constraint and surface AB is a set of available combinations of commodities X and Y . The indifference curve does not only connect the different combinations of goods with the equal degree of usefulness or satisfaction, but also shows the preferences of household members.

Household accomplishes the best choice at the point p , at the intersection between the budget line AB and the indifference curve ii .

Firstly, increasing price of commodity X shifts a budget constraint from AB to CD . Secondly, it increases the consumption of commodity Y at the expense of consumption commodity X . Thirdly, increase in price of commodity X creates a new consumption opportunity set. This means that choice of household depends on the price. The price forces households to behave in accordance with the fundamental theorem of rationality: demand curve has always negative slope, assuming that the other factors, that influence on household's demand are not changed.

Becker has identified two extreme types of rational behaviour. It is impulsive behaviour, that Becker reduces to the random change of behaviour, and inert (routine) behaviour, that excludes any changes in behaviour. Becker proved that an irrational firm may act as a rational one, i.e. as if its actions were rational, instead of impulsive.

When the consumption opportunities were initially limited by the budget line AB , the average consumption of a large number impulsive households gravitates toward the point p . This is an indicator of their rationality. On the other hand, the average consumption of other impulsive households is uniformly distributed around the point p . This, further, means that these households can assign equal probabilities to all points in the entire consumption opportunity set. This is considered an indicator of their irrationality.

To gain an understanding of the model irrational behaviour of firm, it is necessary to firstly considered the model of rational behaviour of firms. Increasing prices of inputs X would reduce the quantity of inputs in the production process within the firm (Figure 2). The isocost line CD of rational firm shows reducing the quantity of input X in relation to the isocost line AB . This theory is true for irrational firms. A large number of impulsive firms would certainly be at the point p when faced with AB , that is p' , to the left and above the p , when faced with CD .

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TARANTINOS TEXTS THAT HAVE BEEN PRESERVED IN PALLADIUS WORK „OPUS AGRICULTURAE“ AND AGRICULTURAL ENCYCLOPEDIA – GEOPONIKA

Abstract

Tarantinos texts have left no small influence on economic thought in the agriculture of the Roman Empire and later the Byzantine Empire. Authors such as Palladius anonymous editors Geoponika was those who transmitted the ideas and solutions that tarantinos gave in their articles. His ideas are expressed in the texts of these authors are quoted integrally, or are recounted original solutions. In this way they extend the life of Tarantinos texts, which are now lost in the original.

In Palladius work is three texts that relate to improving the taste and quality of olive oil. In Geoponika of fourteen heads, which are thought to have been taken from Tarantinos work. Theme head is varied. Texts relating to agriculture, viticulture and winemaking, cultivation of olive trees, the grafting and planting of fruit and flowers, and on fisheries.

Studying Tarantinos these texts were published by the Palladius in his work “On agriculture” in the original “Opus Agriculturae” but in Geoponika we can conclude the following. If you were Palladius and anonymous editor Geoponika only known authors who have used the original Tarantinos work. Since we cannot have access to the original Tarantinoso work we cannot determine whether his work is directly quoted. Also we cannot determine the authenticity of some heads was the organizer Geoponika attributed tarantinos. Yet despite all that remained preserved some thoughts and ideas that tarantinos made in his lost work, primarily thanks to the Palladius and anonymous editors Geoponika.

Key words: *Tarantinos, Palladius, Geoponika, agriculture, economic thought*

JEL classification: B11, N01, N13, N53, N63

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ТАРАНТИНОСОВИ ТЕКСТОВИ КОЈИ СУ САЧУВАНИ У ПАЛАДИЈЕВОМ ДЕЛУ „РАДОВИ У ПОЉОПРИВРЕДИ“ И У ПОЉОПРИВРЕДНОЈ ЕНЦИКЛОПЕДИЈИ - ГЕОПОНИЦИ

Apstrakt

Тарантиносови текстови су оставили не мали утицај на економску мисао у аграру Римског царства, а касније Византије. Аутори као што су Паладије и анонимни редактор Геопонике су били они који су преносили идеје и решења која је Тарантинос дао у својим текстовима. Његове идеје које су исказане у текстовима ови аутори су цитирали интегрално, или су препричавали оригинална решења. На овај начин они су продужили трајање Тарантиносових текстова, који су данас изгубљени у оригиналном облику.

У Паладијевом делу се налази три текста која се односе на поправљању укуса и квалитета маслиновог уља. У Геопоници се налази четрнаест глава, за које се сматра да су преузете из Тарантиновог дела. Тематика глава је разнолика. Текстови се односе на земљорадњу, виноградарство и винарство, гајење маслина, о калемљењу и садњи воћа и цвећа и о рибарству.

Изучавањем Тарантиносових текстова који су објављени од стране Паладија у његовом делу „О пољопривреди“, у оригиналу „Opus Agriculturae“, али и у Геопоници можемо да закључимо следеће. Да су Паладије и приређивач Геопонике једини познати аутори који су користили оригинални Тарантиносов рад. Пошто ми не можемо да имамо увид у оригинални Тарантиносов рад не можемо да утврдимо да ли је његов рад директно цитиран. Такође не можемо да утврдимо веродостојност неких глава које је приређивач Геопонике приписао Тарантиносу. Ипак и поред свега тога остале су сачуване неке мисли и идеје које је Тарантинос дао у свом изгубљеном раду, и то пре свега захваљујући Паладију и анонимном редактору Геопонике.

Кључне речи: Тарантинос, Паладије, Геопоника, пољопривреда, економска мисао

Introduction

The influence of Tarantinos texts on economic thought in the agriculture of the Roman Empire and later the Byzantine Empire was definitely there. Authors for whom we can safely say that they used Tarantinos work on agriculture were Palladius who worked in the fifth century and the anonymous editor of Byzantine encyclopedias on agriculture, which made the compilation of this part of the X century. These two authors have passed some ideas and solutions that Tarantinos wrote in his book that he wrote to us in its original form other losses. Agro-economic thoughts that are expressed in Tarantinos work of these authors are quoted integrally, or are recounted his decision.

Tarantinos work together with the work of other agro-economic writers that created since the time of ancient Greece and the Roman Empire downloaded and added by the text editor Byzantine agricultural encyclopedias Geoponika. Editor text has decided to

take part in Tarantinos 14 different items or quotations. Percentage terms compared to other author's citations number of commitments to this author are solid.

About Tarantinos

We in our further studies are particularly interested Agro-economic thought of one of the author whose quotes included in Geoponika. The author is Tarantinos (Tarantinos) or Tarantinus. He was of Greek origin. He has been nothing really known, except that his name was linked with the southern Italian city of Taranto, Taras today. It is assumed that the author lived in this city and that it had created. The older authors that have studied the problem Geoponika or originating author whose quotes is taken for this famous encyclopedia could not determine who actually Tarantinos was. For example, an author who has published Geoponika early eighteenth century, points out that tarantinos maybe I Varro with his name in Geoponici written in many different ways. (Needham, 1704) The aforementioned author continues in the same spirit to speculate that perhaps tarantinos Columella or Heraklides or Tarrant who actually practiced medicine and whose work is taken over by the famous physician Gallienne. This only confirms that Tarantinos had not been known since the time of the Middle Ages, and that his work is probably lost.

What is important and what we want particularly to mention is that the Tarantinos works any source other later authors, who have written on the subject of agriculture. This primarily refers to the Palladius, the author who created the V century. Palladius from Tarantinos work took four citations, related to olives and olive oil. These quotes were subsequently taken over anonymous editor of the famous Byzantine encyclopedia Geoponika. This gives us a clear manner indicates that Tarantinos was the real author and his work is there and that it was known Palladius, and later probably Byzantine anonymous editor's agricultural encyclopedia.

About Palladius

Rutilius Taurus Aemilianus Palladius known as Palladius Rutilius Taurus Aemilianus or frequently as Palladius was the Roman authors who has worked in the second half of the fourth century or the first half of the fifth century AD. He is known for his book on agriculture, *Opus Agriculture*, and in some editions of the act known as *De re rustica*. We know little about him beyond what he tells us himself, namely that he had farms on Sardinia and in Italy near Rome. His date is much debated, but he probably wrote in the fourth or fifth century AD. The manuscripts call him “*Vir inlustris*”, a title which began to be employed in the second half of the fourth century, initially for men of the highest rank in the Roman Senate, and later more widely. (Fitch, 2013, p. II)

Since the Middle Ages, this author who specializes in writing about agriculture is often referred to as part of Palladius. He was a prominent representative of Gallic families. Information pertaining to his life are scarce and few. In his work Palladius a lot depended on agricultural earlier authors, mainly Columella and Quintus Gargilius Martialis, he also wrote the texts that have been incurred as a result of his own knowledge

of the agricultural production of Italy and Sardinia, as well as from personal experience he gained as an owner land. (Fitch, 2013, p. 12-13)

About Geoponika

Geoponika presents the work in the field of agricultural economics which was created as part of a major encyclopedic project of Byzantine Emperor Constantine VII Porphyrogenitus (913-959). The emperor is devoted to the introduction in this part, but not, as in earlier times, it was thought, was his work. It is believed that the encyclopedia edited in his name for us unknown editor who points out that the car did a lot of charity to his subjects, had destroyed their enemies, but to be consecrated, and many other jobs that have entered the order in everyday life. Below anonymous editor points out the emperor's special merit. It gives him recognition for his generous support in the development of science, culture, art and economy with the following words: “First, I draw your attention to philosophy and rhetoric, which have already inflammation in decadence, plunged into wordless depths of the river of forgetfulness in the underworld; they are now good and reasonably organized and developed your control hand. Then, all other sciences and arts' restored. Then, having learned about the three spheres, which vary from national life, and the military, the clergy and farming skills and behavior. Then you're with characteristic size and depth of thought, he ordered the use of the experiences of the writers on agriculture and plant cultivation, time, character and place that suits them, and the places seeking water, and prepare for the work that you'll do and with what slope as well as any other big, you collected in one useful for all work.” (Dalby, 2011, p. 53-54)

Anonymous has helped to m long, points out in the introduction that is related, among other areas of daily life in the car and Agriculture “has brought a lot of passion.” Agriculture as a sector of the economy has had a major impact on the economy of the then Empire. It is no wonder Caesar interest in it. For this reason Constantine VII ordered to be found all the texts of ancient writers that have written on the topic of Agriculture. That their work identifies, collect, translate and publish in one place. (Koutava-Delivoria, 2002, p.367-370) With that introduces us to the compiler “Geoponika” I pointed out that his work is not an original work but a compilation, which is made using other sources, including those that existed as compilations of various other compilations, such as for example „Συναγωγή γεωργικών ἐπιτηδευμάτων“/ Pictures from agricultural practices Vindanija Anatolia in 12 books.

To our knowledge right from the Encyclopedia of Agriculture, or Reader or Ekloga wrote Cassian Bass in the sixth century, from which the anonymous editor of the X century took texts he then devoted himself emperor Constantine VII. As we have already pointed out for us today is this text unfortunately completely lost. (Lipšič, 1960). Other are saved only some versions of texts that have occurred in the eastern part of the Byzantine Empire. Texts can qualify for less valuable resources. But besides that, the texts give us a good chance that we can use to try to determine how an anonymous text editor directly dependent on the model of writing that were applied in late antiquity. What would be the case Geoponika represents the result of audit work and modernization by the new compilers or editors. (Amato, 2006, p. 1-6)

Text Geoponika is a modified version of the Greek text Vindonius Anatolia from Beirut that originated in the fourth century BC. The article is entitled “Synagogue

Georgikon epitedeumatōn” (Collection of agricultural practices). Author Anatoli probably be identified as well-known lawyer from the fourth century, who was prefect of Illyria and friends Libanius. His work is based on earlier works of Roman authors like Columella and Gaius Plinius Secundus. On the basis of the work of these authors we can see that they took over the works of some older authors. Firstly we think of the discussion Maga from Carthage (whose work is translated into Latin in the II BC by order of the Roman Senate). This article is adapted VII century, Cassian Bas (Cassianus Bassus Scholasticus). The work is entitled “Peri Georgias eklogai” (Selected Issues of crop), and survived only in Arabic, in slightly modified form.

Anatolia text synagogue had a dubious significance because it is apprehended directly or through Cassian Basa, the Syriac and Pahlavi (Persian) language, and then translated as we have written in Arabic. There are several translations of the Arabic version of the text. (Carrara, 2006, p. 108-110) The text was translated into Armenian language. (Greppin, 1987, p. 46-48) Patriarch Photius I of Constantinople (810-893) had access to the Greek text in the late ninth century. He argued that it was used for practical purposes of his property. Today, only half a page of text that is used Patriarch Photius survived. (Littlewood, 2012)

Text “Geoponika”, was the main source of information related to agriculture that was used in the East, just as it was Latin manual of palladium from the fifth century to the west all the way to the unification of these two sources is by Peter Crescentia (Pietro de ‘Crescenzi) from XIV century “Liber ruralium Commodorum.” (Crescenzi, 1486).

List authors whose quotations are listed in Geoponika are quite large. The origin of the authors varied. They are mostly Greeks and the Romans followed them. In Geoponici are states and the Persian Zoroaster. If we look at the authors of Roman origin we see that they are represented by name Varro, which can be considered for agrarian thinkers and the poet Vergil (Rodgers, R. H. 2011). In addition to these authors there are also quotes other Roman authors such as Apulej. (Rodgers, R. H. 1978). On the whole texts of senior authors who were Roman origin were taking younger authors who were also Roman origin. In this respect we differentiate between two champions downloading texts. The first line begins with the downloading of texts not roman such as Maga from Carthage and the Greek Pseudo-Democritus. These two authors have created from the third to the first century BC. Their work was taken over by Pliny the Elder in the first century BC. From his texts on agriculture copied and elaborated somewhat, Quintillus, Apuleius and Apollonius they are all created in the second century. The second branch starts Columella who worked in the second century. His work takes directly through Gargilius Martialis in the third century. This author takes the works of Pliny the Elder and Quintilian. Africanus author of the third century also undertakes work Quintilius and Apuleius but also works Gargilius Martialis, and the works of all these authors of the fourth century take Vindonius Anatolia. Palladius author of the fifth century undertakes work Vindonius Anatolia, Gargilius Martialis, Columella. At the end, the authors whose works have served as a source of work Cassian Basa who worked in the sixth century were Vindonius Anatolia, Palladius and Didymus Young. From these authors editor Geoponika directly take over texts, which is included in Geoponika.

From the remarks of anonymous editors get a chance to learn some things from his biography. Objections we therefore make it possible to determine the social class to which he belonged to the editor and ask the question, what kind of land he describes the techniques he practiced in agriculture.

As mentioned above, in many manuscripts and the compilations “Geoponika” Cassian Basu scholar ascribes authorship. This trend determination Cassian Basa as the author is present in the Middle Ages. In favor of authorship Cassian Basa had chosen and many later researchers, even those who have written on this subject in the 21st century. For example: Bassus K. Mikolajczyk, I., (2012). Geoponika Bizantynska Encyclopedia Rolnicza, Wydawnictwo Naukowe, universities Mikola Copernicus, Torun. However, it should be noted that we have no evidence that would fully confirm the correctness of this assertion. In the literature many times it emphasized, and we fundamentally believe in it that the term scholar or scientist (σχολαστικός) is not an adequate terminology that is used in the X century. Furthermore, if we accept this argument, it remains unclear why still figures as the author Cassian Bas. Maybe because the name Bas as “the son of Bas” directly mentioned in the introduction to the book VII, VIII and IX where he is cited as the author.

We do not yet have enough information that we cannot say for sure what the name of the author or editor of “Geoponika.” For this reason we have chosen to believe the author of this work as the anonymous author. However, if we can fully argue and we agree with that attitude to most researchers that have studied this theme, and considered that “Geoponika” did author unknown time will tell.

So we can conclude that the encyclopedia is a compilation of information on agriculture that emerged from the Greek and Roman world through different experiences acquired by experimenting with an emphasis on good practice, but the highlight awareness of aesthetics, as the debate on housing and arrangement of the natural environment around the village. Many of the guidelines contained herein are, however, more fanciful than real and in practice are more the result of thinking that is adjacent to the unreality, like for example a recipe that creates a barren tree fertile, thus prevents them cut down, creating hybrid mulberry by grafting on a white poplars, production of white berries or placing special labels on fruit caused by engraving on the seeds from which the tree grows. But despite these guidelines we thank Geoponika yet have a comprehensive overview of the agrarian thought of the ancient world, which is collected in one place. Also thanks to this encyclopedia of us had been preserved many economic thoughts pertaining to agriculture and in their original versions remained lost for today’s science. Also thanks Geoponika for us have been preserved many economic thought pertaining to agriculture, and in their original versions remained lost for today’s science.

Tarantinos texts contained in Palladius

Texts that are considered that by Palladius taken from Tarantinos books relating to olive oil. Or to be more precise refer to retrieve the taste and quality of olive oil. Those are:

- 12.19, Cleaning dirty oil.
- 12.20, Foul-smelling oil.
- 12.21, Curing rancid oil.

Tarantinos text contained in the Geoponika

The texts that are related to Tarantinos situated in Geoponika refer to the following topics:

- 2.12, What seeds to sow in rich soil, what in middling and what in thinner soil?
- 2.27, On the granary or horreum and the storage of wheat;
- 4.4, The myrtle-grafted grape;
- 4.5, The early grape;
- 4.6, The late grape;
- 7.16, Treating wine that has begun to turn to vinegar;
- 9.21, How to make olive oil clean;
- 9.22, Treating rancid oil;
- 9.23, Treating bad-smelling olive oil;
- 9.24, Settling cloudy olive oil;
- 10.24, Cleft-grafting pears;
- 11.23, Growing violets;
- 12.41, Growing mushrooms;
- 20.6, Fishing.

Analysis Tarantinos texts

If we look carefully at the verses that are downloadable from Tarantinos they are varied. It starts with the text relating to the processing of fields and land to use. If you look at the texts which relate to the most important works in the field, we note the presence of a complex system of field crops, whose treatment has been used relatively intensive plowing using techniques that were known in ancient times and the Middle Ages, and contribute to increasing crops yield. Arable farming in the early Middle Ages had an extensive character. During this period there was an abandonment of the methods that have been effective against agriculture during the existence of the Roman Empire. The reasons for this should be sought in reducing the population of the country has been much exhausted the country is leaving without treatment because she could handle another country. Due to this way of land yields were small.

It continues with the text relating to the storage and preservation of wheat in storage areas or granary.

In book four, which is dedicated to grapes and grape processing permeated the three texts. Other texts also apply to wine and wine production is also included and can be found in the following sections Geoponika. As can be seen in the whole Geoponika growing grapes has been very important for the Roman and the Byzantine Empire. (Gaulin, 1984, p. 111-115) From these few texts we can read that there myrtle grapes, early and late varieties of grapes, as well as the technique of sour wine is wine of good quality. The knowledge that there are different grape varieties and techniques for improving the quality of the wine is the subject of constant interest of various researchers. (Anagnostakis, 2014, p. 38)

Book Nine Geoponika is dedicated to olive trees and has been producing olive oil. Use olive oil was the most widespread, feel free to be said that the diet of the Byzantine

Empire was based on three main elements, namely: bread, wine and olive oil. It follows that the olive oil constitutes an important element in the diet of the population. Climate and nerver complicated way of olives and olive oil have led to a large Then use. In addition to using nutrition olive oil has been used in the preparation of various medicinal potions. Palladius and editor Geoponika as their predecessors agronomists from ancient times, have written a lot about this activity. It is interesting to point out that both the author and the Palladius and anonymous editor Geoponika download the text relating to the processing of rancid, frosted and olive oil that smells bad. In this regard, in Table 1 we can comparative to see which texts were retrieved.

Table 1. Comparative review texts about by olive oil taken from Tarantinos

Palladius	Geoponika
12.19, Cleaning dirty oil.	9.21, How to make olive oil clean.
12.20, Foul-smelling oil.	9.23, Treating bad-smelling olive oil
12.21, Curing rancid oil.	9.22, Treating rancid oil
/	9.24, Settling cloudy olive oil;

Source: Fitch, J. G. (2013). Palladius, the Work of Farming. Prospect Books, p. 214-215. and Dalby, A., Bassus, C., & Constantine, V. I. I. (2011) Geoponika: Farm Work: a Modern Translation of the Roman and Byzantine Farming Handbook. Prospect Books, p. 195-196.

Other books include the cultivation of fruits such as citrus fruit, pears, peaches, plums and so on. Editor Geoponika shows great interest in fruit growing. He writes about this issue with particular care. The shows great knowledge of the matter relating to the planting and grafting on fruit. He shows great knowledge of the matter relating to the planting and grafting of fruit.

Book twelve as it can be seen is important to research that is focused on the production of vegetables and theory of cultivation land, which is very important to gardening in the city Constantinople's. (Koder, 1993) Garlic, onion, lettuce, mushrooms, mint, cabbage, basil were the main products are referred to as agricultural crops that are cultivated citizens Constantinople that time. An important place in the economy of Constantinople occupies gardening. In earlier times, however, showed great interests in this branch of agriculture. In ancient times it was shown great interest in this branch of agriculture. Thus, in Justinian's novella 64, describing the rights and duties of course, dealing with gardening and horticulture. (Auth. LXV; Ep. Theod. 64; Ath. 21, 1; Iul. const. LVIII.)

Last text deals with fishing. This article contains information about fish that live in the sea and rivers, their reproduction and devouring each other. The names of some fish species are not listed. List the names of fish could give us a more detailed picture of which species is the most hunted. Unfortunately, in this Tarantinos text does not give out any details about the types of fish, assuming that it is obvious that all these species were known then readers.

Conclusion

By studying Tarantinos texts that have been published by the Palladius but also in Geoponika we can conclude the following. Palladius and anonymous editor Geoponika are only for our famous authors who have used the original Tarantinos work. Since we cannot have access to the original Tarantinos work we cannot determine whether his work is directly quoted. Also we cannot determine the authenticity of some heads was the anonymous editor Geoponika attributed Tarantinos. Yet despite all that remained preserved some thoughts and ideas that tarantinos made in his lost work, primarily thanks to the Palladius and anonymous editors Geoponika.

Agriculture is the time of the Roman Empire, and later the Byzantine Empire was and remains the main economic activity. However its share in the overall economy has been changing into later periods to the benefit mainly urban economy in a period of economic growth received more and more important. This statement should not be understood as a principle, for the whole history of Byzantium marked by cyclical ups and downs in the economic production.

The measures agricultural production of the Roman Empire came into a phase when it comes to the rationalization of farm work, which is increasingly modernized. Agricultural techniques are developed to a high degree: watering, fertilizing, selecting precious species. From the third century comes to a halt in the development of agriculture. Notice the first signs of decline. To re-growth of agricultural production comes only in the ninth century. That is why there is a need to move forward with collecting written materials that can be used to create encyclopedias on agriculture or Geoponika. Content Geoponika shows us that the Byzantine feudal agricultural production and craft techniques were not going backwards, as it is believed. In the Byzantine Empire in the ninth century and remained in use ancient agronomic techniques, which continues to be carefully studied and tested in practice, but there have been innovations that have arisen due to changes in lifestyle.

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BUSINESS PROCESS MANAGEMENT IN HOTEL INDUSTRY: A PROPOSED FRAMEWORK FOR OPERATING PROCESSES⁴

Abstract

The purpose of this paper is to develop a generic hotel enterprise framework for operating business processes. That framework will encourage hotel and lodging enterprises to see their activities from a cross-industry process viewpoint instead of a narrow functional viewpoint. The process oriented perspective of business and hotel enterprises may surmount many of the weaknesses of the classical functional organizational structure and vertical management. The transformation of a hotel organization towards a business process management system with horizontal or process management point out the need to leave functional organizational in a hotel, and directs attention of its managers to different types of business processes: operating processes, management processes and support processes. Operating processes are a complete, dinamically coordinated and measurable set of activities or logically related tasks that use one or more input and produce outputs, at the same time creating value for hotel guests. This paper develops classification of operating business process on: the process of hotel housekeeping, the process of supplying necessary inputs, the process of guests arrivals and departures and the process of producing and serving food and beverage. The proposed framework for operating processes are very useful for hotel managers in Serbia, since they point out the relevance of more consistent application of business process management system in day-to-day business activities with the aim of effective decision-making.

Key words: process management, operating process, hotel industry

JEL classification: M11, M21, O31, L83

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УПРАВЉАЊЕ ПОСЛОВНИМ ПРОЦЕСИМА У ХОТЕЛСКОЈ ИНДУСТРИЈИ: ПРЕДЛОГ ОКВИРА ЗА ОПЕРАТИВНЕ ПРОЦЕСЕ

Апстракт

Циљ овог рада јесте развијање оквира пословних процеса хотелских предузећа. Поменути оквир ће омогућити предузећима која се баве хотелским бизнисом и пружањем услуга смештаја да реализују своје активности из угла пословних процеса уместо угла пословних функција. Имплементација процесне оријентације код хотелских предузећа може утицати на елиминисање недостатака функционалног организовања. Трансформација хотелских организација према систему управљања коришћењем пословних процеса наглашава потребу да се напусти функционална организациона структура у хотелским предузећима, и усмери пажња менаџмента ка различитим врстама пословних процеса: оперативним пословним процесима, управљачким пословним процесима и процесима подршке. Оперативни процеси су потпуни, динамички координирани и мерљив скуп активности или логички повезаних задатака који користе један или више улаза и производе услуге, истовремено стварајући вредност за хотелске госте. Овај рад развија класификацију оперативних пословних процеса на: процес хотелског домаћинства, процес снабдевања неопходним инпутима, процес пријема и испраћаја гостију и процес производње и сервисирања хране и пића. Предложене графичке интерпретације су веома корисне за хотелске менаџера у Србији, јер они наглашавају потребу за већом применом процесног приступа у управљању у свакодневним пословним активностима и ефективном доношењу одлука.

Кључне речи: процесни менаџмент, оперативни процеси, хотелска индустрија

Introduction

The three biggest challenges for hotels' organizational structure are: globalized business environment, technology development and request of interested parties. The first challenge is the increasingly competitive environment of the hotel and lodging enterprises in all geographic regions. While some temporary aberration may result in less opposition, the forces that are shaping the hotel industry dictate that intense competition in all business sectors will be the rule and not the exception. The second challenge is the tremendous increase in the sophistication of information technology and social network of hotels. And third, always promising, challenge are requests of hotel guests. In response to the mentioned challenges, hotel enterprises are forced to innovate faster their business models and must focus on customers, competition and processes. These new business models have been described as "business process management system" (BPMS). This system means that a focus is placed on the business process (Krstić, Jovanović, Kahrović, 2012).

The functional structure of hotel organization will not be sufficient for a long-run answer to aforementioned challenges. Classic structural model of hotel organisation must be upgraded through developed, documented and implemented business process. In order to run hotel successfully, numerous interrelated activities must be defined and

managed. The implementation of business process management systems in the hotel enterprise, their definition and interaction, together with the management, can be defined as a business process approach of management. Business processes are one of the important elements of hotel management system. If they are not developed, documented and implemented, we can fairly ask whether the hotel management system is capable of meeting requests of interested parties, primarily hotel guests.

Theoretical backgrounds and literature review

Organizing, the process of structuring human and physical resources in order to accomplish organizational objectives, involves dividing tasks into jobs, specifying the appropriate department for each job, determining the optimum number of jobs in each department, and delegating authority within and among departments (Burton, Obel, DeSanctis, 2011). One of the most critical challenges facing hotel and lodging business is the development of a responsive organizational design that is committed to better hotel guests and employee satisfaction, financial performance and competitive advantage.

Most small and medium sized-enterprises, including hotels, have been organized in the same way for years. Hotel managers are faced with the need to group certain jobs in order to ensure efficient coordination and control of activities. These job groupings are usually called departments. This common method of organizing a hotel or a lodging business is the functional organization. In a very small lodging business, such as bed-and-breakfast, the owner can supervise each department. However, as the lodging business increases in size, it is effective to create a managerial position within departments (Stutts, Wortman, 2006). That means that workers who perform similar operations or have similar knowledge are grouped together into one department. This way of organizing is based on the notion that greater productivity can be achieved when workers specialize in just a few tasks or activities. The division of work, where employees are appointed only one or a few specialized operations and are provided with specialized machines to help them perform those operations, can result in greater output per worker than could be accomplished by the same number of specialists each working alone.

In a functional organizational designed enterprise, each hotel department is organized narrowly around the particular function it is intended to perform. A detailed analysis of the organization, duties, and requisite skills of the members of each department would demonstrate a high degree of consistency of purpose, a logical hierarchy of position, and a somewhat common body of skills. The narrow focus within each department fosters departmental efficiencies and clarity of departmental goals and career paths. However, owing to the narrow focus, many of the skills learned in one department are not easily transferable to other departments. Moreover, the narrow focus of the departments also makes it difficult for members of one department to fully understand or appreciate the contributions of other departments.

Functional hotel departments can be depicted as watertight cylinders. Each department is designed to perform certain functions and has become efficient in channeling information and work both upward and downward within its cylinder. The flow of information or the coordination of activities among cylinders tend to be difficult, however. Career paths are strictly within a single department and, as each becomes

absorbed with its own activities, tasks, and goals, departmental viewpoints become more myopic and the opportunity for interdepartmental dispersion of ideas and cooperation becomes more difficult. In addition to these, there are also a few weaknesses of functional organizational design in hotel organisations (Nebel III, Rutherford, Schaffer, 1994): 1) Central decision making (authorization for purchases often must be signed by general managers); 2) Difficulty of cross-functional coordination (the coordination of activities requiring the cooperation of more than one department represent a major organizational challenge for hotels); 3) Stifled innovation (central decision-making and coordination often results in a bureaucracy that focuses power in hands of one or only a few people at the top of the organization); 4) Unclear responsibility for overall performance; 5) Limited opportunities for general management training.

Appropriate way to overcome these weaknesses of a functional organizational design in hotel organizations is to develop interdepartmental teams to help coordinate the activities of different departments that must work together. Properly designed interdepartmental teams improve communication among departments that serve each other's customers and provide a forum for averting problems. Teams foster direct communication among members of different departments, but they are also time-consuming and add an additional element of complexity to an already complex organization. In addition, while providing the opportunity for coordination and cooperation, they do not ensure it.

It is possible to introduce a new way of viewing hotel organizations that hold the promise of overcoming many of the inherent weaknesses of a functional organization and, at the same time, is more in tune with the operational imperatives of the hospitality business. This approach challenges the principle of division of labour. The fundamental premise of this management system is that hotels currently organized by departments around tasks should reunify those tasks into coherent business processes. Furthermore, arranging business activity into business processes will dictate what the organization will look like. Thus, to understand how the hotel of the future might be organized, it is necessary to approach the task indirectly by first understanding the concept of business processes and business process management system.

Developing a new management system of the hotel organization requires a new way of thinking, which will result in dramatic business performance improvements. This new way of viewing the organization has been typically described as a business process management system (BPMS). Business process management system or business process orientation (BPO) was actually introduced thirty years ago by Porter (1985). He introduced the concept of interoperability across the value chain and horizontal organization as a major issue within firms (Porter, 1985). Davenport and Short (1990) also depicted a process orientation within a company as a crucial component for success. They defined a process orientation as a horizontal view of business that cuts across the organization with product inputs at the beginning and outputs and customers at the end. They suggested that five major steps in process redesign are: developing the business vision and process objectives, identifying the processes to be redesigned, understanding and measuring the performance of existing processes, identifying IT levers, designing and prototype process (Davenport & Short, 1990).

Furthermore, Hammer and Champy (1993) presented the business process orientation concept as an fundamental element of an effective reengineering effort in the most influential business management book “Reengineering the Corporation: A Manifesto for Business Revolution.” They offered reengineering as a strategy to overcome the problematic cross-functional activities that present major performance issues to firms. The apparent conflict between a functional focus (“*whom I report to*”) vs. a horizontal focus (“*whom I provide value to*”) is offered by them (Hammer & Champy, 1993). Along with them, Bryne (1993) among the first popularized the term “horizontal organization” and provided a prescriptive definition of a business process-oriented model. A process oriented organization is also often referred to as a “process centred organization” (Hammer, 1996), “horizontal organization” (Ostroff, 1999), “process enterprise” (Hammer & Stanton, 1999), “process focused organization” (Gardner, 2004), “process managed organization” (Rummler, Ramias & Rummler, 2006). Numerous authors have researched the idea of organizing around business processes in a certain manner (Stalk & Black, 1994; Dutta & Manzoni, 1999; Ostroff, 1999; Galbraith, 2002; Gardner, 2004; Crosetto & Macazaga, 2005; Weske, 2012).

All of them considered that the scheme of the functional hierarchy could not provide a true picture about how an enterprise operates. Therefore, it is necessary to work on the identification of a business processes network, and by the implementation of the principles of BPMS to provide the managing of the enterprise. Besides, the process-oriented enterprise is being created with the help of transformation of the functional structure into the process structure, and instead of functional departments, business process is used as a base for grouping the jobs. This means that jobs are not grouped according to similarities as is the case with the functional grouping, but according to their connectivity with a certain business process. Thus, instead of a traditional functional department, such as a personal, accounting, marketing, engineering, purchasing, rooms division and others, there are process teams which consist of all activities that are in function of the effective realization of some process.

The three fundamental principles of BPMS are (Ostroff, 1999, p. 10): 1) organize around cross-functional business processes, not functions; 2) install process owners or managers who will take responsibility for the certain process in its entirety; 3) make teams, not individuals, the cornerstone of organizational design and performance. According to Davenport and Short (1990), business process is “a structured, measurable set of activities designed to produce a specific output for a particular customer or market.” Another comprehensive definition about cross-functional business processes are given by BPR experts Hammer and Champy (1993). They focused on the external dimension of a business process, pointing out that “it is a set of activities that use one or more input and produce outputs at the same time creating value for consumers.” Rummler and Brache (1995) described the business process as a way of managing white space on the organizational chart. They wanted to emphasize the horizontal nature of business process, which covers the space between different functional departments in an organization, because numerous problems in everyday operation between functional departments may appear. McCormack and Johnson (2001) define a process as a specific group of activities and subordinate tasks which results in the performance of a service that is of value. Business process design involves the identification and sequencing of

work activities, tasks, resources, decisions, and responsibilities across time and place, with a beginning and an end, along with clearly identified inputs and outputs (Krstić, Kahrović, 2015).

The existence of process owners, i.e. persons responsible for the realization of a business process is the most obvious difference between process oriented and traditional functional enterprises (Kohlbacher, Gruenwald, 2011). The term “owner of the process” is taken from the practice of TQM which can lead to some terminology problems. Process owner is not project manager, but it is a permanent role of one person responsible for realizing a business process. Owner of a process is responsible for the business process effectiveness and business process efficiency (Harrington, 2006, p. 47).

Process ownership is a very important element of the BPMS. The mission of the process owner is defined as: ensure efficient and effective business processes across organizational structures linking the value expectation and operational performance, manage and develop own processes and responsible for and mandate to define, implement, as well as measure and improve the owned processes as needed.

After choosing the person responsible for process realization, election of process team members is next. The owners of a process are forming process teams by selecting employees, which provide a contribution to achieving team goals and organizational objectives. A team is possible to define as a group whose members have corresponding skills and are grouped around a common purpose or set of tasks, for the realization of which they have certain responsibilities (Mohrman et al., 1995, p. 148). Process team means a group that focuses on a single business process to achieve continuous integration of its activities and ensure its realization in the desired way. Process teams are formed as permanent or temporary. Permanent process teams continually participate in the realization of repetitive business processes, and are therefore largely formalized. They mainly focus on the processes of the usage of various material and intellectual resources in the enterprise owing to be efficient. For example, process teams involved in providing services to consumers are permanent. Besides them, other process teams are only temporary and are established for special projects within a limited period of realization. For example, the process team which is formed to develop a new product can be treated as temporary.

Process classification framework in hotel industry

Business processes can be classified in several ways. Keen (1997) suggests that relevant processes are those that create value, processes that provide options and processes that sustain the value. According to Harrington (1997) the following activities within a business process are considered important: a) high-value adding activities, b) value adding activities and c) low-value adding activities. Following Harmon (2005), the crucial business processes are the following: core processes, enabling processes, and managerial processes.

Despite numerous possible types of business processes, and numerous diversities of process structures, all business processes in a hotel can be divided into three types (Figure 1): *operating processes* (processes that create, produce and deliver products and services that hotel guests want), *supporting processes* (processes that do not produce

output for hotel guests, but which are necessary to start up a business) and *managerial processes* (Cerović, 2010, pp. 415-416).

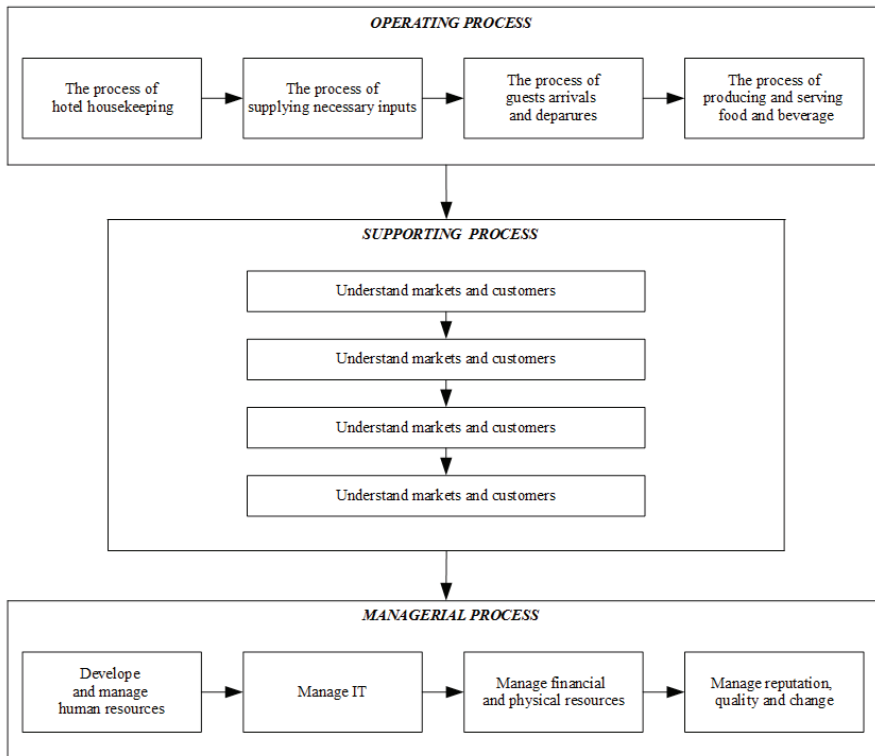
Four key operating processes in the hotel are: 1) *the process of hotel housekeeping*, 2) *the process of supplying necessary inputs*, 3) *the process of guests arrivals and departures* and 4) *the process of producing and serving food and beverage*.

Supporting processes are: understand markets and services, develop vision and strategy, design hotel products and services and market and sell. Understand markets and services comprised of three activities: determine customer needs and wants, measure customer satisfaction and monitor changes in market or customer expectations. Main activities within a process of develop vision and strategy are: monitor the external environment, define business concept and organizational strategy, design the organizational structure and relationships between organizational units and develop and set organizational goals. Design products and services activities are: develop new product/service concept and plans, design, build and evaluate prototype products and services, refine existing products/services, test effectiveness of new or revised products or services, prepare for production and manage the product/service development process. And, the last support process is market and sell, which comprised of next activities: market product or services to relevant customer segments and process customer orders.

Operating and supporting business processes have several important characteristics. Both types of processes have a set of related and *interdependent activities* which transform inputs into outputs. Operating and supporting processes have the beginning and the end, with boundaries which can be defined with reasonable precision and minimal overlap. These processes have users or customers that can be internal or external for an organization.

Besides these two species, the group of business processes includes managerial processes. These processes are a set of activities to direct, coordinate, integrate and control operating and supporting business processes that create value for enterprise consumers and shareholders. Management processes or managerial processes include mainly decision making activities. They are not tied to just one segment of an organization, but permeate the entire enterprise. Management processes include: develop and manage human resources, manage IT, manage financial and physical resources and manage reputation, quality and change. For managerial processes it can be said that they constitute a separate and essential subset of the supporting processes. They are not essential to consumers, but they are essential for management of an enterprise to provide survival, competitiveness and development of an enterprise. The difference between managerial processes is determined by the specificity of management objects.

Figure 1. Process classification in hospitality



Source: Prepared by the authors

Developing a framework of operating processes

Complete operating processes of a hotel comprise of processes of production activities and service activities. The purpose of production activities is rendering of services which have product characteristics, like: various food, drinks that are specifically prepared, bread, desserts, and similar. Purpose of service activities is providing hotel guests with: accomodation, serving of meals and beverages, entertainment, sale of goods, various handicraft-and-services, laundry washing, ironing and similar. The most important operating processes break into its various activities. The description of each operating process is accompanied by a graphic interpretation that illustrates the interrelated activities.

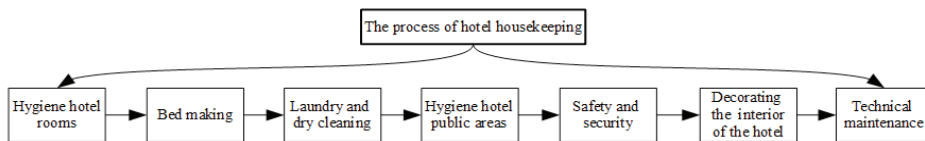
The process of hotel housekeeping is an essential and basic part of the hotel guests experience and satisfaction. Reservation and producing food are also important, but what guests really want is to feel at home, to feel comfortable. Although the staff giving this service do not necessarily interact with the public, the quality of their work is basic in molding hotel guests' pleasant memories of their stay. Satisfactory realization of this

process is the foundation of good infection prevention. The general cleanliness, hygiene and technical maintenance are vital to the health and safety of guests, staff, and visitors. Pleasant work environment contributes to staff members' satisfaction, making them to be more productive. A more wonderful environment enhances hotel guest satisfaction and can increase guest's use of service and frequent visits.

Within the process of hotel housekeeping is possible to identify the following activities with employed persons (Figure 2): the activity of hygiene and equipment supplies accommodation units, bad making (supervisor room, maids), the activity of laundry and dry cleaning: washing, ironing, drying (head wash, the controller receiving and issuing machine, chemical cleaners, tailor, washer, presser), activity hygiene hotel public space (hygienist, washer floors, washer glass surfaces), safety and security, activity decorating the interior of the hotel and the maintenance of horticultural seedlings (decorator, florist, gardener), as well as technical maintenance activity.

Activity of hygiene hotel rooms mean cleans the rooms and wash basins in the room. Bed making is the dexterity that desire to be developed by the housekeeping staff, as it not only provides relaxation to the hotel guests, as well as adds to the wonderful feeling of a visitor's room. Laundry and dry cleaning have to ensure clean and hygienic washing of all the linen items, and then distributing them to different areas of the hotel.

Figure 2. The process of hotel housekeeping with accompanying activities



Source: Prepared by the authors

Aside from cleaning the guest rooms, housekeeping process is also obligated for cleaning floor, elevators, terraces, service lobbies and service stairways, function rooms, shopping arcade, cabanas, bars, dinning rooms, offices, uniform rooms, tailor rooms, upholstery, shops, store rooms and swimming pools. To be concise, hygiene hotel public areas is responsible for the total cleanliness of a hotel (O'Fallon, Rutherford, 2010, p. 152).

Safety and security is responsible for maintaining a peaceable atmosphere in the hotel. If the guests always panic for their safety and the safety of their personal property, the climate will be exceptionally strained. Hence the housekeeping process staff should be aware of ways to protect himself and others, especially the guests around him and the property of the hotel from accidents. Several accidents could occur at the place of work. These include fire accidents, falls, wounds, injuries etc. It is imperative for all housekeeping staff to know about first aid as they could be the first ones on the spot to give quick regard to a hotel guests and also an employee in trouble.

Interior decoration is the craft of making a pleasant atmosphere in the living room with the addition of a complex of furnishings, art, and crafts, appropriately combined to achieve a planned result or design. These expressions and specialties have to be well maintained by the process of hotel housekeeping. Decorating flowers is an

ingenious and stimulating art which often carries a message or theme. Flowers and indoor plants add colour and beauty to a room.

As regards the activities of technical maintenance, it is necessary to point out that they ensure the functioning of the equipment and facilities in the hotel building. Maintenance hotel characterized by numerous distinctions, in relation to the facilities in which provide only food and beverage services. For staying in a hotel, in addition to board and lodging, requires the existence of a number of devices and equipment that are not required for restaurants. Rooms should have sanitary facilities, hot water, heating, TV, air conditioning, wi-fi internet, telephone and other elements necessary to stay in it. Longer stay guests at the hotel presupposes the existence of numerous hotels outside activities (sports and recreation, congress and business, spa-rehabilitation, etc.) which requires the existence of adequate equipment and devices. The objective of this task is to perform regular check of the equipment and devices, occasionally activated, a security officer of spare parts and, if necessary, in repairs or replaces the elements that are not in use (Stutts, Wortman, 2006).

At the head of the household is the owner of the hotel housekeeping process that includes the following activities: planning staff, schedule saving and sorting rooms and public spaces and the overall aesthetic appearance of the hotel. Just such an organization hotel housekeeping, of course, rarely encountered in practice and is subject to change depending on the type, size, location and method of doing business hotel. For example, some city hotels do not have a yard, or the surrounding area, and in these hotels, there is no need for external horticultural maintenance. In smaller hotels is definitely smaller and the number of employees, so the hotel can be hired farm just a few workers.

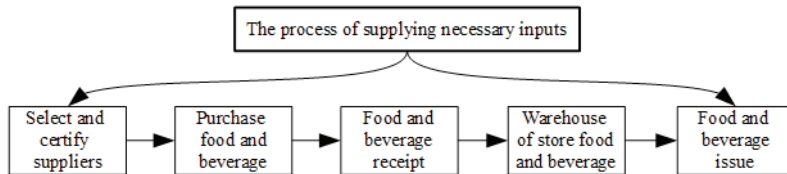
The process of supplying necessary inputs includes providing various kinds of goods and materials for the hotel business as a whole. Operation activities within this business process depends on the kind, type, size and category of hotel, as well as the time of its operations. These elements preferably influence the range and quantity of necessary goods and materials. Consumables character of the material, or the need for its continuous renewal, conditioned by the continuity of the business process. Given that certain types of goods and perishable foods subject, there is no possibility of forming a stock of goods of that kind, or the process requires special conditions for its storage.

The activities of this business process related to (Figure 3): selection of the best suppliers, ordering food and drinks, quantitative and qualitative reception of food and beverage, warehousing and goods issue. The owner of this business process evaluates and selects suppliers based on their ability to supply product in accordance with the requirements of the hotel. Owner process can by the contracting authority, inter alia, to set requirements that relate to the possession of precisely defined quality standards (ISO 9001.2008, HACCP, etc.). After the ordered food and drinks, the owner of the process with his team performs a set of operations that are related to the acquisition of foods and drinks, such as delivery of merchandise, unloading, the release of the packaging, weighing and storage. Foodstuffs are shipped in appropriate packaging which is an important condition for hygienic and health safety. Receipt of goods from suppliers accompanied by appropriate documentation, conducted by the owner of the process. The acknowledgment of receipt of the goods is evidence that the goods received are reviewed, tested, compared with an order form, and matches all elements in terms of quantity, quality and price.

After that is done warehousing and food in warehouses. There are the following types of warehouses: warehouses of food (dry food storage, storage of perishable food, a

warehouse for fruits and vegetables, refrigerators and other cooling devices), warehouse chemistry and pair confection, warehouse for drinks, juices and mineral water, warehouse for linens (tablecloths, tablecloth and napkins), warehouse for porcelain, glass and silver cutlery. This process ends with the release of the goods production process and serving of food or housekeeping process, depending on their needs (Barjaktarović, 2013).

Figure 3. The process of supplying necessary inputs with accompanying activities

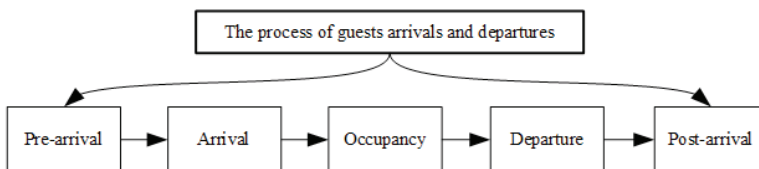


Source: Prepared by the authors

The process of guest arrivals and departures is a central spot of communication with guests at all stages of their stay in the hotel (from booking to payment of hotel bills). The process of guests arrivals and departures can be divided into five main activities. Within these five activities there are important tasks and operation related to guest services and guest accounting. Front office employees must be aware of guest services and guest accounting activities at all stages of the guest stay. Front office staff can viably serve the hotel visitors if they have a reasonable understanding of the flow of this process in hotel. The process of guests arrivals and departures represents a systematic approach to front office operations.

The guest chooses a hotel during the pre-arrival activity of this process. Choice of the guest can be affected by many factors, including previous experiences with the hotel, advertisement, word of mouth referral by friends and colleagues, location, corporate, travel agent booking, hotel name, hotel loyalty program member etc. The guest's decision of making the reservation can also be effected by the ease of making the reservation and the way reservation agent interacted and described the facility of the hotel like room type, room rate, recreational facilities and other attractions near the hotels etc (Barjaktarović, 2013, p. 137). If a reservation can be accepted, the reservation agent create a reservation on the hotel management software. The creation of this reservation record starts the hotel process of guest arrivals and departures. This reservation contains details of guest specific request which will help the hotel to provide the guest with personalized service during his stay.

Figure 4. The process of guests arrivals and departures with accompanying activities



Source: Prepared by the authors

Reservations can be divided in different ways. With regard to the temporal aspect, reservations can be short and long term, while in terms of security of payment bookings can be guaranteed and unguaranteed. *Short-term* reservations relate to the situation when the reservation request submitted several days before the beginning of the service, and relate mainly to individual customers. On the other hand, when the request is submitted several months earlier and refers to a longer period of use of hotel services, such form is called *long-term* reservations. *Guaranteed* reservations imply a specific form of guarantee hotel by a client that contracted services are implemented within the stipulated period. These reservations are favorable variant for the hotel. *Unguaranteed* are mainly occurring in transient objects a high level of occupancy. In the case of a guest who has reserved service does not appear until a certain time reserved a hotel room may issue another client.

The arrival activity of this process includes registration and room assignment process. After the guest arrives, he or she establishes a business relationship with the hotel through front office. It is the front office staff responsibility to clarify any query of the guest especially the details of room rate of packages he /she is booked on. When the guest checks-in to the room the occupancy stage of the guest cycle begins. The manner in which the front office staff represents the hotel is important amid the occupancy stage. As the main contact centre for hotel activity, the front office is responsible for coordinating guest requests. Among those providing information and supplies to the guests. Front desk should take extra care to respond to the guest on a timely and accurate manner. The main focus of the front desk staff is to provide anticipatory service and to meet or exceed the guests expectations. This will encourage the guest to repeat to the hotel.

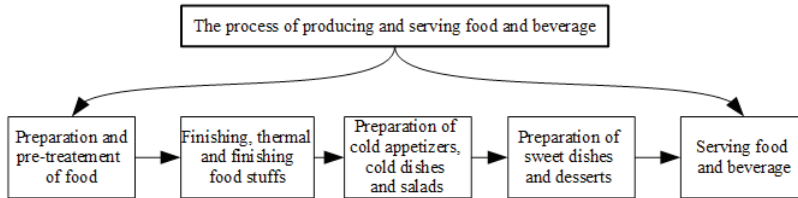
A variety of charges restaurant charges, telephone, internet, travel desk etc. during the occupancy stage affect guest and hotel account. Most of these charges will be posted to the guest account according to front office posting procedures. Other front office financial tasks during the occupancy stage is to verify the charges posted to the guest account and checking guest accounts against the credit limit. Guest services and guest accounting aspects of the process arrivals and departures are completed during the cycle's fourth phase i.e. departure. At departure the guest vacates the room, receives the accurate statement of the settled accounts, returns the room keys and leaves the hotel. Once the guest has checked out, front office updates the rooms availability status and notifies the housekeeping department. For hotels using property management software the status of the room is updated automatically. At this stage front office also collect the feedback of the guest experience in the hotels by handing over the guest feedback form.

The primary function of ***the process of producing and serving food and beverage*** is to provide food and drink to a hotel's guests. There is great diversity in the activities performed by this process, requiring a significant variety of skills on the part of its workers (Stutts, Wortman, 2006). This process have duties in producing, serving and selling food and beverages in hotel. Also, the process is divided into two sub-processes those are food and beverages product and food and beverages service.

The process of producing and serving food and beverage comprises a number of activities that may be performed in one or more types of kitchens. The number of activities and the type of kitchen or kitchens depend on the characteristics of the specific operation-large or small, cafeteria or table service, limited menu or extensive menu, and so forth. Typical most important activities within this process include: preparation and

pre-treatment of food, finishing, thermal and finishing food stuffs, preparation of cold appetizers, cold dishes and salads, preparation of sweet dishes and desserts, and serving food and beverage (Figure 5).

Figure 5. The process of guests arrivals and departures with accompanying activities



Source: Prepared by the authors

These activities of the process of producing and serving food and beverage are usually worked in kitchen, banquet, bar or lounge, room service and pastry shop. All of these activities is possible to divide in a lot of tasks and operations depending on the type, size or location of hotel enterprise.

Conclusion

Advantages of the business process management system of hotel enterprises compared to the functional model of organizational structure are reflected in performing operating business processes and activities with higher level of efficiency. It dramatically increases the flexibility of a hotel enterprise, capacity for innovation and speed of innovation process according to hotel guests demands. Because there are no boundaries between functional departments, employees increasingly recognize organizational objectives as their personal objectives, which ultimately results in their larger contribution to competitive strategy and its faster realization. The proposed framework for operating processes promotes and emphasizes teamwork and cooperation. Business process management system focuses all its attention on hotel guests, which leads to their greater satisfaction, improved work productivity and profitability.

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PARTNERSHIP OF TRADE AND MANUFACTURERS IN THE DEVELOPMENT OF TRADEMARKS³

Abstract

Trademarks are increasingly gaining in importance in modern business conditions, as evidenced by an increased market share of products with the trademark in some countries. Development of trademarks requires cooperation between manufacturers and trade. The research subject of this paper focuses on trademarks, as a result of a partnership between trade and manufacturers. The starting hypothesis in this paper is that the development of a trademark has its advantages both for manufacturers and for the trade. This hypothesis will be tested on the basis of available theoretical and empirical data on the development of trademarks, through a partnership between trade and manufacturers.

Key words: trade, manufacturers, partnership, trademark

JEL classification: M21, M31

ПАРТНЕРСТВО ТРГОВИНЕ И ПРОИЗВОЂАЧА У ФУНКЦИЈИ РАЗВОЈА ТРГОВИНСКЕ МАРКЕ

Абстракт

У савременим условима пословања трговинска марка све више добија на значају, што потврђују и подаци о повећању тржишног учешћа производа са трговинском марком у појединим земљама. Развој трговинске марке подразумева сарадњу између произвођача и трговине. Предмет истраживања овог рада јесте креирање трговинске марке као резултат партнерства између трговине и произвођача. Полазна претпоставка у раду је да развој трговинске марке има својих предности и за произвођаче и за трговину. Ова претпоставка биће тестирана на бази расположивих теоријско-емпиријских података о развоју трговинске марке кроз партнерски однос трговине и произвођача.

Кључне речи: трговина, произвођачи, партнерство, трговинска марка

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Introduction

Numerous changes in the environment in the early 1980s caused the development of the trade market. These are the changes which the scientific and professional community sees as “technological revolution”, “information revolution”, “structural revolution”, and “demographic and social revolution”. All these changes have had a strong impact on market conditions and the position of trading companies in the marketing macrosystem. Thus, trading companies try to develop an optimal combination of marketing instruments. Trademark, or private brand, as an instrument of trade marketing, is gaining in importance in recent years. At the same time, trademark has become the area of establishment of partnership relations between trade and manufacturers, which is the subject of this paper. The paper will first analyze the development of partnership relations between trade and manufacturers, and then trademark as a marketing instrument and partnership area. In this regard, the paper will point to the creation and functions of the trademark. The starting hypothesis of this work is that trademark development brings benefits to both manufacturers and consumers. This hypothesis will be tested through the theoretical aspect of a trademark, as well as through the analysis of case studies of METRO Cash & Carry, which develops partnerships with manufacturers in the development of trademarks.

The development of partnership relations between trade and manufacturers

One of the motives for the formation of business partnerships between trade and manufacturers, as members of the distribution channels, is the achievement of objectives in a more efficient manner. Partnership is, in terms of its characteristics, clearly different from simple cooperation, and is defined by a highly closed relationship between trade and manufacturers. The closed nature of the relationship is reflected in a high level of cooperation, which manifests itself in the willingness of partners to help each other, the flexibility to react to changing needs and demands of consumers, or simply work together in creating a competitive position on the market. In this regard, partnership can be understood as a relationship which is characterized by a high degree of cooperation and motivation to achieve common goals (Mohr & Spekman, 1996, p. 34).

The partnership is especially important as a way of gaining and maintaining competitive advantage. The practice of developed market economies shows numerous examples of partnerships between large trading companies and manufacturers, and it has a positive impact on lowering costs in the entire distribution system. Most often, this is achieved by: reducing the amount of inventories used by all channel members; using information technology to automatically collect, analyze, and distribute information; redistribution of redundant tasks between partners (for example, labeling of goods by the dealer); eliminating redundant procedures; inventory management based on just-in-time principle; using the system for electronic data interchange (EDI) (Diamond, 2010, p. 388).

Partnership occurs through broad social, economic, and technological ties over time, as well as through mutual commitment, trust, shared goals, and communication. By establishing a partnership, both sides gain sufficient benefit. Depending on whether partnerships are established for a shorter or longer period of time, there are strategic and operational partnerships.

Strategic partnership is a long-term business relationship between the companies, aimed at the achievement of strategic objectives and improving the competitive position of the partners, through the development of new technology, new products, and new markets. Successful strategic partnership implies the existence of a solid relationship between the partners and a long-term orientation to current results (operating efficiency and effectiveness) and future results (competitive advantage). As part of this arrangement, the partners see each other as “extension” of their own company (Ćuzović & Sokolov Mladenović, 2013).

Operational partnership is a short-term business arrangement, focused on the implementation of operational efficiency and effectiveness. Efficiency is the ability to minimize the resources to achieve short-term goals, while effectiveness is the ability to deliver products and services in a way that is acceptable to end users. Efficiency is measured by just-in-time delivery, product quality, number of short-term orders and inventory level, and effectiveness is measured by the quality of services (Meintzer, Min & Zacharia, 2000).

Operational decisions relate to a shorter period of time, lower level of resources, and are easier to implement and change in relation to strategic decisions. In contrast to strategic partnerships, in operational partnerships, partners cannot see each other as an “extension” of their own company.

Strategic and operational partnerships are, based on all of these characteristics, clearly distinguished from simple transactional relationships between trade and manufacturers, which rest on purchase and sales relationships.

Marketing partnership of trade and manufacturers in the creation of trademarks

A very important business segment of trading companies is the creation of product brands, or branding. Within their range, trade companies mostly have products with the manufacturer brands, but there is also the increased tendency to offer products with the trademark. Motivation for trademarks is based on the fact that this leads to larger difference in price, increases the negotiating power of trade in relation to manufacturers, and provides greater value to consumers, and, thus, loyalty of consumers to trade. Simultaneous participation of manufacturers and trade in creating value for customers is realized if the product brand is created through their coordination.

Trademark as an instrument of trade marketing

In modern business conditions, when trading companies are becoming increasingly powerful on the market, trade creates product brands, i.e. trademarks. Trademark (private label, own label, dealer brand, store brand) is the name designed by a particular trading company, a name that is profitable for a trading company, leading to customer loyalty (Kotler, Keller & Martinović, 2014, p. 550).

In developing their own brands, i.e. product brands, trading companies can focus on one or more categories of brands. Thus, theory and practice point to four categories of trademarks (Levy & Weitz, 2009, p. 386): premium, generic, copycat, and exclusive co-brand.

Premium brand is a form of trademark, which can, in terms of quality and cost-savings, be compared to famous product brands or trademarks. Examples of premium trademarks are: Wal-Mart’s Sam’s Choice, Tesco Finest, Marks & Spencer St. Michael, Woolworth Select, etc.

Generic brand targets price-sensitive consumers, and refers to the basic products that are offered at discount prices. An example of this is the offer of milk or eggs in supermarkets, or underwear in discount chains.

Copycat brand resembles a trademark in terms of appearance and packaging, and generally refers to products of lower quality and lower prices. Copycat brand products are most often found in variety stores.

The exclusive co-brand is a trademark developed by the manufacturer, often in cooperation with trading company, which has exclusive rights to its sale. The simplest form of co-branding is when a manufacturer introduces different models and different characteristics of a product that is sold by various trading companies. Thus, for example, an exclusive co-brand product can in different forms be found in different trading companies. Much more sophisticated form of exclusive co-brand is when a manufacturer develops exclusive product or category for trading company.

In addition to the above-mentioned brands or trademark categories, trading company can focus on the following branding strategies (Zentes, Morschett & Schramm-Klein, 2007, p. 125):

1. “Umbrella brand” strategy – where all retail stores of one company have the same brand, in many cases differentiated by sub-brands;
2. “Familial brand” strategy – where a group of retail stores of a trading company has a variety of brands,
3. Combined strategy – which, for a certain group of retail stores, uses the “umbrella brand” strategy, and, for another, the “familiar brand” strategy.

These strategies, seen through the example of well-known international trading companies, may be seen in Overview 1.

Overview 1: Brand strategies, based on the example of different trading companies

Brand strategy	Trading company	Trademark (brand)
“Umbrella” brand	Tesco	Tesco Extra, Tesco (Superstore), Tesco Express, Tesco Extra
	Edeka	Edeka aktiv markt, Edeka neukauf, Edeka center
	Systeme U	Marche U, Super U, Hyper U
Combined strategy	Coop	Coop, Coop Pronto, Coop bau+hobby, Coop City, Coop@home, Interdiscount, TopTip, Impo, Christ
	Migros	M, MM, MMM, Migros Restaurant, m-electronics Globus (department stores), OBI (franchise), Office World, interio
“Familiar” brand	Metro	Metro Cash&Carry, Real, Media-Markt, Saturn, Kufhof
	Kingfisher	B&Q, Castorama, Brico Depot, Screwfix, Koctas
	Casino	Geant, Casino, Leader Price, Monoprix
	Carrefour	Carrefour, Dia, Champion, Ed, Minipreco, Ooshop.com
	DSG International	Currys, Dixon, Dixon.co.uk, PC City, Electro World, Elkjop

Source: Levy, M., Weitz, B.A. (2009). Retailing Management. McGraw-Hill, Irwin, pp. 387.

There are numerous reasons why a trading company decides to introduce its own product brand (Dunne, Lusch & Carver, 2014, p. 435):

- To increase sales volume (for example, in the USA and Canada, sales of products with a trademark makes 20% of the total sales volume),
- To lower prices, increase inventory turnover ratio, and increase profits,
- To gain recognition from consumers (for example, in the USA, 80% of the products with the trademark is recognizable among consumers),
- To increase the share of brand products in the total company profit,
- To protect from aggressive competition,
- To increase the reputation of the company,
- To increase the negotiating power in relation to manufacturers,
- To gain consumer loyalty to brands, which directly affects the loyalty of consumers to the trade, and so on.

Although literature often interprets trademark as a “form of derivation”, i.e. development of a brand, there is no doubt that trademark is the basis for the success of a particular trading company (Ailawadi & Keller 2004). Consideration of trademarks in the function of the success of a trading company in itself raises a number of issues. First of all, it is necessary to accurately determine the consumers who have affinity with the trademark. Theory and practice have shown that these are consumers who are sensitive to prices, with middle income, and secondary education (Ailawadi, Neslin & Gedenk, 2001). Consumers with middle income tend to purchase products with the trademark in order to save money.

The question that needs to be considered in respect of trademark is whether it provides greater advantages compared to the manufacturer brand. Several analytical models gave a positive answer to this question, particularly pointing to the fact that a range of products in which trademarks have a high share achieve a high level of price differences (Narasimhan & Wilcox, 1998).

The third important issue that needs to be considered in conjunction with the trademark refers to product characteristics that contribute to the success of the trademark. Theory and practice have shown that the quality of products that the consumer perceives is of utmost importance for the success of the trademark (Sprott & Shimp, 2004). The importance of perceived quality stems from the fact that the quality of product with the trademark is an important determinant of the rate of purchase, i.e. that there is a positive relationship between quality and market share of the trademark. Therefore, it is necessary to find the most effective way to improve the perceived quality of the product with the trademark. One of the alternatives is related to increased advertising costs, so that consumers can better notice the trademark.

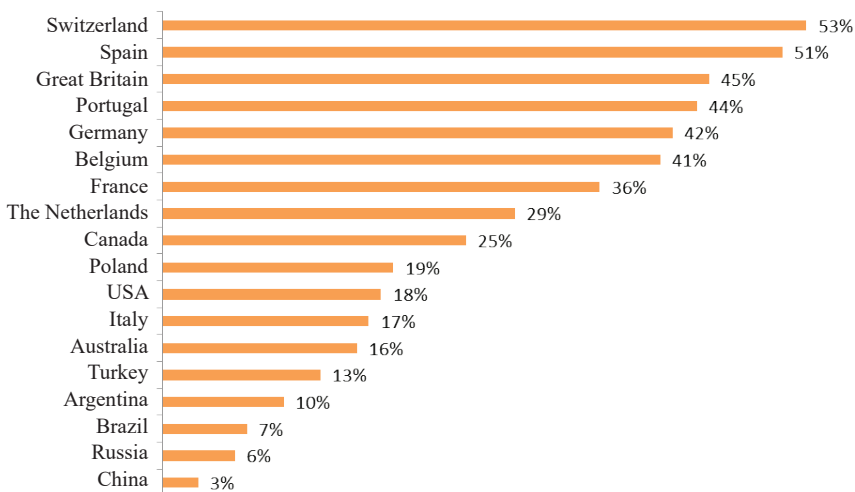
Historically speaking, trademarks used to be products of poorer quality, which were cheaper alternative to famous manufacturer brands. Over time, retailers, in collaboration with manufacturers, increased the quality of products, without causing the price increase. Today, the prices of products with the trademark are, on average, up to 15% lower than the products of famous manufacturers, but, despite the lower price, the difference in price realized by retailers is higher than the one realized by manufacturers. The reasons are manifold, but the most important are: avoiding marketing costs of manufacturers and signing long-term contracts with manufacturers, thus securing placement, while retailers,

on that basis, achieve lower product prices. A special advantage of the introduction of products under the trademark for retailers is ensuring the desired level of product quality. In today's conditions, trading companies mostly insist on generally accepted quality standards, and, thus, on full satisfaction of consumer demands (Čuzović & Sokolov Mladenović, 2013).

The highest revenues from products under the trademark in 2012 were achieved by “Wal-Mart”. With operations in 28 countries, the generated revenue on this basis amounted to 88.8 billion dollars, which is about 19% of the total revenue of this company in 2012. In the second and the third place, there are also American companies, “Costco”, with revenues of 23.2 billion dollars, and “Caremark” (retailer in the pharmaceutical industry), with revenues of 21.4 billion dollars (<http://www.private-label-buyer.com/articles/87669-top-35-private-label-retailers>, accessed on 30.05.2015.).

Trademarks originated in the United States in the 1960s, where they still are of great importance. In 2013, the market value of the products under the private trademark was estimated at 112 billion dollars, which is about 18% of the total turnover (<http://www.nielsen.com/us/en/newswire/2014/how-10-retailers-are-pushing-private-labels-potential.html>, accessed on 30.09.2015.). The market share of these products is growing from year to year. Chart 1 shows the importance of products under the private trademark in some countries.

Chart 1. The market share of products under the trademark in the selected countries in 2013



Source: <http://www.statista.com/statistics/244903/market-share-of-private-label-brands-worldwide-by-selected-country/> (30.09.2015.)

The first trademark on the Serbian market appeared in 2002, introduced by “C Market”. These were the brands under the names “HlebaC” (bread) and “ČistunaC” (cleaning agent). These products had a negligible share in the total turnover. The number of products sold under the trademark has risen since 2005, and is directly linked with

the expansion of “Delta Maxi” and the advent of regional retail chains, primarily “SuperVero”, “Metro”, “Mercator”, “Interex”, “Idea”, and “DM”. Under the influence of foreign retailers, domestic retail chains, such as “Delta Maxi”, “Univerexport”, “DIS”, and “Lilly” started the intense development of the concept of trademarks (Petljak, Štulec & Renko, 2011). Currently it is estimated that the market share of products under the trademark in Serbia is about 6%.

Creation and functions of trademarks

Intense competition on the domestic and foreign market has a stimulating effect on trading companies to include products with their own trademark or brand in the structure of their range of products. This business orientation means creating a brand that has the following characteristics (Alexander & Doherty, 2009, p. 210): different in comparison to the competition, reflects the image of quality at a low price, exists independently of the company, provides significant value for consumers.

Any creation of a successful brand by the trading company implies respect for the principles of diversity of products compared to the competition. In that sense, the companies that are characterized by brand orientation must observe their entire organization as an entity that is focused on creating brand. This is illustrated by Bridson and Evans’s (2004) opinion, who see brand orientation, in the context of trade, as a multidimensional synthesis which includes organizational values, beliefs, behavior, and practices (p. 403). Consequently, brand creation requires features such as diversity, functionality, quality of added value and symbolic value for consumers.

Each orientation to brand increases the performance of the company, as a result of the four key advantages (Bridson & Evans, 2004, p. 404):

1. The advantage of the range of products – the construction of different brand of products in relation to the competition;
2. The advantage of services to consumers – additional level of service in stores;
3. The advantage of communication – promoting functional characteristics of branded products;
4. The advantage of business formats – reflecting brand personality.

These elements point to the integration of brands and environment in which trading companies operate. In addition, they emphasize the importance of value for customers and different brand personality, which is important for differentiation of trading companies operating on various foreign markets.

However, when building a brand, it is important that trading companies pass through certain levels, or phases, which will allow them to successfully position themselves on the market. This view is confirmed in the research carried out by the theorist Burt, implying that the trading company passes through six levels in the development of trademark, i.e. brand, as can be seen in Overview 2.

Overview 2. Levels of brand development in trading companies

<p>Level 1: Non-branded products</p> <p>Character: Products for the satisfaction of basic needs</p> <p>Context: Demand exceeds supply</p> <p>Consumers: Basic knowledge about the usefulness of the product</p>
<p>Level 2: Brand as a reference</p> <p>Character: Physical attributes differentiate the product</p> <p>Context: Competitive pressures stimulate differentiation</p> <p>Consumers: Products are identified on the basis of differentiation</p>
<p>Level 3: Brand as a personality</p> <p>Character: Brand personality provides differentiation</p> <p>Context: Delivery of products with similar physical attributes</p> <p>Consumers: Brand knowledge leads to self-expression</p>
<p>Level 4: Brand as an icon</p> <p>Character: Networking reflects importance and identity</p> <p>Context: Brand educates the consumer society</p> <p>Consumers: Consumers accept the brand to create identity</p>
<p>Level 5: Brand as a company</p> <p>Character: Complexity of identity generates multifunctional communication between stakeholders and the company</p> <p>Context: Sophisticated brand</p> <p>Consumers: Consumers are interactively involved in creating brand</p>
<p>Level 6: Brand as a policy</p> <p>Character: Brand regulated by different causes</p> <p>Context: Heterogeneity of social value system</p> <p>Consumers: Self-actualization through brand affinity</p>

Source: Burt, S. (2000). The Strategic Role of Retail Brands in British Grocery Retailing. *European Journal of Marketing*, 34 (8), 87.

Passing through the previously presented levels of brand development leads to corporate branding, which is especially important in the process of internationalization of trade. This importance stems from the fact that corporate branding is not just company branding, but broader reflection of the company relations with diverse groups of stakeholders. Through corporate branding, trading company is able to better differentiate and position itself in the “thoughts” of stakeholders, enabling it to build value that is easily identifiable.

Balmer and Greyser (2006) link corporate branding of trading companies to six “C”s (character, culture, communications, conceptualization, constituencies, covenants) (p. 730):

- Character – points to the factors that create a distinct entity. These can be tangible and intangible assets of the company, or the company’s activities, its market, corporate assets, corporate structure, type of organization, corporate philosophy, and corporate history;

- Culture – points to a set of beliefs, values, and assumptions of employees, derived from the history and heritage of the company;
- Communications – points to various forms of communication with consumers and other stakeholders;
- Conceptualization – points to the corporate brand perception by consumers and key stakeholders. These perceptions can be latent and influence the behavior and views of the company;
- Constituencies – point to different groups of stakeholders, such as employees, investors, and local communities, enabling the company to operate on different markets;
- Covenants – point to company’s informal contracts with customers and other stakeholders, who have a loyalty to and belief in corporate brand. Contrary to the visible property that makes the entity of the company, these agreements indicate emotional assets that reflect a strong bond of stakeholders with the brand.

So, corporate branding is not just the branding of the company and products that make up the structure of the range. Based on the above facts, it can be concluded that the trading companies in the process of internationalization of business tend to be well positioned on the chosen market, through the construction of the structure of the corporate brand.

Partnership of trade with manufacturers – key to successful trademark

Through the introduction of a trademark, trading company seeks to differentiate itself against the competition and become recognizable among consumers. The image the products with trademark acquire positively reflects on the image of stores and even the entire trading company. In addition to these, there are numerous other advantages of the product with the trademark, which has already been discussed.

When it comes to products with the trademark, it should be noted that these are products that are manufactured by or based on the order of some trading company, which are sold under its name or trademark through its own sales outlets.

Products with the trademark or trade brand do not provide benefits only to trade, but also to manufacturers. Through these products, manufacturers are in a situation that allows them to reduce the risks of market failures, or strategic risk, given that trade is responsible for the placement of products with trademark and, possibly, the failure of such products. Then, the manufacturers take advantage of capacities and lower cost per unit of production as a result of economies of scale. Specifically, manufacturers can, based on the orders of the trade, produce a certain volume of products, and produce one part of the products under their own brand, which is reflected in the increase of production volumes, higher capacity utilization, and lowering costs per unit of product.

Business with trademark allows manufacturers to avoid high costs of introducing a new product on the market, considering that the trade is now responsible for the introduction of new products. Finally, manufacturers have the opportunity to market their

own brand along with the products with trademark, so that an image that a trademark has affects the building and improving the image of manufacturer brand.

The above advantages of doing business with the trademark, from the aspect of trade and manufacturers, increase the interest for cooperation between trade and manufacturers, in order to create successful trademarks.

One example of partnership between trade and manufacturers in the development of trademarks is METRO Cash & Carry, which operates within the METRO Group. METRO Cash & Carry is present in 29 countries worldwide, with more than 700 distribution centers and more than 120,000 employees. In 2012, the company generated sales of around 32 billion euros. It offers a wide range of products, designed for customers in the field of catering, trade, and craft.

METRO Cash & Carry Serbia started its operations in 2005 in Belgrade, and today has 7 distribution centers in Belgrade, Kragujevac, Niš, Novi Sad, Subotica, Šabac, Užice, and Požarevac. METRO Cash & Carry Serbia wants to provide a consistent development strategy and sustainable profitable growth through a unified approach as a responsible partner, primarily as an employer, then in business, social, economic, and cultural role of a reliable regional partner. METRO Cash & Carry started with the production of products under the trademark in 2006, and today has even 1,100 products in the range of trademarks that are manufactured in Serbia. What is probably the most important result in recent years is the fact that Serbian products are currently exported and sold in Austria, Croatia, Hungary, Romania, Czech Republic, Slovakia, Ukraine, and Moldova. It exports almost all types of products: preserves, canned vegetables, sweets, creams, snacks, hygiene products, and textile products. To Metro Moldova, for example, 16 producers export 206 items produced in Serbia. The greatest interest in the METRO network of distribution centers exists for Serbian items in the area of food, household chemicals, and textiles, produced under the trademarks METRO Cash & Carry, which guarantee to buyers in other countries the quality and durability of these products.

METRO Cash & Carry increased the number of manufacturers from Serbia who are involved in the program of trademarks, and it is also planned to increase the volume and number of local products that will be found in their stores across Europe. Through the system METRO Cash & Carry, manufacturers from Serbia have placed their products in eight European countries, six of which are the members of the European Union. The program of METRO Cash & Carry trademarks includes 155 manufacturers from Serbia, 96 in the food sector, 26 in the area of household chemicals, and 33 in the non - food sector.

METRO Cash & Carry trademark has brought a number of advantages to manufacturers participating in the partnership, such as: secured production of pre-agreed amount of goods, significant reduction of the costs of production and transportation, eliminating investment in marketing, market research, presentation, distribution, and sales promotion.

However, in order for the manufacturer to start producing products for METRO, it is necessary to test products, which must meet quality and capacity of production and be sufficient to constantly cover the necessary amount of goods. Quality control inspects the manufacturing plant unannounced several times a year. Metro Cash & Carry develops trademarks in cooperation with its professional customers in the commercial, catering, and office sectors, and thus adapts them to their specific needs. As a result of

partnerships with manufacturers, METRO Cash & Carry offers six exclusive trademarks on the Serbian market: *Fine food, Horeca Select, Rioba, Aro, H-line, Sigma*. They are developed in cooperation with customers, who have expressed their specific wishes regarding the quality, characteristics, packaging, and price (<http://www.metro.rs/public/naslovna/asortiman/robne-marke>, 6.10.2015.).

Conclusion

The partnership between manufacturers and trade has become imperative in modern business conditions. The stage of conflict between the two sides has shifted to the stage of partnership relations in different business segments. One of them, which has in recent years gained importance in many economies, is the segment of the trademark. The paper specifically analyzed different forms of partnership between trade and manufacturers. The subject of specific analysis was the trademark, its forms, creation, and functions. The fact that partnership between trade and manufacturers is the key to successful trademark is especially emphasized in the paper. The work pointed out numerous examples of trademark development by the leading trading companies. The theoretical part of the paper pointed to the advantages of trademarks for manufacturers and trade, which confirmed the starting hypothesis. Further confirmation of the starting hypothesis lies in the analysis of the case study of the trading company METRO Cash & Carry Serbia, which, in the field of trademarks, develops partnerships on the Serbian market with 155 manufacturers, which brings numerous benefits to both sides.

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LEADERSHIP ROLE IN CERTAIN PHASES OF KNOWLEDGE MANAGEMENT PROCESSES

Abstract

Leader has a crucial role in the process of knowledge management. In order to be successful, leader has to possess qualities and skills that create the conditions for creating, sharing and use of knowledge in organizations. However, apart from the creation, transfer and use of knowledge, it is essential that it promotes and creates new knowledge that will contribute to creating value for the organization. The aim of this work is to point out the necessity of knowledge management, and to suggest the styles of leadership at various stages of knowledge management. The research is of theoretical nature and method of analysis will be used. In this paper we will firstly describe leadership styles. Then we will expose phase of the process of knowledge management. Finally, we describe the role of the leader in the individual stages of the process of knowledge management. By analyzing the styles of leadership and phases of knowledge management process, we have found that the roles and tasks of leaders differ in the stages. Therefore, it is necessary to apply different leadership styles. According to this, different stages of the process of knowledge imply different styles of leadership.

Key words: leadership, style of leadership, knowledge management

JEL classification: M21, M12

УЛОГА ЛИДЕРА У ПОЈЕДИНИМ ФАЗАМА ПРОЦЕСА УПРАВЉАЊА ЗНАЊЕМ

Апстракт

Лидер има круцијалну улогу у процесу управљања знањем. Да би био успешан, лидер треба да поседује особине и способности које стварају услове за креирање, размену и употребу знања. Међутим, сем стварања, трансфера и употребе знања, неопходно је да се оно унапређује и ствара ново знање које ће допринети креирању вредности за организацију. Циљ овог рада јесте да укаже на неопходност управљања знањем, као и да предложи стилове лидерства по појединим фазама управљања знањем. Истраживање је теоријског карактера и користиће се метода анализе. У раду ћемо, најпре, описати стилове лидерства. Затим ћемо изложити фазе процеса управљања знањем. На крају, описујемо улогу лидера у појединим фазама процеса управљања знањем. Анализирајући стилове лидерства и фазе процеса управљања знањем утврдили смо да се улоге и задаци лидера

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разликују по фазама. Стога је неопходно применити различите стилове лидерства. Према наведеном, различите фазе процеса управљања знањем имплицирају различите стилове лидерства.

Кључне речи: лидерство, стилови лидерства, менаџмент знања

Introduction

The interest in leadership and knowledge, as a certain phenomenon of business success in modern organizations, becomes more and more actual and significant. Leadership is the most frequently researched processes of organizational behavior and management which have marked the end of the 20th century and the beginning of the 21st century. Leadership is often described as a process through which an individual has influence on the group to obtain common goals (Northouse, 2013, p. 5). Leaders have an important role in their organizations. They have influence on the performance of their team (Pirola-Merlo, et al, 2002). The power of leadership and leaders can be seen in the effect of their ideas, abilities to motivate and inspire their associates to accept changes, to constantly acquire knowledge and to share it with other members of organization. Modern society is the one which is founded on knowledge. Nowadays, knowledge is the most wanted merchandise, the most valuable resource of an organization and the source of its competitive advantage. Knowledge is a factor of vitality, innovation of an organization and driving force which affects efficient usage of all the resources in organization. Knowledge is the only resource which is not diminished by sharing; rather, by using and sharing it, the overall knowledge of organization is expanded. Management of knowledge represents the process which starts with the creation of knowledge, than it is expanded through organization, memorized and at the end, that knowledge is used. Without efficient leadership, there is no efficient knowledge management. So, a leader is the one who should create organization which provides conditions for creation, sharing, using and acquiring new knowledge in organizations.

The goal of this work is to point out the necessity of knowledge management, as well as to suggest the styles of leadership through certain phases of knowledge management. The basic hypothesis, we start with in this work is that the roles, tasks and leadership styles are different according to phases of knowledge management process. Apart from this, in the work, we start from the point that: leadership has a key role in producing organizational performances, leadership is the most valuable property of a company which makes a difference among successful and unsuccessful organizations, a leader has a crucial role in knowledge management, knowledge represents the most valuable resource of organization. This work is of theoretical character and the method of analysis will be used. The work consists of three parts. In the first part, the styles of leadership will be described: charismatic, transformational, team and network leadership. The second part describes the process of knowledge management through phases of: identify, store, share, use, learn, improve and create. Third part analyzes the role of the leader according to certain phases of knowledge management; his tasks, characteristics, skills and abilities, and suggests the style of leadership which will be most suitable for a certain phase.

Leadership styles

Charismatic leadership. The word charisma originates from the Greek word *χάρισμα* – a gift and signifies a rare characteristic of human beings to possess great charm, attractive personality and sometimes a strong ability of persuasion and unforced directing of the course of conversation in desirable direction. (www.Wikipedia.org/sr/harizma). Charisma, as a dominant characteristic of a leader was firstly affirmed by Weber, defining it as a „certain characteristic of individual personality thanks to which he or she is distinguished among common people and is treated as having supernatural, superhuman or at least certain extraordinary powers and characteristics “(Robbins & Judge, 2010, p. 431). Later, Robert House developed a theory of charismatic leadership, according to which the followers ascribe to individuals heroic or extraordinary abilities of leadership when they notice certain types of behaviour.

According to House’s theory, important characteristics of charismatic leader are (Stoner & Freeman, 1992, p. 501):

- extremely high level of self-respect,
- high level of domination and
- strong belief in personal attitudes

Key characteristics of charismatic leader are (Conger & Kanungo, 1998, p. 94):

- *Vision and articulation.* They have vision as an ideal goal which proposes a better future, and they can explain significance of that vision with the concept which is clear to anyone.
- *Personal risk.* Readiness to take over high risk and devotion to achieve that vision.
- *Sensitivity to followers’ needs.* Perception about abilities of others and reacting to their needs, feelings and unconventional behaviour. Maintaining behaviour which is considered unusual and is confronted with the norms.

Thus, charismatic leader is a person who has a clear vision, ability to express vision, great capacity to influence his followers, self-confidence, ability to implement changes, motivate followers and take on risks. Leader with mentioned characteristics has great influence on the satisfaction of his followers and achieving high performances of an organization. Business with charismatic leader motivates people to make more effort at work and devote themselves more to the realization of ideas which their leaders represent. The role and significance of a charismatic leadership is dominantly expressed in critical situations, conditions of uncertainty and risk, and in the need to implement quick and radical changes in organization.

Transformational leadership. Transformational leadership represents the highest level in the leadership development and it incorporates the following leader skills: *idealized influence* (leader enables vision and the sense of a mission, implants pride, gains respect and trust); *inspirational motivation* (leader communicates high expectations and expresses important intentions in a simple way); *intellectual stimulation* (ability of a leader to promote intelligence, rationality and careful problem solving) and *individual consideration* (leader treats every individual separately, pays attention to him or her, instructs and advises) (Bass, 1990, p. 19-31):

Transformational leadership purports concern for the development of creativity and innovation of followers and development of their potential. Transformational leaders motivate followers to surpass personal interests for the benefit of organization, motivate them to work more than they are expected to, encourage the sense of task significance

that should be done for the prosperity of organization as a whole. By applying the transformational leadership style, followers make an additional effort, accomplish greater productivity. The sense of satisfaction with the followers is increased, fluctuation and absenteeism is decreased, which leads to high performances of organization.

Transformational leader should have specific characteristics such as (Galpin, 1996, p. 70):

- *Agent of change qualities.* Important characteristic of transformational leader is to encourage and carry out changes and successfully design flexible, entrepreneurial and innovative organizations.
- *Courage.* Transformational leaders take risks.
- *Candidness and belief in followers.* They are characterized by candidness, sincerity and belief in followers by which they tend to include them in the process of decision making.
- *They are guided by values.* These leaders create a set of values that should be aspired to and they behave in accordance to them.
- *Life-long learning.* They are capable to change their behaviour, values and attitudes radically, if the circumstances demand to.
- *Ability to face complex, ambiguous and uncertain situations.* They are characterized by ability to face every situation and solve unstructural problems.
- *Visionary abilities.* Transformational leaders are capable to create vision, to interpret it successfully to their followers and encourage them to realization of such formed picture of a future desired state of organization.

We will add the following to the mentioned characteristics of transformational leader:

- *Creativity.* They are creative, but they encourage and accept creativity of their followers.
- *Team orientation.* Transformational leaders create teams, affirm the significance of team work and exchange of ideas, opinions and attitudes among the team members.
- *Appreciating others.* Transformational leaders acknowledge and value attitudes and opinions of their followers. They have the skill to listen and encourage two-way communication.
- *Tutoring.* Transformational leaders are tutors, they instruct, correct and direct their followers.
- *Responsibility.* Important characteristic of these leaders is taking risks and responsibility.
- *Credit.* They give credit and praise to their followers for successfully completed activity.

Team leadership. In modern business conditions, teams are affirmed, so team leadership gains on actuality and significance. Team leader is faced with numerous challenges in: creating and leading teams, building trust, transfer of information, giving autonomy to team members, authority assignment, intervention time and so on. Important roles of team leader (Robbins & Coutler, 2005, p. 435):

- *Connection with the outside world.* This role of a leader is referred to the higher levels of management, other inner teams, clients and suppliers. Leader presents to other groups, provides necessary resources, explains expectancies

of others, collects informations from the surroundings and forwards them to the team members.

- *Team leader solves problems.* Leader should solve conflict situations, he helps and mediates with the problem solving in the team.
- *Leader manages conflicts.* Leader has a task to define the problem, discover source of the problem, identifies participants of the conflict, offer strategies for solving conflict situations.
- *Teachers.* Team leaders explain expectancies and roles, teach, support, encourage and help team members to improve their performances.

Network leadership. Business globalization, fast changes and usage of information-communication technologies have initiated the appearance of network leadership. In order to respond to survival challenges, leaders must build skills of work in the network, connect with the followers which are often physically separated. Communications through e-mail, absence of face to face contact and non-verbal communication demand additional skills and abilities from the leader. Writing skills, writing style, ability to „read between the lines“ and using of modern technologies become prominent.

Generally speaking, characteristics of a leader with good network skills can be divided into: basic characteristics, relationship towards the members of the network, administrative characteristics and other characteristics (Raz, 2003, p. 90-98).

Some of the *basic characteristics* of good network leader would be: she/he constantly develops his network; he builds network before he needs it; circle of people he/she is connected to is varied and he/she constantly expands it; he is a member of many groups, associations, clubs; he completes his network with his members' networks; when he has a problem, he can turn to the best person in the profession. He can turn to any member of his network when he needs to; he encourages members of his network to develop their own networks; he collects information in advance about interests, needs and common ground with the persons he is about to meet.

Good network leader constantly builds good relationship with the *members of his network*. He: cares about people, learns about them, listens to them, spends time with them, pays attention to them and helps them. He always builds and wins over trust of his network members. He is always in contact with them and attends all important events. He organizes socializing and gathering of his network members.

Knowledge management

Knowledge management is a process of organizational performances promotion through creating and applying the process, system, structure and culture that supports creating, exchange and usage of knowledge (DeLong & Fahey, 2000, p. 113). For the efficient inclusion of knowledge management system, it is necessary to provide adequate context which incorporates: „culture, knowledge assesment, knowledge processing and knowledge implementation“ (Award & Ghaziri, 2004, p. 60). Knowledge management is often described as a process in which knowledge is created, won, stored, shared and applied (Mašić, 2010, p. 501). „Knowledge management is the *explicit* and *systematic* management of *vital knowledge*- and it is associated with the *processes* of creation, diffusion, use and exploitation- in pursuit of business objectives“ (Skyrme, 2011).

The process of knowledge management is completed through phases and it pervades the whole organization. Evans, Dalkir & Bidian (2014) mention seven phases

of management learning process, and they are: „identify, store, share, use, learn, improve and create“ (p. 91). These phases will be explained in the following text.

Identify. The need for knowledge can arise for many reasons, whether it is solving strategic or operative problems, making decisions, analysis of knowledge gap or the need for innovations. If there is the need for knowledge, it should be established whether it can be *identified* within an organization or it should be created/acquired. Sometimes, there is the need for identification of existing knowledge property, but also for creation of new knowledge. *Identification of knowledge.* The phase of identification includes codifying of existing knowledge property. Knowledge can be taken from knowledge storage through the form of electronic or printed documents. In this phase, implicit knowledge can be identified through the method of brainstorming and discussion sessions. The phase of identification includes analysis and assessment of knowledge property which is based on established organizational culture, values and attitudes, as well as specific organizational rules. During the analysis and assessment of knowledge property, it is important to determine relevant information which can contribute to problem solving.

Store. Organizational knowledge represents important resource of organization and it has to be saved, memorized and available to all the organization members. In that way, connection between organization members becomes stronger and they become aware of their significance in creation of new knowledge. In this process, knowledge can be modified and improved. When knowledge is founded as an important value of organization, based on analysis and assessment in the phase of identification and creation, it is kept as an active component in organization memory. For this, more forms of codified knowledge may have been needed. Many forms of tacit knowledge can be saved in the form of maps, models, nomenclatures, documents. However, knowledge storage can't be accidental collection of knowledge property, no matter of its individual or collective value. Knowledge asset must be saved in a structured way which enables efficient using, manipulating, sharing. Main steps in the system of knowledge saving would be: a) identification of real problem; b) identification of knowledge that should be saved and in a certain form; c) defining the process of saving and tracking knowledge and the role of employees in acquiring knowledge; d) integration of the process of saving knowledge; e) adjusting the documents of knowledge to the hierarchal structure and creating documents in accordance to the rules of memorization process and saving knowledge; f) supervision and follow up of feedback and knowledge transfer through organization (www.powerdocuments.com/knowledgeretention.pdf).

Share. The next phase in the process of knowledge management is knowledge sharing, or diffusion of knowledge in organization. In this phase, expanding of existing and new knowledge through organization is present. Knowledge should be available to everyone, otherwise it becomes useless.

Knowledge property is taken over from organizational memory, and it is further distributed inside or outside organization. Frequency of knowledge sharing can be established in advance or ad hoc, according to usage. The process through which knowledge is shared is important, because employees are rarely aware of their existence, especially when new knowledge is created. It is not unusual for organizations to look for knowledge outside their boundaries. Existence of explicit, dynamic and flexible network of expertise encourages cooperation and it can contribute a lot to the exchange of organizational knowledge property. Explicit knowledge can be easily shared with others. Problem appears when implicit knowledge should be shared. For that purpose, it is desirable to develop direct communication between the organization members, as to develop discussion and exchange of knowledge. Then, forming of so called „mutual practice“, as an informal group of people inside organization which solves problems for

which it has knowledge, expertise, skills and experience. Division of implicit knowledge can be stimulated through programs of instruction and mentoring, as well as narration and anecdote. It is also important to choose optimal combination of technology and channels for information sharing, because different media of communication have their advantages and disadvantages. The choice of media is not just a function of specific expert services, but it also depends on the maturity of knowledge management in organization. Technologies that are most often used for sharing of knowledge property include communication and cooperation between technology and current clients, management of supplier chain and systems for decision support.

Use. Existing knowledge property can be used for problem solving, decision making, improvement of business efficiency in organization and so on. In an organization, there is always a level of tacit knowledge which can be applied. The larger and more complex knowledge property is, the harder is to „unpack“ value out of it. So, in order for that knowledge to be efficiently applied, it is sometimes necessary to hire experts. The phase of using the knowledge is a key for integration of tacit knowledge forms. Conversion of explicit into implicit knowledge is applied through different methods of employee trainings, such as: simulation, active learning, gaining experience at work and so on. In the phase of knowledge usage, different workshops and communities for practice can be formed. Employees use expert systems, modern communication technology and cooperation for the realization of mentioned activities.

Learn. Knowledge property which was shared and used in the previous phases can be used as a basis for creation of new and improved knowledge property. Knowledge usage leads to gaining experience of employees, because they interpret the influence of knowledge in their working environment. If the existing knowledge property is insufficient, it is necessary to intensify the phase of identification and knowledge creation. In that way, double circle of learning is put into practice and life cycle of knowledge starts over. In the phase of learning, following activities are used: benchmarking, mutual practice, lessons from the past, knowledge gap analysis and so on.

Improve. Learning which takes place in the previous phase leads to further refinement of knowledge property. Knowledge which is identified or created should be saved in organizational memory and applied according to usage. In this phase it is very important to save improved knowledge property, so it can be efficiently used in the future. In this phase, critical decision is made whether to keep improved knowledge in organization or take it outside organization for further use.

Create. If necessary knowledge hasn't been found, during research into identification phase there is the need for creating new knowledge property. Need for creating new knowledge property can appear when existing knowledge property only partially satisfies need for knowledge. Mutual organizational initiatives which help creation of new knowledge property include: expert interviewing, building prototypes, information and analysis about the work process, competency and process mapping.

Role and Characteristics of a Leader in Certain Phases of Knowledge Management Process

In the phase of *knowledge identification*, a leader should create organizational environment and culture which supports organizational and team learning. Leader should support and encourage learning with his behaviour and direct organization members' effort to learn. Leader as a teacher helps people in organization to develop system understanding,

expand their capacities in order to understand complexity, make vision clear and improve mutual mental models. The task of a leader is to create organizational environment which is good for learning and to implement cultural values of learning and development in the awareness of employees. It is very important to develop culture in which employees share their knowledge and cooperate with others. A leader should support team learning and work and not individual domination. Favourable climate in organization is the one of cooperation, exchange of ideas and attitudes through dialogue which leads to constructive problem solutions. It means that in this phase a leader should have ability to encourage learning, ability to interpret and share his own experience, ability to create environment for learning and encourage creative dialogue. In order to achieve that, a leader should have characteristics of *charismatic, transformational and team leader*.

The role of the leader in the phase of *storage knowledge* is of crucial importance both from the aspect of saving knowledge in the bases of knowledge and in making decisions about the level of knowledge which should be dislocated outside organization. In each process of saving knowledge, the role of a leader is important in building confidential organizational culture, establishing hierarchy of information and knowledge, strengthening of communication networks which can provide efficient exchange of information and knowledge. In times when different forms of network design are formed, especially critical moment is making decision about the level of knowledge which should be kept in order to improve its own competency and the level of knowledge which can be dislocated outside organization. Such decisions can have long term consequences for organization survival. The task of a leader is to identify knowledge which should be kept and in a certain form, to suggest the importance of collective knowledge and knowledge saving. The process of knowledge saving demands from a leader to have *skills for networking*, to be a *team leader*, to be *charismatic* and to have *capability of a transformational leader*.

In the phase of *knowledge sharing* a leader should create culture of knowledge sharing through: a) building connection between knowledge sharing and practical business goals; b) adjusting the style of organization with the way of implementation of knowledge sharing culture; c) promotion of awards and praise to people who contribute to the development of knowledge sharing culture; d) providing resources which will help the development of network for sharing knowledge between the organization members; e) connecting knowledge sharing with the values of organization; f) encouraging individuals who can transfer knowledge from one to the other; g) connecting organization members who already share ideas and knowledge in organization (McDermott & O'Dell, 2001, p. 76-84). In this phase, the role of a leader is important in forming mutual practice, encouraging organization members to exchange ideas, encouraging to have dialogues and discussions. In this phase, a leader should have characteristics of *transformational, charismatic, team leader and network leader*.

The role of a leader in the phase of *knowledge usage*. Acquiring, storage and knowledge sharing are needed, but not sufficient conditions for increasing the value of organization through the process of knowledge management. For successful establishing the process of knowledge management, the use of existing, won, created, saved knowledge is needed. Application of knowledge should be a part of every-day activities of all employees. Lessons learned in the past can do good for solving similar problems in the future. In the phase of knowledge usage, the task of a leader is to perform all necessary activities in order to use that knowledge. His role in creating systems of awarding organization members who have shared their knowledge with others and the ones who contributed to application of knowledge with their activities is especially important. A leader should create a climate of innovation and creativity which will contribute to improvement of individual and collective knowledge. Furthermore, a leader should improve communication channels and refresh

knowledge base. For performing of these tasks, a leader should have conceptual skills, to be a good team leader, motivate, mobilize and inspire his associates. So, he has to have characteristics of *transformational, charismatic and team leader*.

In the phase of *learning*, a leader should encourage and support the culture of team and organizational learning. Sengi (2003) points out that „organizations which will trully advance in the future will be the ones which will discover how to encourage human commitment and ability to learn at all the levels in one organization“ (p. 8). Successful leaders encourage learning and direct effort of organization members to learn and share their knowledge with others, implement cultural values of learning and development in the awareness of employees, build the climate of trust, good interpersonal relations and are tolerant to mistakes (Micić, 2010, p. 52). The task of a leader is to perform techniques of acquiring new knowledge, form team of experts for acquiring new knowledge. In this phase, also, the role of a leader is very important - of such a leader who possesses characteristics of *charismatic, transformational and team leader*.

In the end, in the phase of *improvement*, it is demanded from a leader to have all those characteristics which we have mentioned at the phase of saving, sharing and applying knowledge. Based on that, in this phase as well, characteristics of *transformational, charismatic, team leaders and network leaders* are needed.

Research results about the role of leadership in knowledge management process in Serbia show dominant role of a leader in providing knowledge in organization. Over 90% of interviewed people supported the attitude that leader knowledge and skills are obtained through training and learning and that they can be transferred by implicit or explicit mechanisms. Interviewees appreciate the leaders whose success is founded on expertise more than they appreciate the leaders whose success is founded on their charisma. The research has shown that the leader role is greater in creating good environment for learning through the application of motivation mechanisms, than the direct contact with the leader. In the process of creating and knowledge transfer through organization, a leader should provide conditions for information exchange, good communication, instruction and training of employees (Petković, Aleksić & Božinović, 2011, p. 13-16).

Conclusion

We have shown theoretical aspect of leadership styles in this work, the phase of knowledge management and the role of a leader in knowledge management process. We have established that in different phases of knowledge management process, a leader performs different tasks, so, according to that, it is necessary for him to have adequate characteristics, skills and abilities. We have shown that each of the mentioned phases needs different approach, so, the leader role is different and leadership style should be adapted to each phase one at a time. With this, we have confirmed the starting point of the work.

In modern business conditions, leadership and knowledge become the most valuable resources of organization. A leader has a very important role in organizational knowledge management. With his behavior, values, attitudes, characteristics, skills and abilities, he greatly influences the creation of organizational knowledge. He has an important role in creating environment which encourages individual and team learning. A leader should support and encourage the culture of creating, sharing, usage, promotion and acquiring new knowledge in organizations.

Future research should be directed towards the practical review of theoretical postulates.

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POTENTIALS AND ANALYSIS OF THE PRIMARY CROP CULTIVATION IN THE MUNICIPALITY PECINCI⁴

Abstract

Territory of the municipality Pecinci area is characterized by intensive agricultural production within which the most developed are crop and vegetable production. Favourable climatic characteristics, configuration of terrain, as well as soil structure are favourable to development of these sectors of agriculture. Accordingly, in the paper were presented characteristics and peculiarities of this municipality area, as well as the crop cultivation potentials, according to data of statistical yearbooks of the Republic of Serbia Statistical Office. There was also analyzed production and trends of industrial and vegetable plants, as well as fruits and grapes through basic indexes for the ten-years-lasting period (2003-2013). In accordance to available data, we have concluded that the municipality Pecinci has significant production capacities, on which is possible to develop a modern agricultural production which can satisfy consumers' needs, it preserves natural resources and provides development of rural areas.

Key words: Pecinci, agriculture, crop cultivation.

JEL: Q10, Q19, R00

ПОТЕНЦИЈАЛИ И АНАЛИЗА ПРИМАРНЕ БИЉНЕ ПРОИЗВОДЊЕ У ОПШТИНИ ПЕЋИНСИ

Абстракт

Територија подручја општине Пећинци се одликује интензивном пољопривредном производњом у оквиру које је највише развијено ратарство и повртарство. Развијању ових пољопривредних грана погодују повољне климатске карактеристике, конфигурација терена, као и састав земљишта. Сходно томе, у раду су, на основу података Статистичких годишњака Републичког завода за статистику и података из неких од докумената локалних истраживања, приказане карактеристике и специфичности

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подручја ове општине као и потенцијали биљне производње. Анализирана је производња и кретање производње индустријског и повртарског биља, као и воћа и грожђа кроз базне индексе за десетогодишњи период (2003-2013. година). На основу расположивих података дошло се до закључка да ова општина поседује значајне производне капацитета на којима је могуће развијати савремену пољопривредну производњу која задовољава потребе потрошача, чува природне ресурсе и омогућава развој руралних средина.

Кључне речи: Пећинци, пољопривреда, биљна производња.

Introduction

The municipality Pecinci, as one of the smaller municipalities in Autonomous Province of Vojvodina, with numerous heavily populated settlements, belongs to Srem District. It lies actually in the sub-region of Srem, in the part of a wider geographic region Podluzje. Although it lies on the territory of AP Vojvodina, this municipality belongs to the Belgrade Metropolitan Area (functional urban area), together with Stara Pazova, Opovo, Pancevo, Indjija and Ruma (http://www.pecinci.org/opstina_pecinci/o_nama.1.html).

The area of the territory Pecinci amounts 488.65 km² (average for APV = 479.52 km²) and by its size, it is in the eighteenth place in AP Vojvodina. The municipality Pecinci has 19,679 inhabitants (*Municipal Yearbook, 2014*).

A centre of the municipality is the settlement Pecinci, which lies in the north part of this municipality. Eccentric position of the central settlement, as well as the vicinity of developed city centres, especially Belgrade, affects the orientation (in many functions) of individual settlements of this municipality toward these centres.

Populated settlements in the municipality Pecinci are: Asanja, Brestac, Dec, Donji Tovarnik, Karlovic, Kupinovo, Obrez, Ogar, Pecinci, Popinci, Prhovo, Sibac, Sremski Mihaljevci, Subotiste and Simanovci.

In the vicinity of Pecinci lies Obedska bara (Obedska Marsh), the protected reserve of fauna, very attractive with surrounding forests in which are hunting-grounds and vacation areas. It is, in international sense, a significant plant area, as well as international significant area for birds.

Advantageous climatic characteristics, configuration of the terrain, as well as favourable soil structure (chernozem and brown forest soil) are favourable for agricultural production.

Production and trends of production of industrial and vegetable crops, also and fruits and grapes is seen through the indices for the ten-year period (2003-2013).

Results and discussions

The results are shown by crops after which they give directions for the future development of agriculture in this municipality.

Crop cultivation

Looking from the viewpoint of economy, land is a necessary condition for agricultural production and the most important element of all agricultural activities. As

a natural gift it has no value. However, from the moment of its use in the process of production, it becomes the product of human activity, which could be sold and bought at a certain price, functioning as a potential for the production of goods and services. From that reason, almost all countries initiate and apply in practice concrete measures regarding the way of land use, improvement of its production capability, property protection and ecosystem protection (Kljaji, et al., 2011.).

Total utilized agricultural land in the Republic of Serbia in the year 2013 was 5.069.000 ha, according to data of the Statistical Yearbook of RS for the year 2014. Of which 3.298.000 ha (65%) was under plough land and gardens, 239.000 ha (5%) was under orchards, 50.000 ha (1%) under vineyards, 653.000 ha (13%) under meadows and 829.000 ha (16%) under pastures.

The region of Vojvodina, where the municipality Pecinci belongs to, according to the same source, has 1.745.000 ha of land used in agriculture. Of which 1.579.00 ha (90%) are plough land and gardens, 19.000 ha (1,2%) are orchards, 8.000 ha (0.8%) are vineyards, 39.000 ha (2,2%) are meadows and 101.000 ha (5,8%) are pastures.

The municipality Pecinci is typically rural municipality, with low to medium population density (a hundred inhabitants per a km) and a high percentage of active rural population.

The north and mid part of the municipality Pecinci is under agricultural land, while the south part cover, beside the agricultural land, also large complex of forests and forest land within the SNR “Obedska bara” in the protected zone.

In the table 1 was shown an utilized agricultural area on the area of this municipality for the period 2000-2013, through plough land and gardens where dominance can be seen, and then in the form of orchards, vineyards, meadows and pastures.

Table 1. Structure of using agricultural land on the area of the municipality Pecinci for the period 2000-2013

Year	Agricultural area	Arable land and gardens					orchards	vineyards	meadows	grasslands	Ponds, reeds
		total	thereof								
			wheat	Industrial plants	Gardening plants	roughage					
2000	34408	31423	21578	3850	3272	3367	241	21	780	1052	891
2001	34129	31128	20711	4053	3062	2245	255	24	793	1044	888
2002	34129	31128	20711	4053	3062	2245	255	21	793	1044	888
2003	34591	31528	20344	4911	2948	2176	217	20	846	1093	887
2004	31690	31604	21370	3693	3427	1865	218	20	854	1106	888
2005	34690	31667	21241	3318	3373	1739	210	20	799	1106	888
2006	34599	31512	20451	2965	3727	1995	211	20	849	1116	891
2007	33833	31492	21607	3061	3952	2216	229	20	978	1114	-
2008	34710	31786	22201	3491	3674	2101	214	20	811	1002	-
2009	34710	31571	22381	3190	3497	2279	214	20	936	1092	-
2010	34710	31533	22829	3072	3378	2159	209	20	959	1112	-
2011	34705	31537	22531	3697	3173	2053	209	20	960	1112	-
2012	26249	24938	23332				211	6	1094		-
2013	26249	24938	23332				211	6	1094		-

Source: author's calculation based on data from the Statistical Yearbook of the Republic of Serbia for the corresponding year

If we analyze the year 2013, as the last year in the table 1, we can conclude that in the structure of arable land, agricultural land, the highest share have plough land and gardens (grain, industrial crops, forage crops and vegetables) with 95%. Orchards with 0,8% and vineyards with 0,02% cover negligible areas of this municipality, while meadows and pastures participate with 4,2% in the structure of agricultural land, occupying larger areas in regard to fruits and grapevine. The rest 0,78% are fish ponds, reeds and marshes.

Table 2. Production of industrial plants on the area of the municipality Pecinci

Year	Wheat	Compared to the base year 2003	Corn	Compared to the base year 2003	Sugar beet	Compared to the base year 2003
	(t)	(%)	(t)	(%)	(t)	(%)
2003	14.836	100	38.988	100	39.999	100
2004	31.814	114,4	70.548	80,9	30.790	77,0
2005	17.187	15,8	85.022	118,1	24.039	60,0
2006	15.631	5,3	63.723	63,4	21.262	53,2
2007	20.429	37,7	42.480	9,0	17.872	44,7
2008	20.174	36,0	58.676	5,04	14.020	35,1
2009	17.277	16,4	75.352	93,2	24.269	60,7
2010	14.443	97,4	74.602	91,3	95.43	23,9
2011	19.797	33,4	63.042	61,7	117.25	29,3
2012	19.096	28,7	22.406	-42,5	7.134	17,8
2013	30.433	105,1	60.319	54,7	7.800	19,5
Everage	20101,5	-	59559,8	-	18950,3	-

Source: author's calculation based on data from the Statistical Yearbook of the Republic of Serbia for the corresponding year

According to the presented table 2, the production of industrial plants on the areas of Pecinci municipality, where has been shown trends of wheat, maize and sugar beet production for the period 2003-2013, we can notice that there was increase of wheat and maize production, while regarding sugar beet had decreased in the observed ten-years-lasting period. By calculation of a basic index in regard to the year 2013, for all three mentioned crops, we have concluded the following:

The production of wheat in 2014 had the highest increase of production of 114,4% and in the last year, 2013, of 105,1%. Chronologically observed, according to the basic indexes, production has ranged cyclically, in positive sense, because in some years production has increased more, and in some years less. For example, in the year 2007, production was increased for 37,7%, in 2008 for 36,0%, in 2011 for 33,4% and in 2012 for 28,7%. However, there are years with minimum increase, like in 2005 (15,8%) and 2009 (16,4%). Only in 2010, according to calculation, production was for 2,6% lower in regard to the basic year 2003.

Regarding maize, the highest increase was in 2005 (118,1%), then followed 2009 with increase of 93,2%. The approximate increase was in 2010 (91,3%), in 2004 a production index was amounted 80,9%, in 2006 for 63,4%, in 2011 for 61,7% and in 2013 is 54,7% in regard to the basic year. However, there were years with lower percentage increase of production, as: the year 2007 with 9,0% and 2008 with only 5,04% of increase in regard to the basic year 2003. Only in 2012 was noticed decrease of maize production in regard to the basic year, for 42,5%.

Calculating the index in regard to the basic year, we can notice a constant decrease of production regarding sugar beet, especially in 2012 (for 82,2%) and in 2013 (for 80,5%). In 2010 and 2011 decrease of index had ranged from 76,1% to 70,7%. Slightly lower production of sugar beet was in 2008 for 64,9%, in 2007 for 55,3%, in 2006 for 46,8%, in 2005 for 40,0%. The smallest decrease of production percentage was in 2004 and it was amounted 23,0%.

For successful business activity in the field of vegetable growing, it is necessary to develop and organize a modern agricultural production, both outdoor and in protected space (green houses and cloches), along with application of modern mechanization, irrigation systems, fertilization and protection of soil and plants. It is inevitable, also, to provide equipment and to build objects for vegetable storage and placement improvement (Subić, Cecić, Vuković, 2008).

Table 3. Production of vegetables on the territory of the municipality Pecinci

Year	Sunflower (t)	Compared to the base year 2003 (%)	Beans (t)	Compared to the base year 2003 (%)	Potato (t)	Compared to the base year 2003 (%)
2003	4.170	100	266	100	2.406	100
2004	3.911	93,8	581	118,4	5.314	120,9
2005	3.067	73,5	460	72,9	5.663	135,4
2006	3.096	74,2	574	115,8	6.589	173,9
2007	2.705	64,9	398	49,6	6.874	185,7
2008	3.716	89,1	277	4,1	5.278	119,3
2009	4.328	3,8	405	52,3	5.220	117,0
2010	3.726	89,3	341	28,2	4.451	85,0
2011	4.884	17,1	399	50,0	6.134	154,9
2012	3.662	87,8	245	92,1	3.251	35,1
2013	5.505	32,0	420	57,9	4.573	90,1
Everage	3888,2	-	396,9	-	5068,5	-

Source: author's calculation based on data from the Statistical Yearbook of the Republic of Serbia for the corresponding year

As for vegetable production on the area of this municipality, for example was taken production of sunflower, bean and potato, for the observed period 2003-2013. According to calculation of the basic index, there was decrease of production in almost every year regarding sunflower production. The most significant decrease of production was in 2007 for 35,1%, in 2008 for 10,9%, in 2010 for 10,7% and in 2012 for 12,2%. As opposed to it, the biggest increase was in the year 2013 (32,0%), in 2011 (17,1%) and in 2009 (3,8%).

Regarding beans, the most significant increase of production was in 2004, 118,4%, then in 2006 the production was increased for 115,8%, in 2005 for 72,9% and in 2013 for 57,9% in regard to the basic year 2003. The smallest decrease of beans production was in 2012, 7,9%.

When it comes to potato production, by calculation of the basic index, there is a constant increase of production, so in 2007 it was increased for 185,7%, in 2006 for 173,9%, in 2005 for 135,4% and in 2011 for 154,9%. The smallest increase of potato production was in 2012, for 35,1% in regard to the basic year 2003.

To improve the growth of vegetable production in total and per capita, it is essential that the Ministry of Agriculture, institutes, agencies and other relevant institutions to

collect and process data, their activities more focus on small farmers and allocate more funds (premium, subsidies and other incentives) and the picture of agricultural production will be better (Grujić, et al., 2014.).

Fruit production as plant production is characterized by a number of comparative advantages in relation to other branches of agriculture. In addition to employment opportunities for large numbers of workers, fruit can be attractive not only for farmers, but for the enterprising people of all other occupations. It allows the use of areas with different climatic conditions, local character and use of soil of less productive capacity, and land less productive and less favorable in terms of physical, chemical and other properties, and land on steeper slopes (Kljajić, & Vuković, 2014.).

In the table 4 were presented trends in fruits and grape production on the area of the municipality Pecinci, where were also calculated the basic indexes in ten-year-lasting period.

Table 4. Production of fruits and grapes on the area of the municipality Pecinci

Year	Apples (t)	Compared to the base year 2003 (%)	Plums (t)	Compared to the base year 2003 (%)	Vine (t)	Compared to the base year 2003 (%)
2003	424	100	737	100	39	100
2004	350	82,5	702	95,2	66	69,2
2005	458	8,0	646	87,7	52	33,3
2006	558	31,6	872	18,3	66	69,2
2007	631	48,8	814	10,4	60	53,8
2008	531	25,2	736	99,8	120	207,7
2009	696	64,2	1.060	43,8	66	69,2
2010	292	68,9	330	44,8	41	5,1
2011	505	19,1	875	18,7	39	100
2012	226	53,3	432	58,6	39	100
2013	790	86,3	1.244	68,8	122	212,8
Everage	496,5	-	768,0	-	64,5	-

Source: author's calculation based on data from the Statistical Yearbook of the Republic of Serbia for the corresponding year

Fruit production was represented with *apple* production, where according to the basic indexes we can say that the biggest increase of production was in the year 2013, for 86,3% and in 2009 for 64,2%, which meant that the entire production of apples was increasing. However, there were three years when production was decreased, which was probably the consequence of weather conditions, which were unfavourable for these varieties of fruit. So in the year 2012 we had the biggest decrease of production in regard to the basic year 2003 (46,7%). Decrease was also noticed in 2010 for 31,1% and in 2004 when production was decreased for 17,5%.

The presented basic indexes for *plum* production point out to increase of this production in the analyzed period. In the last observed year 2013 production was increased for 68,8% and in 2009, it was increased for 43,8% in regard to the year 2003, taken as the basic one.

The years 2010 and 2012 were the years in which was the most significant decrease of plum production; in accordance to the basic indexes, in the year 2010 (even for 55,2%) and in the year 2012 with 41,4% lower production. Here also belongs the year 2005 with small index of production decrease of 12,3%, as well as 2004 with 4,8%.

Observing trends of *grape* production in this municipality, we can see that some years have approximately the same production as the years 2011 and 2012, according to the basic indexes, which in regard to other observed years with increase of grape production, represent decrease of production. The years with the biggest production of grape are: 2008 with 207,7% and 2013 with 213,8%, although in all other years there were increase of production of 53,8% and over 69,2% in regard to the basic year 2003. Only in 2010 was the smallest increase of production for 5,1%.

Considering the presented results we can conclude that this area of the municipality Pecinci is considered to be the area favourable for development of industrial plants and vegetable production, as well as for fruits and grape production, taking also into consideration a high percentage of employable rural population.

Directions of agriculture development in the next period

This is what characterizes agriculture of the municipality Pecinci as follows:

- Soil of relatively high production ability which ensures growing all varieties of crops and vegetables;
- Favourable climatic and pedological conditions;
- Favourable preconditions for bee keeping;
- Opportunities for growing medicinal herbs and flowers;
- Vicinity of big cities' markets as very significant consumers of agricultural products,
- Underdevelopment of farm holdings (natural character of production, lower yields in regard to agricultural enterprises, poor technological equipment and obsolescence of means for production, fragmented property and numerous elderly households),
- Bad performances of agricultural enterprises (poor technical equipment, obsolete mechanization, overabundant and inadequate structure of employees with regard to needs, unfavourable economic results, inefficient production), and
- Inadequate treatment and over-utilization of agricultural land.

The basic planning orientation for intensive use of agricultural land and for its protection implies primarily a rational farming of agricultural land and its protection, organization and use according to sustainability principles. Protection of top quality agricultural land as the natural resources and potential for agriculture development should be priority. It is also necessary to undertake some measures and activities to protect agricultural land on those terrains jeopardized by the erosion process and by raising and maintaining the agro-protective belts, by planting perennial woody plants, as well as by a permanent control of implementing these measures by the authorities.

The basis of crop production in this municipality area is primarily wheat and maize, which wouldn't be changed in the future for sure. The average and total yields point out seriously to a need for using irrigation and drainage on areas of most favourable soil for intensive agricultural production, according to the situation considering the water-air regulations of land in the production season (Cvijanović, et al., 2009.).

In regard to the extremely favourable natural conditions and the vicinity of big cities markets, especially Belgrade and Novi Sad, it is desirable to increase the production of crops in terms of growing early vegetables in plastic-foil houses and glasshouses. In regard to very convenient natural conditions and the vicinity of city markets, especially Belgrade

and Novi Sad, it is preferable to increase the production of vegetable crops as cultivation of early vegetables in greenhouses and glasshouses. In that case, the production of vegetables can be economically profitable especially in protected, controlled terms of production (greenhouses, glasshouses), with obligatory use of irrigation, by which use can stabilize, i.e. increase food production and stimulate the development of all agricultural branches, as well as the others processing and economy branches (Kljajić, et al., 2009a.).

In this paper was not analyzed livestock production in the municipality Pecinci, while it was inevitable to establish the optimal ratio between plant and livestock production in the specific area, it is worth mentioning that livestock production as the traditional economic sector can strengthen significantly by activating the existing and raising new farms on adequate land in order to produce meat, milk and dairy products.

Fruit growing represents also a potential developmental line.

In the coming period, development of agriculture will get its significance through the related food industry:

- a) Food industry with a higher level of finalization (e.g. production of frozen food etc.), and
- b) Processing products via small family households (production and processing of meat, milk, fruits, vegetables, flour).

Accordingly, a special support has been given to the initiatives for construction of farm facilities for processing, drying, freezing, storing, etc.

In every field of agricultural production analyzed in this paper, there are planning solutions which would contribute to development of that production in some future period of time.

In crop production:

- Preservation and improvement of agricultural land production potentials,
- Food safety of agricultural products' consumers,
- High-quality raw materials for food industry, as domestic, as well as of foreign companies interested for our market,
- Production of crop and vegetable seeds for domestic producers and for export,
- Production of characteristic products meant for export.

In vegetable production:

- Increasing areas under vegetables,
- Introducing growing of vegetables as a second crop,
- Increasing areas for growing indoor vegetables - in plastic-foil houses and glasshouses,
- To modernize production by introduction of new varieties with higher yields and using modern mechanization,
- To provide conditions for storing and sale of final products (packing, packaging, transport, distributive centres, long-term and short-term storing, marketing, etc.).

In production of forage crops:

- Increasing of total areas under cultivated forage crops,
- Increase of share of areas under perennial legumes (lucerne, bird's-foot trefoil), field pea, vetch, broad bean, etc,
- Improvement of preparing, preservation and storing animal food,

A great and special influence to long-term stabilization of agricultural production and its intensification as a whole have those activities linked to the field of irrigation and drainage (Kljajić, et al., 2013a).

Irrigation has technical, technological, social, economic and ecological character. In our conditions there is growing need for increased application of this measure and also for higher level of use of already existing, in other words already constructed irrigation systems.

In planning the production in conditions when there is irrigation used, it is necessary to study in detail economic advantage and shortages and ecological consequences. Advantages of irrigation are the following:

- more rational use of natural resources, first of all the use of soil;
- reduced or eliminated risk from droughts;
- relation soil-water-plant in accordance at higher rate;
- higher income per capacity unit;
- production is economically more efficient (Kljajić, et al., 2013b).

Modern agricultural production requires also modernization of agricultural mechanization (*Spatial Planning of the municipality Pecinci*).

Conclusion

Agriculture is one of the basic components of the development of Serbia, because, besides economic it has remarkable social and ecological importance. There are many challenges of competitiveness increase for agriculture. Therefore it is necessary to accelerate and adjust processes of restructuring in agriculture by support of government. Also, agriculture of Serbia needs to increase its own competitiveness on international market in short time period (Cecić, et al., 2006).

For successful development of agricultural production, there is necessary the rational strategic planning and financing of agriculture by the state. A state should make the preconditions for the development of agro-credits market (<http://www.makroekonomija.org/poljoprivreda/stanje-i-potencijali-u-proizvodnji-hrane-u-srbiji-2013/>).

As the strategic developmental priority on the area of the municipality Pecinci, it considers activating all its natural, created and working potentials.

The basic production potential is agricultural land on which is possible to realize diverse agricultural production and its valorisations through increase of level of the basic products finalization, supplement of the production program for needs of food industry and introduction of new technologies.

Since regular use of fertilizers in the intensive agricultural production should base on knowing all previously mentioned factors of land fertility (we must turn to), there is necessary that the systematic control of land fertility in the future time implements and comprehends as an obligatory, strategic measure. This is inevitable, not only due to the rational use of adequate amounts and types of fertilizers, yield increase and plants quality, but also as a base for the control and elimination of undesirable ecological factors (through elimination of polluters, pronounced acidity and alkalinity of soil) in agricultural areas of our country (<http://www.agrotim.rs/poljoprivreda/kontrola-plodnosti-zemljista-u-funkciji-unapredenja-biljne-proizvodnje-i-zastite>)

In regard to it, it is necessary to apply the following measures and activities: strengthening of agriculture competitiveness; improvement of agricultural production and sale (with emphasis on production specialization); creation of agro-food clusters; strengthening of food industry; diversification of rural economy (tourism, handicraft trades, recreation); arrangement of rural settlements; modernization and rationalization of system of knowledge and information exchange in agriculture; preservation and

improvement of the natural environment and providing the sustainable utilization of natural resources; program of products geographic origin protection etc. (*Spatial Planning of the municipality Pecinci*).

During the process of more intensive focus on the market economy, changes in sector, being a factor of socio-economic progress, point at the necessity of expansion of activities that will lead towards growth in competition. In accordance, economic agrarian development should be a component of a strategy, which forecasts not only the aims of mid-term period development, but possible scenarios as well, based on which those aims could be realized (Kljajić, et al., 2009b.).

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PERSPECTIVES FOR DEVELOPMENT OF RURAL TOURISM IN THE AREA OF NOVI SAD⁴

Abstract

Novi Sad is the second largest city in the Republic of Serbia and the administrative center of the Autonomous Province of Vojvodina. On its surroundings there is a perspective area for development rural tourism. So far there have been launched some initiatives to develop rural tourism. These initiatives in conjunction with other elements of tourist supply can increase tourist offer. Rural tourism development should be based on the rich pension and out-of-pension tourist offer. What appears as a decisive factor in gaining competitive advantage in the tourism market is the opportunity to develop a wide variety of up-market tourist attractions. Presence of natural and human (anthropogenic) sources must be a marketing and management leading to achieve certain results. In this regard is the important role of the Tourism Organization of Novi Sad, local administrations and the private sector. The article emphasizes importance of public-private partnerships and management approach as a basis for gaining competitive advantage at the tourist market. Also, the paperwork provides an overview of resources that represent the potential for future rural tourism development. Expectations are that the complementary development with other forms of tourism, rural tourism will contribute to the overall economic development of this area.

Key words: rural tourism, destinations, agriculture, resources, sustainable development

JEL classification: Q2, Q12, R58

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ПЕРСПЕКТИВЕ РАЗВОЈА РУРАЛНОГ ТУРИЗМА НА ПОДРУЧЈУ ГРАДА НОВОГ САДА

Абстракт

Нови Сад је други по величини град у Републици Србији и административни је центар АП Војводине. У његовој околини постоји перспективан простор за развој сеоског туризма. До сада су покренуте неке иницијативе за развој руралног туризма. Ове иницијативе у комбинацији са другим елементима туристичке понуде могу да повећају туристичку понуду и атрактивност ове дестинације. Развој руралног туризма треба да се заснива на богатој пансионској и ван пансионској туристичкој понуди. Оно што се појављује као одлучујући фактор у стицању конкурентске предности на туристичком тржишту је прилика да се развије широк спектар различитих ван пансионских туристичких активности чиме се повећава атрактивност ове дестинације. Присуство природних и друштвених (антропогених) ресурса мора бити маркетиншки и менаџерски вођено како би пружило одговарајуће резултате. У том смислу важна је улога Туристичке организације Новог Сада, локалних управа и приватног сектора. У раду се истиче значај јавно-приватног партнерства и менаџерски приступ као основа за стицање конкурентске предности на туристичком тржишту. Такође, даје се преглед ресурса који представљају потенцијал за развој руралне туристичке понуде. Очекивања су да би комплементаран развој са другим видовима туризма, омогућио руралном туризму да допринесе укупном економском развоју овог подручја.

Кључне речи: *сеоски туризам, дестинације, пољопривреде, ресурса, одрживи развој*

Introduction

Novi Sad is the capital of the Autonomous Province of Vojvodina and the second largest city in the Republic of Serbia. Located on the north part of Serbia, with its whole natural and geographic position belongs to the Pannonian plain. Rich natural and geographic resources located in Novi Sad surrounding makes that it is possible to invest in rural areas and further develop them. An important role has to be given to the plan of the sustainable tourist development which is the basic point and condition of any further planning and activity in rural tourism.

The aim of paper work is to research possibilities for sustainable tourist development of rural areas in the Municipality of Novi Sad and pay attention to the influence of rural tourism and total social growth exerted on the ecological processes and the quality of the environment itself.

Material and method

The subject of the article is the status and conditions for the development of rural tourism in the area of Novi Sad. The aim is to point out the potential strategic directions for the future development of the tourist destination Novi Sad in the context of sustainable development. In this way, obviously great potential for further development of tourism would be a practical sense realized. Former policy undifferentiated marketing did not give results. The strategy of market focus, integrated marketing, with a clear specifying tourism aspects, with the consistent implementation of the basis on which should insist in future development. Methods that used in this paper are: inductive-deductive method, qualitative method, comparative method.

Result and discussion

The fast scientific, technical and technological progress that was immanent to all industrial revolutions brought about an enormous use of all natural resources. The availability of the resources, as well as all the factors of production, taking into account such a model of an accelerated development, has been slowly reduced by time. This is particularly so for the whole mankind.

The model of rapid industrial development itself has exhausted the main generic forces and factors and has brought about serious disturbances of the natural environment, i.e. its ecological pollution. The term sustainable development appeared at the beginning of the eighties in the 20th century. It took into account the establishment of positive relations between the human needs for a better quality of life, the economic development and the disturbed environment.

In the Republic of Serbia 10% of the territory is protected by the Law. Ecological Network for Serbia now contains 101 ecologically important areas, which are deposited on a proposal of the Bureau, i.e. the Ministry of Agriculture and Environmental protection.

Novi Sad as a tourist destination has fairly well preserved natural environment. Fruška Gora should be mentioned here, in the first place. In 1961 it has been proclaimed a national park. Later, it has been recognized as a territory with special natural, cultural and historical values and sights. Consequently, by adopting a corresponding law and space plan it has become known. It belongs to one of five national parks in Serbia. There are 25 400 ha protected by the Government.

As a specially highly preserved, in terms of ecology, the areas in the Municipality of Novi Sad, which are highly valued for its further sustainable development, are as follows:

- 1) Natural Park Fruška Gora.
- 2) Protected natural assets – Nature park (Begečka jama, Tikvara, Panonija)
- 3) Protected natural assets – Nature reserve (Kovilj – Petrovaradin swampy). It has been proclaimed some 71 nature reserve in Serbia, so far, including total area of 84000 hectares. There are special nature reserves in an area of more than 100 hectares.
- 4) International important bird areas – IBA (Marsh of Kovilje, Fruška gora, The Danubian lumber section). Serbia has 35 regions which are important bird areas

and which satisfy strict requirements of “*IBA criteria*”, respecting all the rules and regulations established by the organisation “*Bird Life International*”.

All these areas testify that there is a very high quality of a preserved ecological system, i.e. the natural environment on the whole and high level maintenance and respecting of all ecological standards. If further tourist development is required then all the elements for preservation of these standards should be considered.

It is indisputable that the anthropological resources of Novi Sad have high quality and rich in their historical background. Keeping in mind that, at one side, the problem of tourism has not been paid great attention to, so far (or the attention it has deserved) as well as “so and so” preserved anthropological resource, on the other side, as an imperative for further planning of its tourist development, there should be taken into account the maintenance of all the segments of its rich cultural and historical background.

This is the condition for its further tourist development. This means certain investments in them for further usage.

The division of the cultural and historical background could be made in the following way:

1. Cultural and historical entities.

- Town centres: Novi Sad, Petrovaradin, Sremski Karlovci, Sremska Kamenica.
- Fruška gora with its monasteries and other sights
- Great number of villages on whole territory of Municipality
- Farms “ranch”- salaši as a specific feature of Vojvodina region.

2. Important places and works with monument and artistic features.

Particular places in all of the above mentioned environment entities with an important cultural and historical background are numerous and call for a special attention. Many places have a very important role, not only in history of Serbia, but Europe, too. Many of them have the characteristic of the cultural monuments with rare artistic, historical and aesthetic values.

3. Folklore background.

The cultural and ethnic wealth of many nations and nationalities which coexisted for centuries in the region of Vojvodina is immeasurable. It can be the topic of tourism special interest from the Western Europe, America, Japan, etc. Ethnic contents, as the investigations undertaken have already shown, look like something exotic to the tourist from these countries.

4. Manifestation values.

Various manifestations, typical of Vojvodina and the customs of its nations and nationalities (its inhabitants) do and may do enrich the cultural contents of numerous rural areas.

5. Archeological findings.

The localities on Fruška gora, Petrovaradin, etc. speak about the tempestuous history of the people living here in the previous centuries.

Thanks to the large number of natural and social resources, there are great opportunities for the development of special interest tourism. In this sense there is opportunity for complementary development of rural tourism with a tourism of special interests.

1. Tourism on the Danube River

The Danube is second largest European river waterway. In terms of transport and trade

it has become even more important by digging the Rajna-Majna-Danube channel. With all its length it is a navigable river, 588 km or 13.5% of its total waterway. Follow, what makes it possible to use its natural and geographical advantage, keeping in mind the sustainable development of the environment.

The development of the nautical tourism accompanied by all sport program and recreation on water etc., has become the natural outcome of the above mentioned. There are many beaches on the river banks that make it possible to develop restaurant management as well as other accompanying services, during the stay on the river. Also, it is possible to develop ethno village near the river which can attract attention of cruising tourists. In this village is possible to supply all characteristic rural products to tourists.

2. Agritourism supply

Thanks to the natural ecological and environmental characteristics, the rural areas are very interesting and promising ones for the development of agritourism. Adequately built up cottages for rest in the countryside, characterized by silence and tranquility, are real oases for the people living in highly urban industrial centers, widespread in domestic and foreign markets. In the past, the development of this form of tourism has been declaratively supported, but, recently some new ideas have been recovered. Thus, in the course of 2004, aiming at promoting Serbia as a transit destination on the way to the Olympic games in Athens, two typical farms (ranch – “salash”) were built. They had all the characteristics of a life and customs in the region of Vojvodina (typical farms No. 84 and 137). They were published in the tourist map of Serbia. Numerous villages in Vojvodina are the base for further planning keeping in mind new tendencies in the west (the so-called “return to the origins”) the idea of healthy food, old customs and crafts and an ever growing popularity of typical ethno-contents such as the music, folklore, naive painting, etc.

3. Hunting and fishing

Vojvodina has a long tradition in hunting, but it also cares for its fauna. In the past twenty-five years, the well-known hunting ground have unfortunately been neglected, such as: Plavna, Morovoć, Karakuša, Karadjordjevo, Sombor woods, Apatinski bogland, Desert Delibato Subota, and probably the largest hunting area of Fruška gora.

Once, Fruška gora used to be the highest level hunting area for the diplomats because of its natural beauties, it offers the ideal conditions for the settlement of game, especially wild boars, roe deer, small game. With relevant laws and regulations watching out for the sustainable development and respecting all ecological standards, with corresponding investments in this area, Fruška gora may become a great tourist potential.

4. Photo safari

The diverse animal and vegetable world of Vojvodina, from orchard to conifers, from roe deer and rabbits to deer and eagles, make it an interesting region for the tourist who want such things. The most different plant species prove that the nature is intact, where all nature lovers may enjoy themselves. Vojvodina owns rich domiciles of birds, with very rare species. Some of them are: black stork (*Ciconia nigra*), swan (*Cygnus olor*), white-tailed eagle (*Haliaeetus albicilla*), black kite (*Milvys nigranis*), night heron (*hycticorax*), great white heron (*Egretta alba*) and small white heron (*Egretta garzetta*).

5. Monastery tourism

Fruška gora, with its seventeen monasteries, has a great potential for the development of this form of tourism. The monasteries there are the cultural, historical and religious precious stone, often called “second Serbian Holy Mountain – Serbian Mount Athos”. Due to long-time

non-investment and neglect of them, these monasteries, such as: Beočin, Basenovo, Divša, Gregateg, Jazak, Krušedol, Kuvezdin, Mala Remeta, Velika Remeta, Novo Hopovo, Staro Hopovo, Petkovića, Rakovac, Privina glava, Šišatovac, Panek and Ravanica, which have been burned and devastated in course of their history, should be adapted and reconstructed. This should be the priority task of the government both in terms of culture and religion.

6. Wine tourism

The districts characteristic for the upbringing of grapevine and wine production, record significant income from numerous tourists who, at the time of grape picking, come to attend many wine festivals. The income is acquired both regarding the sale, i.e. the wine consumption, as well as regarding the expenses that tourists have during their stay at a given destination. Sremski Karlovci has an important potential for the development of this form of tourism. In Vienna they have protected name of rose wine well-known as “Karlovački tovjan” and among all Srem vines, the wines from Karlovac, which are made of raisins have acquired a good reputation (especially black vines). Black grapes are used to make famous “Karlovački ausbruch (i.e. Juice flowing from the grapes themselves), “Cipar wine”, “Tropf Vermut”, “Plenaš” and ordinary vermouth.

The events of the traditional grapes, picking holding in Sremski Karlovci in autumn every year. This is followed by the other festivities there. Quality wines from this region have been awarded many “flattering” rewards at many competitions held worldwide.

The production of many wine brands for which there are nature resources available and wine cellars, too, may attract a great number of tourists, both the domestic and the foreign ones.

Keeping in mind the tendencies of the tourist market to exceed the idea of mass tourism, in recent years, it has been recorded that the interest for special needs tourism has been increased. By the end of the last decade, the model of the rural development (CAP) was promoted it assumed a multifunctional character of the European agriculture and its role in the development of the economy and the whole society. Agriculture, as a primary economic branch, has far-reaching interest for complementary cooperation with all sectors of economy. The same refers to the tourism.

One of the characteristics of the modern tourist market is that the unique product are highly esteemed and that the tourists nowadays tend to run away from the uniformity that the globalization process has offered them. In this sense, the component part of the tourist offer is more frequently – local, regional or national. The role of rural house-holdings has become ever stronger and area of Municipality of Novi Sad has very respectable resources there.

The perspectives would be, as follows:

1. **Informing the tourist about the tradition and the customs of the nations and nationalities**, particularly in the villages representing the multiethnic communities and enriching them. This brings about wide creativity in making various programs and activities.
2. **Gastronomy**, i.e. the production of special local food and preparing of the “healthy food” or the organic food production (officially called so). The idea has been very popular in highly urbanized countries; recently it may be the contents of caterer and other manifestations with cookery as a subject matter.
3. **Getting to know the folklore and “dances”** of all nations and nationalities. It’s quite logic, then to organize many manifestations that could fulfill the cultural program in the course of a year, in rural areas.

4. Getting to know **old crafts and tools**. During a long historical development of human society there were many crafts and tools which once used to have an important role in the rural households. Unfortunately, they had been forgotten and abandoned long time ago. They are especially interesting for the tourist of highly developed urbanized industrial countries and significantly enrich the tourist offer. However, these crafts may survive by common efforts only. Many organizations which make business or plan to do it in the rural areas, have a task of encouraging the local population, to organize them and help them supply raw material to dispose of goods and make an additional income for their families.
5. **Folk arts and crafts**. Rich multiethnic conditions make it possible for enriched and various folk arts and crafts, which may be very attractive to the tourists almost every region can boast with its typical product that appeared as a work of diligent hands of the local residents. Folk arts and crafts is the privilege of the residents of different rural areas, who invest their time, skill and talent. The products of folk arts and crafts may become basic point for the development of a special branch of the economy in rural areas.
6. **Cultural and sports performances**. They enrich and improve the variety of the tourist offer. An important role in promoting some of the above offers might be given to the private sector, i.e. a small business.

Partially made tourist programs should be supported, particularly fiscally, but also support in sale, since both of them could enrich the forms of non-pensions offers. This would also contribute to an efficient presentation and market valorization of the anthropological and other resources. This would further contribute to additional employment in the private sector without any significant initial investments. Elaboration of a high-quality program of stay in the village should not be left to the local resource fullness. It should be a serious topic of analysis if the development and the effects of this form of tourism are expected. The quality of the services offered, as many investigations carried out confirm, is one of the decisive factors that the tourists quote when they grade their stay in a certain tourist destination. This gives a chance for the residents in these regions, to expert their creative work.

Conclusion

Rural tourism in Serbia has begun to develop since the seventies of the twentieth century. The initial phase is characterized by uncontrolled access without clear market policy. The new millennium has entered a phase of “dedicated development”. The relevant state authorities allocate adequate resources to improve the development of rural tourism in some areas.

With its natural and social resources in the area of Novi Sad is a very promising area for the development of rural tourism. With regard to the forms in the area of Novi Sad, it is possible to develop all kinds of rural tourism.

Expectations are that rural tourism could accelerate overall economic development and prevent negative trends plaguing the rural areas (depopulation, migration to urban centers, aging population, reducing macro-economic indicators, etc.).

Various rural areas offer the basis for further planning and action in this field. The access should be planned and selective. The program of the stay of the tourist in all areas should be planned and justified at all levels of organized tourist activities (both vertical and horizontal). A wide range of forms of tourism of special interest is a great chance for us here and it should be emphasized in the future. So, the plan of the sustainable development should be given full respect consistently. This is in the interest of both the host and the tourist coming from the developed and highly industrialized countries who have recently been interested in sojourn in the above regions.

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HOW DIFFERENT MONETARY RULES LEAD TO DIFFERENT PERFORMANCES DURING THE CRISES: THE CASE OF THE WESTERN BALKAN COUNTRIES³

Abstract

The Great Recession reopened macroeconomic issues that had been previously considered as solved. One of them is the use of monetary and fiscal policy to stabilize macroeconomic development. Although the prevailing consensus used to be that monetary policy is powerful enough to ensure smooth economic performance, the Great Recession produced the need for fiscal stimulus in many countries. This paper analyses the impact of a different policy-mix with emphasis on different monetary policy rules in the Western Balkan countries. Using data of the main macroeconomic indicators, the authors demonstrate that the monetary policy regime still remains a key determinant of economic performance during the economic crisis.

Key words: *monetary policy, the great recession, Western Balkan countries, Mundell Fleming model, international trade.*

JEL classification: *E32, E52, E63*

КАКО РАЗЛИЧИТА МОНЕТАРНА ПРАВИЛА ВОДЕ ДО РАЗЛИЧИТЕ ЕФИКАСНОСТИ ПРИВРЕДЕ: СЛУЧАЈ ЗЕМАЉА ЗАПАДНОГ БАЛКАНА

Апстракт

Велика рецесија поново отвора макроекономска питања која су се раније сматрала решеним. Једно од њих је употреба монетарне и фискалне политике у стабилизацији макроекономског развоја. Иако некада преовладава консензус монетарна политика је довољно снажана да се осигура несметан

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економски учинак, Велике Рецесије и потребе за фискалним стимулансом у многим земљама. Овај рад анализира утицај различитих политика мешања са нагласком на различита правила монетарне политике у земљама Западног Балкана. Користећи податке са главних макроекономских показатеља ми смо показали да је режим монетарне политике и даље остаје кључна одредница економских перформанси током економске кризе.

Кључне речи: монетарна политика, Велике рецесије, земље западног Балкана, Мандел-Флеминг модел, међународна трговина.

Introduction

Financial and economic crisis of 2007-2008, so called the Great Recession, had a crucial impact on the business environment. The rate of economic growth of the Western Balkan countries suddenly decreased and it has become unclear, whether it is possible to sustain pre-crisis growth rates. The Great Recession has also reopened several macroeconomic issues which had been considered as settled for the time being. The use of monetary and fiscal policy as a stabilization tool and the elementary setting for sustainable business environment is one of them.

Prevailing pre-crisis consensus was that economic fluctuations can be eliminated by stabilization of aggregate demand. Most economists believed that this could be achieved by using monetary policy alone. In macroeconomics, there are several arguments to support this hypothesis. One of the plausible arguments is linked to the fact that monetary policy is considered to be less distortionary than fiscal policy. In addition, in an economy using fiat money, nothing limits monetary policy in boosting the aggregate demand. Monetary policy has become a preferred stabilization tool in accordance with the well known rule stating that one policy instrument should be used to achieve one policy goal.

Government budget has become viewed as an instrument of supply-side policy.

These views survived even Japan's lost decade (lasting much more than ten years), when the Bank of Japan failed to prevent deflation. However, the Great Recession forced economists to reconsider these views. Once interest rates hit zero lower bound, the central banks of many developed countries lost control over the aggregate demand and it became clear that the role of monetary and fiscal policy is not as clear-cut as we had thought. However, recently reopened discussions about stabilization policy focus mainly on large economies experiencing relatively modest flows of goods and services, for example the US, the Euro Area and Japan. These issues are much more complicated in small open economies.

Western Balkan countries provide a unique opportunity to study the advantages and disadvantages of different monetary regimes. We focus on Albania, Serbia, Montenegro, Macedonia and Bosnia and Herzegovina (we exclude Kosovo due to missing data and Croatia because of its much higher GDP per capita but also due its full membership with the EU since 2014). These countries share similar history, culture, economic characteristics, structure of foreign trade and were hit by a similar shock. On the other hand, different monetary regimes are used there. Albania and Serbia follow inflation targeting monetary policy (Albania being much more successful), Macedonia pegs the exchange rate to the euro, Bosnia and Herzegovina uses the currency board (backing its currency by the euro) and Montenegro uses the euro instead of its own currency.

From deep recession in Montenegro to one of the few growing countries in Europe, Albania, a relatively similar economic development in the pre-crisis period turned to a

completely different situation. We argue that (1) the monetary regime proved to be an important determinant of economic performance (2), but the fiscal policy (especially tax cuts) is not to be underestimated. These two instruments were capable of guaranteeing a sufficient demand and thus help to provide a good environment for entrepreneurship in the Western Balkans. Furthermore, (3) the way the monetary regime determined the reaction of an economy to shocks is in line with well-known textbook Mundell-Fleming model.

Next section offers a literature review. Part two describes the nature of shocks which hit the Western Balkan countries and provides a theoretical prediction of their impact on an economy conditional on monetary regime. Part three confronts theoretical predictions of the Mundell-Fleming model with actual development in individual countries. The last section offers the conclusion.

1. Literature review

If a small open economy decides to stabilize output and inflation using monetary policy, it has to be willing either to tolerate fluctuations of exchange rates or to control the capital flows. A volatile exchange rate can be a source of additional costs. Capital control closes the economy to a certain degree. Therefore, arguments in favour of monetary policy are somehow weaker. Nevertheless, most authors comparing flexible and fixed regimes conclude that the floating exchange rates are preferable even in a small open economy. Krugman, et. al. consider the autonomy of the monetary policy (better ability to control money supply) to be an important advantage of floating exchange rates. Furthermore, the exchange rate operates as an automatic stabilizer. (Krugman, et. al., 2014, Mankiw, 2009)

These two properties of floating exchange rates are well described by the Mundell-Fleming model (Fleming, 1962; Mundell 1963). Let us summarize the main results of this well-known model focusing on the effects of the downward shift in exports, since this case is the most relevant for our analysis.

Lower exports, caused for example by recession in export markets, cause downward pressures on exchange rates – domestic currency tends to depreciate.

Under the flexible exchange rates (used by Albania and Serbia), exchange rate depreciation increases the volume of exports and gives incentive to households and firms to substitute imported goods by domestic production. As a result, the net exports rise partly offsetting the effect of the slowdown of trading partners' economies. Furthermore, if the central bank targets inflation, it should be willing to do a monetary expansion to stimulate demand even if it leads to even weaker currency. Overall expected effect is a modest decrease in real activity and a significant currency depreciation.

If a country fixes the exchange rate (like Macedonia does), the central bank cannot allow the currency to depreciate. To combat the downward pressures on the exchange rate, it has to use monetary restriction or at least it has to be less expansionary. This has two negative effects on output: (1) since the currency does not depreciate, the net exports do not rise (*ceteris paribus*) and (2) the aggregate demand is further weakened by the monetary restriction. The country keeps the exchange rate fixed at the cost of deep recession.

Very similar effects are to be expected in a country using the currency board (for instance in Bosnia and Herzegovina) and in a country without its own currency (Montenegro). Both lower external demand for goods and services and lower capital

inflows lead to a negative balance of payments. Instead of monetary restriction of the central bank, the money stock shrinks because of balance-of-payments mechanism.

In most cases, once the central bank chooses not to target the exchange rate, the rate of inflation is selected as the monetary-policy target. Therefore, most studies deal with the issue of optimal monetary regime comparing the exchange rate targeting to the inflation targeting.

Monacelli and Galí point out the trade-off between the stabilization of domestic inflation and the output gap on the one hand and the stabilization of the nominal exchange rate and the terms of trade on the other hand. They conclude that the optimal volatility of exchange rate is proportional to the openness of the economy (Galí, et. al., 2005).

Batini, et. al. (2009) argue that inflation targeting is superior to the stabilization of exchange rate and that the financially unstable emerging-market economies should “fear to fix” rather than “fear to float”. They support their findings with the analysis of Chilean monetary policy.

Dennis (2001) reaches the same conclusion, but he considers the exchange rate movements to be a source of valuable information even under inflation targeting. Taking the exchange rate into consideration in the monetary-policy decisions can lead to better economic outcomes. Clarida, et al. (2001) argue that the optimal monetary policy in an open economy does not differ from the optimal monetary policy in a closed economy. Lama, et. al. (2007) show that the central bank in a small open economy should stabilize the inflation of non-tradeable goods. Gyu Choi, et. al. (2003) show in a model with habit formation that the monetary policy in a small open economy should take into the account the world interest rate. Kolasa, et. al. (2011) build a more complicated model and argue that the monetary policy should also take into the account the balance-sheets shocks and the foreign debt.

It is necessary to understand that different monetary regimes might perform differently under different shocks. Parrado (2004) compares the inflation targeting and the exchange rate rules. He states that under external and real shocks, the social costs are significantly higher when the exchange rate is managed. On the other hand, in the case of nominal shocks, the loss is higher when a flexible exchange rate is applied. De Paoli (2004) also concludes that the reactions of policy makers should differ according to the source of negative shock. Faia, et. al. (2008) show that home bias in consumption makes it desirable to stabilize the exchange rate to a certain degree.

Most advanced countries using flexible exchange rates choose the rate of inflation as a target of their monetary policy. However, this is not the only choice. According to Merola (2010), a price level targeting policy produces lower levels of volatility of interest rates and exchange rates. Price level targeting policy reduces the risk of deflation and affects the private sector’s expectations in such a way that they work as automatic stabilizers.

Despite these arguments in favour of flexible exchange rates, many countries choose to keep the exchange rates fixed. What is the rationale behind? According to Krugman, et. al. a fixed exchange rate works as a guarantee for exporters and importers and foreign investors that no unexpected appreciations or depreciations will occur.

Conduct of monetary policy is even much more complicated in countries with populist governments and in the countries with serious threats of populist parties gaining power. In these cases, “money printing” can be easily used not as a stabilization tool, but as means to raise revenues. High inflation becomes a permanent threat and it is not unthinkable that high inflation will turn into hyperinflation, which usually goes hand in hand with additional political risks (risk of expropriation, for instance). Therefore, a government can choose to peg its currency for example to dollar or euro (or recently mark)

or to adopt a currency board when every single unit of domestic currency is backed by foreign currency. Even more extreme case is giving up own currency altogether, so called dollarization. These measures mean giving up the monetary policy, but it provides a guarantee to foreign investors that a government will “behave responsibly”. A significant number of developing countries have to weigh the advantages of guaranteeing financial stability against the disadvantages of giving up the most powerful tool of macroeconomic stabilization.

2. Results and discussion

2.1 Nature of shocks and expected macroeconomic effects

What exactly was the nature of shocks that hit Balkan countries during the crisis?

First of all, we must emphasise that since the economic crisis did not originate in the Balkans, all shocks were external. The most important one was the decline in exports caused by the economic slowdown of the region’s trading partners. Secondly, the global economic crisis led to decline of domestic investment demand with similar effects. Thirdly, Western Balkan countries have experienced a decrease of capital inflows. Table 1 shows annual growth rates of exports and investments in current prices (we choose current prices instead of constant prices because aggregate demand, i.e. nominal GDP, is expressed in current prices) and capital inflows expressed as a percentage of the GDP two years before the crises and two years during the crisis.

All these shocks are negative demand shocks. Decreases in external demand and in capital inflows also create downward pressures on domestic currency.

Furthermore, a weaker economy decreases the money demand and pushes interest rates down. This makes the country less attractive for foreign investors, which could create even more pressures on currency depreciation. However, since the world interest rates also decreased, this effect is probably not very significant.

Table 1. Shocks experienced by Western Balkan countries

	ANNUAL GROWTH RATE OF EXPORTS (CURRENT PRICES)		ANNUAL GROWTH RATE OF INVESTMENT (CURRENT PRICES)		AVERAGE CAPITAL INFLOW (PERCENT OF GDP)	
	2006-2008	2008-2009	2006-2008	2008-2009	2007&2008	2009&2010
Albania	21%	12%	28%	-5%	11%	9%
Serbia	21%	10%	30%	-11%	10%	4%
Montenegro	25%	-10%	91%	-5%	11%	4%
Macedonia	22%	-1%	21%	10%	47%	19%
B&H	25%	-9%	23%	9%	20%	7%

Source: World Development Indicators of The World Bank

In general, all the countries are economies with weaker external and domestic demand and downward pressures on the exchange rate. According to Mundell-Fleming model, actual reaction of an economy on such shocks depends on the reaction of the central bank, i.e. on the monetary policy. Monetary policy is in turn determined by the monetary regime.

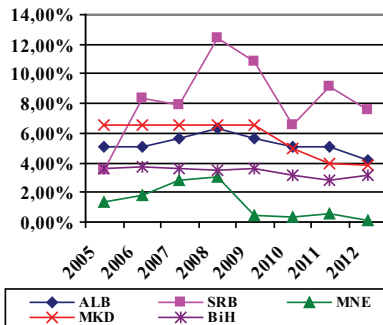
2.2 Policy mix and its impact on economic performance in individual countries

2.2.1 Monetary Policy

To assess how expansionary or how restrictive monetary policy in a particular country was, we focused on two indicators: (1) the interest rates and (2) the monetary base. In case of Montenegro which uses the euro, data for monetary base are not available. Therefore, we decided to use the monetary aggregate M1 instead. Furthermore, since Montenegro does not have its own currency, we do not report its interest rates.

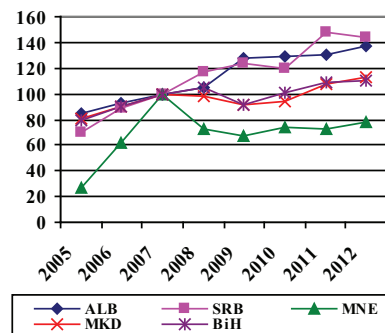
In 2009 - the moment the crisis hit Western Balkans – only the central banks targeting inflation decided to cut the interest rates. In Albania, the central bank decreased basic rate from 6.3% to 5.7%, much more inflationary Serbia experienced a drop from 12.4% to 10.8%. Monetary base in Serbia and Albania stayed on their pre-crisis trend (increasing about 10% per year).

Figure 1. Interest rates



Source: Central banks of respective countries

Figure 2. Monetary base



Source: Central banks of respective countries

On the other hand, Macedonia and Bosnia and Herzegovina kept the interest rates unchanged to protect their currencies. Their monetary base in 2009 was about 10% smaller than in 2007.

There was even more radical restriction in money stock in Montenegro, where M1 had shrunk to only two thirds of its pre-crisis level. The difference between the money supply in Montenegro and other countries is even more pronounced if the monetary aggregate M2 is considered. Whereas in Albania, Serbia and even Bosnia, M2 was higher in 2009 than in 2007 and in Macedonia only 5% decrease was observed, Montenegro experienced the decrease of 20%!

Monetary restriction prevents currency depreciation using two channels:

(1) In the long run, a smaller supply of domestic currency decreases the price level. It follows from purchasing power parity theory that currency appreciates.

(2) However, in the short run, fluctuations in the exchange rate are mostly governed by the capital markets. Monetary restriction increases the interest rates which makes a country more attractive for foreign investors.

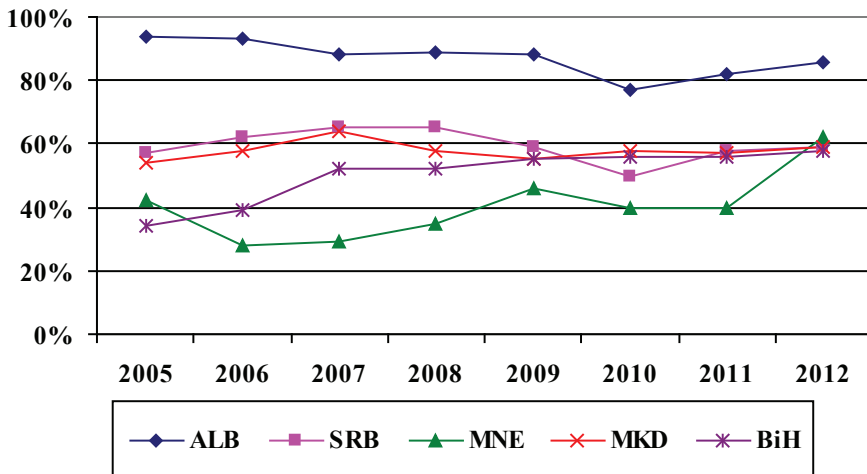
Furthermore, if markets believe that the central bank will fight against downward pressures on the exchange rate, the expected return on capital is higher. To understand why, it is important to note that the return on capital equals the interest rate plus expected appreciation of the domestic currency. Under the floating exchange rates, the exchange rate is expected to depreciate, under the fixed exchange rates, the central bank is expected to keep the peg.

We conclude that monetary policies in Western Balkan countries follow predictions of the Mundell-Fleming model. Monetary policy in the inflation-targeting countries were indeed much more expansionary than in the countries fixing the exchange rate. Taking into consideration changes in the exchange rates, ex post return on capital (interest rate + domestic currency appreciation) in Albania (about -6%) and Serbia (about -10%), were significantly lower than in Macedonia (about 0%) and Bosnia (about -1.5%). Montenegro as a country without its own currency experienced a sharp decrease in money stock which had a restrictive effect on the economy.

Let us briefly discuss the main channels of monetary transmission in the Western Balkans in more detail. Expansionary monetary policy leads to a depreciation of the exchange rate and thus boosts exports, but *not necessarily in those trading partners which were hit by the crisis*. In other words, the monetary expansion should not only increase the volume of exports, but also change the structure of international trade.

Figure 3 shows the share of exports in the euro area and in countries which peg their currencies to the euro. In Albania and Serbia – countries with a flexible exchange rate regime and expansionary monetary policy, we observe a temporary drop in the share of countries using the euro on their exports. On the other hand, no such thing is observed in Bosnia and Macedonia. However, in this respect, Montenegro behaves more like a country with flexible exchange rate. This will be the subject of a further research.

Figure 3. Share of countries using the euro and pegging their currencies to the euro on exports



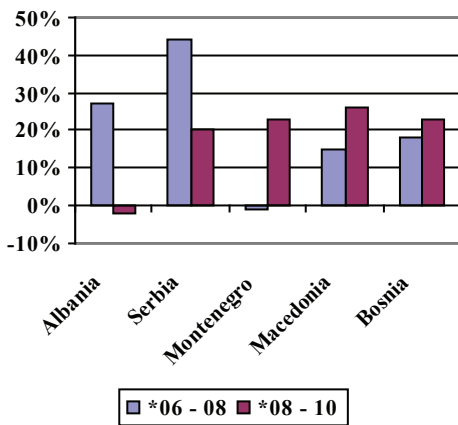
Source: Statistical offices of Albania, Serbia and Montenegro, Central Banks of Macedonia and Bosnia and Herzegovina

2.2.1 Fiscal Policy

How did the fiscal policy react in the face of the crisis? We have mentioned that once the central bank targets inflation, the fiscal policy is unnecessary. However, the countries fixing the exchange rate might find the fiscal policy useful.

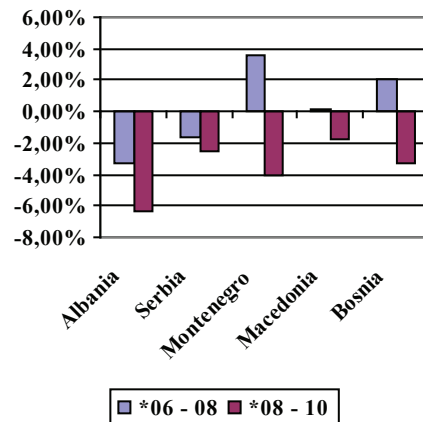
Growth rates of government expenditures before the crisis and during the crisis confirm that neither Albania nor Serbia engaged themselves in a massive fiscal expansion. On the contrary, during the crisis, government expenditures grew much more slowly. On the other hand, Albanian deficit increased as the results of a cut in the corporate and personal income tax rates from 20% to 10% which took effect in 2008. Therefore, the Albanian fiscal policy can be considered as slightly expansionary, albeit not as much as the fiscal policy in countries with the fixed exchange rates since Montenegro, Macedonia and Bosnia and Herzegovina experienced an increase in growth rates of government expenditures. Serbia remains the country with the most restrictive fiscal policy. It is also important to mention that the fiscal expansion in Montenegro, Macedonia and Bosnia and Herzegovina was done mostly by increasing government expenditures. However, Macedonia also cut the corporate and personal income taxes, but this was done before the crises.

Figure 4. Average growth rates of government expenditures



Source: World Development Indicators of The World Bank

Figure 5. Average government balance (%GDP)



Source: tradingeconomics.com

2.3. Impact of policy mix on economic performance

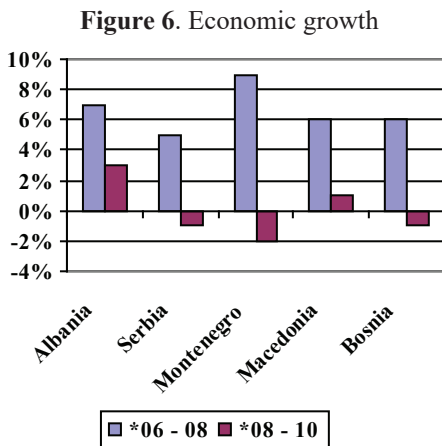
We have documented significant differences in the policy mix in the Western Balkan countries. Differences in policy were reflected in a different performance. What outcomes are to be expected?

It is natural to expect Albania being the best performing country. This country is relatively successful in targeting inflation. Furthermore, tax cuts might improve economic performance through supply-side channel even if they were not strictly necessary as a stabilization tool.

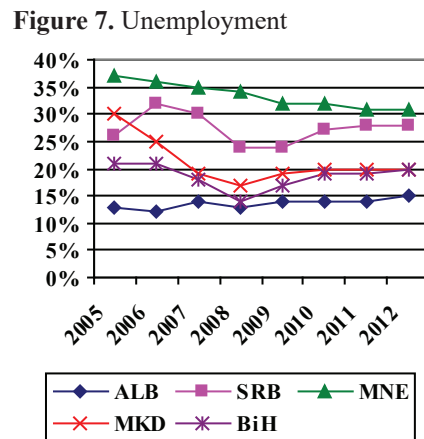
Serbia also targets inflation, but it is much less successful. In 2005, inflation was 17%, a year later 6,6%, in 2007 inflation rate returned to double-digit values (11%). In the environment of historically unstable inflation (and consequently unstable inflation expectations), the monetary policy is hardly powerful enough to stabilize the economy. Furthermore, it is also not certain that the central bank will offset the fiscal restriction by the monetary expansion, which is important, since Serbia has the most restrictive fiscal policy.

Montenegro, Macedonia and Bosnia and Herzegovina fix the exchange rate, but they engaged in fiscal expansion. How successful the fiscal policy is in supplementing the monetary policy depends on particular circumstances.

Figures 6 and 7 show the rates of economic growth and unemployment in different countries before and during the crises.



Source: World Development Indicators of The World Bank



Source: World Development Indicators of The World Bank

Taking these two indicators into account, it is evident that Albania was indeed the most successful economy. The drop in growth rate was not so significant and the unemployment rate did not rise.

The second best performing economy is Macedonia, despite the fixed exchange rate. This country engaged in fiscal policy and the tax cuts similar to Albania.

Although Serbia targets inflation, it managed only to postpone the increase of unemployment for one year, the real economic activity slowed down significantly. All in all, Serbia did not perform better than Bosnia and Herzegovina using the currency board.

Montenegro using the foreign currency is the worst performer. Starting with the unemployment exceeding 35%, it has not experienced any rise in the unemployment rate, but the economy, which managed to grow by 9% before the crisis experienced a negative growth. This is undoubtedly an economic disaster.

Conclusion

Western Balkan countries provide an evidence that the floating exchange rate together with responsible inflation targeting might be the best combination if the economic stabilization is a policy goal. This is the case of Albania. However, Serbian

experience proves that the currency depreciation might not avert the crisis if the central bank is unable to stabilize the inflation and doubly so when external shocks are coupled with fiscal restriction. Serbian economic performance is comparable to Bosnia and Herzegovina, where the currency board is used. The Macedonian example shows that the fixed exchange rate and fiscal expansion (namely tax cuts) might be better solutions. From the viewpoint of macroeconomic stabilization, using the foreign currency is probably not the best way to go forward, the drop in the money supply due to the balance-of-payment mechanism has restrictive effect and caused a deep recession in Montenegro.

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BARRIERS TO INNOVATION IN SMES IN THE REPUBLIC OF SERBIA

Abstract

Small and medium-sized enterprises (SMEs) face significant constraints in their efforts to be innovative. In addition to general problems in innovation, these business entities in Serbia are faced with additional difficulties which can significantly reduce and limit their innovative strength. In short, these barriers are: personal unreadiness to innovate, underdeveloped awareness of the importance of innovation, inadequate government strategy for supporting innovativeness, limited market, insufficiency of capital, non-innovative organizational culture and insufficient incentives.

Key words: SMEs, innovation, barriers to innovation, the Republic of Serbia

JEL classification: O30

ПРЕПРЕКЕ ИНОВИРАЊУ МАЛИХ И СРЕДЊИХ ПРЕДУЗЕЋА У РЕПУБЛИЦИ СРБИЈИ

Апстракт

Мала и средња предузећа се суочавају са значајним ограничењима у својим напорима да буду иновативна. Поред опитих проблема код иновирања ови пословни субјекти у Републици Србији се суочавају и са додатним потешкћама које могу значајно да умање и ограниче њихову иновативну снагу. Најкраће, ове препреке су: лична неспремност за иновације, неразвијена свест о значају иновација, неадекватна државна стратегија подршке иновативности, ограничено тржиште, недовољност капитала, неинновативна организациона култура, недовољне стимулације.

Кључне речи: мала и средња предузећа, иновације, препреке иновирању, Република Србија

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Introduction

SMEs in the Republic of Serbia operate in the less favourable business environment than SMEs in developed countries, especially in the EU member states. There are many negative factors that affect the daily operations of domestic SMEs including unfavourable general business conditions, unemployment, low purchasing power, undeveloped financial market, limited opportunities for external funding, the grey economy, widespread corruption, inefficient inspection authorities, monopolies in certain industries (e.g. trade), weak legal protection, poor tax regulations and inefficient procedures, inefficient supporting infrastructure, poor law enforcement, etc. To a greater or lesser extent, all these factors affect the possibility, pace and quality of development of SMEs. In addition to the above mentioned factors, there are various constraints which further limit, slow down or hinder innovation activity in SMEs (Mihailović, 2008; Cvetanović & Nedić, 2013; Kalač et al., 2013). These barriers are able to limit the emergence and rapid development of innovative SMEs, and thus to prevent the achievement of full employment, competitiveness and economic growth.

Besides the risk of failing, which is immanent to every innovative project, there are a number of other barriers that slow down the development of innovation activities in SMEs or make it difficult. The most important barriers that restrict development of innovations in SMEs in the Republic of Serbia are:

- Personal unreadiness to innovate (fear of change, conformity),
- Uninventive social climate and underdeveloped awareness of the importance of innovation,
- Inadequate government strategy for supporting innovation and innovativeness,
- Economic barriers (limited market, insufficiency of capital),
- Business barriers (non-innovative organizational culture, insufficient incentives) (Pokrajac, 2010: 130-131)

Innovativeness factors of SMEs

Numerous studies point to the important role of internal and external factors for the innovativeness of SMEs. In addition, it turns out that there is no obvious model of influence which applies to all types of innovation. For an enterprise to successfully create a technological innovation, all necessary supply-side and demand-side conditions must be satisfied. Technological knowledge and expertise are essential on the supply-side, and on the demand-side, market opportunities for the realization of innovations are necessary. For example, innovation can enable SMEs to become part of the global supply chain in which SMEs become part (link in the chain) of the overall production process, whether it is a product innovation and/or process innovation. In addition to supply and demand conditions faced by SMEs, some internal factors that are specific to individual enterprises can be crucial to their ability to innovate. The most important internal factors are the availability and quality of human resources, financial strength and absorptive capacity of SMEs. External factors are usually related to the possibility of connection with other companies in the field of innovation, positioning within the supply chain and value chain, etc.

Black points out that in contemporary conditions the key to successful innovation of SMEs is in the access to knowledge created outside the enterprise (e.g. at research organizations, universities and colleges, research units of large enterprises, institutes, etc.). In their effort to identify what factors determine the speed and quality of innovation within SMEs, Alloca and Kessler (2006) identified and analysed eight major factors:

- **Capital resources.** Regarding the access to and usage of resources, SMEs have relatively limited opportunities and more difficult access to funding sources; are more dependent on a small number of products or services; cannot achieve economies of scale, etc. On the other hand, they are less bureaucratic structured; are more flexible; are responsive; and have a greater propensity to and need for risk-taking compared to large companies. Due to limited resources (mainly financial), as a rule SMEs have very limited funds for R&D activities, replacement of the product within the product range, testing of various models of products, etc.
- **Marketing and technical resources.** As with financial resources, SMEs often have less marketing and technical resources available than large companies. Consequently, there is minor media and marketing presence in the market; it is more difficult for SMEs to establish recognizable trademarks and brands; it is also more difficult for SMEs to present themselves to potential consumers, etc.
- **Quality of the management.** Management in SMEs has limited and insufficient managerial knowledge (insufficient training in the field of business management, standards of quality, business planning, planning and realization of management activities, connecting with other enterprises, etc.). Personal characteristics of manager (usually the owner) are very important especially in small enterprises, because the success and survival of enterprise mainly depend on abilities, knowledge and initiative of the owner (manager).
- **Ability to innovate.** There is a big difference in terms of the ability to innovate, between SMEs and large enterprises and among SMEs as well. It is noticeable, especially among enterprises from different sectors. What is common to most SMEs are limited capital and human resources, undeveloped business culture (in new enterprises), lack of management experts, lack of experience in developing and connecting into various business networks and associations, etc.
- **Innovation process.** Main characteristics of SMEs are that their processes usually are less formalized and they often implement informal strategy of planning and communication compared to large enterprises. Consequently, the quality of the innovation process significantly depends on ability and vision of the manager (owner).
- **Organizing operations and innovation processes.** An important feature of SMEs is that they are more flexible and collectively more motivated, simpler and less bureaucratic structured. This feature enables more rapid decision-making compared to large enterprises.
- **Strategy and planning.** The importance of formal (strategic) planning is less obvious in SMEs compared to large enterprises. Many SMEs avoid defining

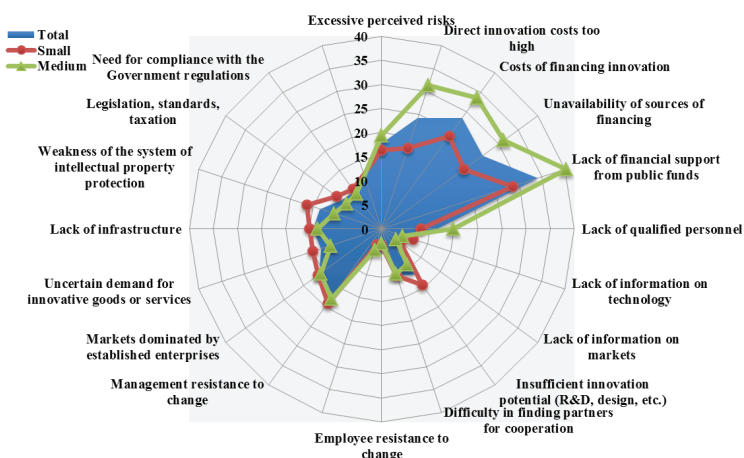
precise goals and clearly defined tasks. Consequently, strategic planning in SMEs is less formalized and unique, and varies among enterprises in terms of importance.

- **Forming associations.** SMEs are much more motivated and focused on connecting into various associations, networks, business alliances, etc. compared to large enterprises, because they get a chance to overcome some of the limitations that are immanent to small enterprises. In this way they get better access to quality human and all other resources and increase the importance and negotiation power in the market, thereby significantly reducing the advantages of large enterprises. Connecting of SMEs is of great importance because they also disperse financial risks, perform technology transfer in a much easier way, increase production efficiency, competitiveness, etc. (Cvetanovic, et al., 2014; Alloca & essler, 2006).

The main conclusion of the research is that because SMEs' innovativeness and complexity are influenced by numerous factors, SMEs must find an efficient way for managing limited financial, human and other resources, in order to be innovative and competitive in the market.

Hampering factors for innovation activities in SMEs in Serbia

According to the results of the pilot study on innovation activity in enterprises in Serbia¹ conducted by the Statistical Office of the Republic of Serbia in cooperation with the Institute Mihajlo Pupin for the period 2004-2006, SMEs are faced with a large number of various hampering factors which adversely affect their innovation activities. For most SMEs the most serious hampering factors are lack of financial support from public funds, high costs of innovation funding, unavailability of appropriate funding sources, high costs of direct innovation and operating in markets dominated by established enterprises. Research results show that the most serious restrictions are associated with high costs and inability to finance innovation activities appropriately.



Source: The authors, according to: (Statistical Office of the Republic of Serbia, 2011: 7)

After a pilot study carried out in 2007, Statistical Office of the Republic of Serbia has conducted two more studies (in 2009 and in 2011) on innovation activity in SMEs. The study conducted in 2011 (referring to the years 2009 and 2010) provided various findings regarding the innovation activity of enterprises, as well as information about factors that hamper the innovation process in SMEs. The survey covered 3,500 small and medium-sized business enterprises, and obtained results were weighted, which enabled their recalculation for the whole population of all SMEs in Serbia. The study separately observed limiting factors for innovation activities in SMEs which are innovators and in SMEs which did not introduce any innovation in observed period.

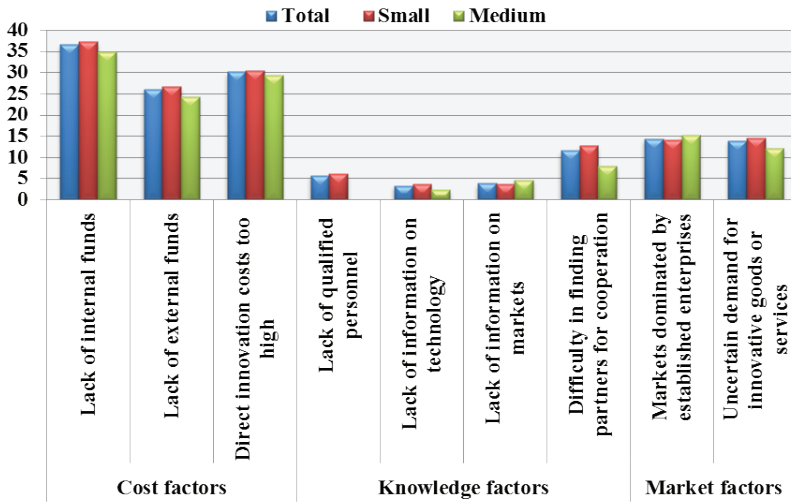
Separate observation of SMEs that are innovators and SMEs that are not, is based on the works of many relevant authors, such as Arundel (1997), Mohnen & Rosa (2000), Baldwin & Lin (2002), Galia & Legros (2004), Iammarino et al. (2006), Hölzl et al. (2010), etc. All of them show that innovative enterprises consider limiting factors for innovation activities as more important, compared to non-innovative enterprises. Innovative enterprises pay more attention to the barriers and constraints than enterprises that do not innovate. Also, innovative enterprises differ among themselves. More innovative SMEs and SMEs with more intensive R&D activities pay more attention to constraints and barriers. Therefore the empirical literature views enterprises' responses regarding constraints they encounter when innovate, as an estimate of those enterprises and as a measure of their ability to overcome these problems and constraints.

Galia and Legros, as well as Baldwin and Lin before them, have provided two possible explanations why there are differences in the responses of the enterprises-innovators and enterprises-non-innovators. The first explanation assumes that performing innovation activities increases awareness of the difficulties and constraints that can hamper, slow down and prevent an enterprise from further innovating. The second explanation starts from the formulation of questions in the CIS. In order to answer the questions concerning the barriers to innovation, enterprises have to assess the problems they are faced with and which they need to overcome in carrying out innovation activities.

Hölzl et al. (2010) points out that the existing literature on the barriers to innovation is focused on the perception of barriers in innovative enterprises, but does not consider the basic constraints that cause hindering innovation activities in non-innovative enterprises. D'Este, et al., (2008) show that non-innovative enterprises do not have enough interest in performing innovation activities even when barriers to innovation are very low (D'Este et al., 2008). Thus, these enterprises do not tend to be innovative and do not consider constraints the same way the innovative enterprises do. Accordingly, these authors distinguish between revealed barriers and deterring barriers. The former hinder a successful innovation and the latter prevent enterprises from engaging in innovation activities.

Research results on innovation activities in SMEs in Serbia (conducted in 2011) show that the most serious restrictions are cost factors (lack of internal funds, high costs of direct innovation and inability to provide financing of innovation activities from the sources outside the enterprise). Domestic innovative SMEs emphasized also market factors as significant limiting factors for innovation activities (markets dominated by established enterprises and uncertain demand for innovative products). Knowledge factors (such as lack of qualified personnel, lack of information on technologies, lack of information on markets) are the least important for domestic innovative SMEs in terms of limiting innovation activities; the only factor that is slightly more significant for those SMEs is difficulty in finding partners for cooperation.

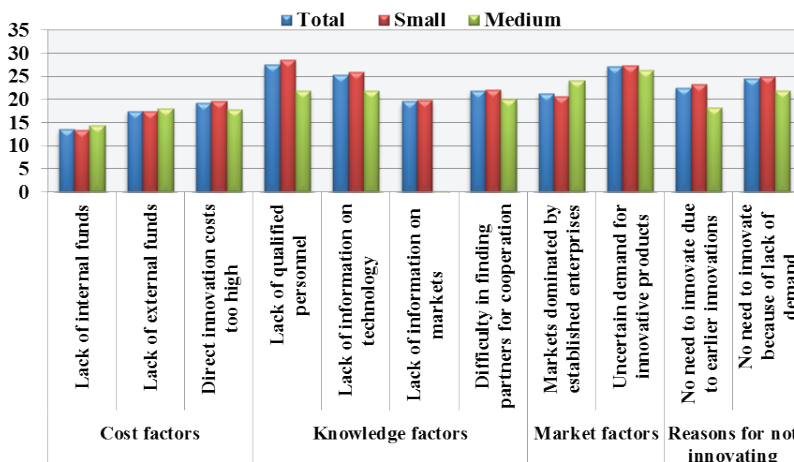
Figure 2: Constraints to innovation in SMEs-innovators in Serbia in 2010



Source: The authors, according to: (Statistical Office of the Republic of Serbia, 2011: 6)

Unlike SMEs-innovators (the highest barriers to innovation are on the cost side), SMEs-non-innovators are faced more with knowledge barriers and market barriers. These enterprises referred to lack of qualified personnel, uncertain demand for innovative products and lack of information on technologies as the most important restrictions. These SMEs presented two main reasons for not innovating: no need to innovate because of lack of demand for innovations; and no need to innovate due to earlier innovations.

Figure 3: Constraints and barriers to innovation in SMEs-non-innovators in Serbia in 2010



Source: The authors, according to: (Statistical Office of the Republic of Serbia, 2011: 7)

Only under such circumstances, SMEs are able to express their full developmental potential and contribute to the development of the economy and society as a whole.

Conclusion

Several studies on barriers to the development of innovation in small and medium-sized enterprises were conducted in the Republic of Serbia. Studying of the barriers was carried out within the broader research aimed at considering the most important factors affecting the operations of SMEs. The main purpose of the above mentioned empirical research was to portray the situation in the economy and use obtained results as a basis for creating development policy. Problems such as macroeconomic instability; poor regulatory, administrative and development policies; unsupportive business environment; systemic corruption; weak rule of law; costly, redundant and inefficient procedures; low levels of education; lack of a skilled workforce; low standard of living, etc. also prevent SMEs in the Republic of Serbia from being successful and more innovative.

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Endnotes:

1. Research on innovation activities in Serbia was conducted in order to consider a real attitude of an enterprise business policy toward innovation activities, in terms of awareness of the need for, and the effects of innovation, existing capacities of enterprise as well as the factors that have hampered or slowed down this type of activity.

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THE ROLE AND IMPORTANCE OF FREE ZONES IN ECONOMIC DEVELOPMENT: THE EXPERIENCE OF THE REPUBLIC OF SERBIA AND THE EUROPEAN UNION ³

Abstract

In the modern business conditions, the creators of the new industrial policy pay increasing importance to the development of free zones as an important instrument of business infrastructure. Free zones offer huge chances for the establishment and development of small and medium-sized enterprises and improving their overall business. Experience has shown that many countries owing to the free zones achieve significant development results in comparison with other countries. The countries that have developed free zones generate: significant inflow of foreign direct investment and new technologies, rising living standards and increasing employment. Those countries that develop free zones have a greater competitive advantage, achieve faster economic development and efficiently engage in international flows. The aim of this paper is to, based on a comparative analysis of business zones in the Republic of Serbia and the European Union, indicate that the Republic of Serbia in recent years has improved its position and the investment climate, so that operation of the free zone is a lot easier. Whether the free zones in one country, and in the Republic of Serbia will be successful, depends primarily on the country's attitude towards the concept of free zones and how that affects their development, as well as the new industrial policy, its objectives and instruments. It is important to emphasize that the role of the state has changed significantly in the development of free zones, which includes as well a brighter and better future in terms of stable operation of the free zones and achieve significant results.

Key words: free zones, economic development, foreign direct investment, Republic of Serbia, EU.

JEL classification: E66, O10, O38

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УЛОГА И ЗНАЧАЈ СЛОБОДНИХ ЗОНА У ПРИВРЕДНОМ РАЗВОЈУ: ИСКУСТВО РЕПУБЛИКЕ СРБИЈЕ И ЕВРОПСКЕ УНИЈЕ

Апстракт

У савременим условима пословања креатори нове индустријске политике све већи значај поклањају развоју слободних зона као важном инструменту пословне инфраструктуре. Слободне зоне пружају огромне шансе за оснивање и развој малих и средњих предузећа и доприносе побољшању њиховог укупног пословања. Пракса је показала да многе земље захваљујући слободним зонама остварују значајне развојне резултате у поређењу са другим земљама. Наиме, земље које имају развијене слободне зоне остварују: значајан прилив страних директних инвестиција и нових технологија, пораст животног стандарда и повећање запослености. Оне земље које развијају слободне зоне имају већу конкурентску предност, остварују бржи привредни развој и ефикасније се укључују у међународне токове. Циљ овог рада је да на основу компаративне анализе пословања зона у Републици Србији и Европској унији, укаже да је Република Србија у последње време побољшала своју позицију и инвестициону климу, тако је да је пословање слободних зона доста олакшано. Да ли ће слободне зоне у једној земљи, па и у Републици Србији бити успешне, зависи првенствено од односа државе према самом концепту слободних зона и начина на који утиче на њихов развој, као и од нове индустријске политике, њених циљева и инструмената. Значајно је истаћи да се улога државе знатно променила у развоју слободних зона, као и да постоји светлија и боља будућност у погледу стабилнијег функционисања слободних зона и остварења значајних резултата.

Кључне речи: слободне зоне, економски развој, стране директне инвестиције, Република Србија, ЕУ.

Introduction

The process of transformation and structural adjustment of the economy of countries in Eastern and Central Europe started in the eighties of the last century and represents a sort of “catching up” with the developed Western European economies, but at a low level. (Gligorijević, Petrović, 2008, p. 21)

Applying the concept of free zones is very important and desirable in all countries, as well as in the Republic of Serbia, considering that as an important instrument of a new industrial policy, if it's properly places and designed, can lead to achieving the goals of economic development. Because of that, this concept is accepted in developed counties, and supported by the world's great institutions and the European Union. Future economic development of the Republic of Serbia must have a much greater relay on new forms of business, in which free zones and industrial parks play an important role.

In the previous period of development, there were no favourable conditions in the operating of free zones in the Republic of Serbia, which significantly influenced the

diversion decisions of foreign investors. However, in the last few years, the conditions of business have been improved, as well as the investment climate, all of which significantly positively influenced stable business of free zones in the Republic of Serbia.

In the last twenty years, free zones have become more popular, so that every country has its own motives for their formation. Government must assess positive and negative aspects of the formation of free zones. The fact is that, free zone will be useful for the host country if: attracts direct foreign investments, thus increasing foreign exchange inflow and exports, attracts transfers of modern technology and if recruit and activate unemployed local workforce. Aside from that, the zone can have a very positive impact on the overall environment and is in the function of regional development.

The institute of free zones should facilitate and speed up the latest development of domestic production in one country, with many exemptions (customs, tax) and benefits in order to increase the export of goods. Modern free zones should enable modern advanced production, with new modern technologies with the appropriate customs and foreign trade benefits. In that way, the goods produced in those zones will be competitive in the world's markets, and will enable faster integration of domestic economy into international economic flows and international economic integrations.

In accordance with the laid goal, this paper is structured as follows. After introductory considerations, we will give an overview of the main features of free zones in the Republic of Serbia. In the second part of the paper, the authors give the analysis of the European experiences in forming the free zones.

The Features of Free Zones in the Republic of Serbia

The fact is that the host country since founding the free zones, expect to achieve certain benefits, such as increasing employment, greater inflow of direct foreign investments and access to modern technology. However, due to the lack of reliable data, it is very difficult to accurately estimate the costs and profit, that is how much the expectation is achieved during the time. When the host country assesses advantages, that is, the benefits, which it can have from existence of free zones, then it's necessary to compare the benefits with total costs. Benefits would certainly be revenue achieved from domestic production, with the use of local materials and equipment without any taxes and with hiring local work force. On the other side, the costs would include only expenditure for maintenance of zones, as well as certain payments for the use and maintenance of infrastructure.

When a country decides to form the free zone, it must assess positive and negative effects on their formation, must provide the necessary conditions for business, in order to achieve greater efficiency. In fact, the following conditions should be considered: legal and political stability and security, tax exemptions during export/import of goods from the zone, as well as exemption from custom duties, developed infrastructure, favourable investment climate, warehouses for storage of goods, than, not less important, water, electricity, gas, heating, sanitation, telephone, internet, well-organized transport, as well as the existence of a good banking system, parking, and of course, inevitable administration records. These are generally conditions that would attract direct foreign investments.

Foreign investors, when making investment decisions give a great importance to that element of the investment climate, which refers to the legal and political stability and

security. This immediately implies that each country who plans to form a free zone, and it is necessary to bring the Law that will protect it from other countries. Aside from that, it is necessary to have certain rules for easier establishment and operations of companies in the zone, as well as regulations to facilitate the employment of labour.

Adoption of the Law of Free Zones in the mid of 2006, as well as improving access and strengthening state support, contributed to increasing the efficiency of business operations within the free zone in the Republic of Serbia. There is a need for synchronization, amending, and adopting new institutional arrangements, in the field of labour relations, taxes, duties, building land, environmental protection, and other areas, affecting along with the creation of a favourable business environment.

Besides the Government, a very important role in functioning and development of free zones has The Free Zones Administration at the Ministry of Finance, which began in late 2008. Considering that the Republic of Serbia until 2008 did not have a professional body that would deal with issues related to the free zone, the constitution of the Board made a great progress in the smooth functioning zone. In fact, there was a plan to bring certain benefits for work in areas such as the abolition of the tax on corporate profit tax, exemption from payment of tax on labour earnings for all jobs, and exemption from city and municipal taxes in the construction of new facilities in the zone. There is a suggestion that in the period ahead, the income tax should be abolished too, which will be a great stimulus for foreign investors in the Republic of Serbia. A special task of the Free Zones is the cooperation with EU free trade zones and free zones associations of the EU, so that with the analysis of subsidies allowed in the EU, the proposed legislative solutions could create the most favourable business environment for the free zone. (Ministarstvo finansija Republike Srbije, Uprava za slobodne zone, 2011, str. 22). Representatives of the Free Zones expect that by 2020 the Republic of Serbia will be covered with a network of free zones, which will with simple customs procedures and operations without paying customs duties, attract investors from around the world and an industry “hub” in Southeastern Europe. (Ministarstvo finansija Republike Srbije, Uprava za slobodne zone, 2011).

Free Zones, as an important element of the customs system of the Republic of Serbia, are set to be a function of exports, because they give various benefits and exemptions from payment of duties and tariffs on goods imported into the Serbian free zone, and exported exclusively to the foreign markets. This means that, taking into account the geographical location of the area, cheap labour, benefits and facilities for the payment of customs duties, they may become an important factor in the future exports of the Republic of Serbia.

According to sources of the Customs Administration, the largest exporters of the Republic of Serbia in the period from January 2013 to November 2013 were companies “Fiat Automobiles Serbia”, “Petroleum Industry of Serbia” and “Tigar Tyres”, which were operating in the free zone regime in the Republic of Serbia. “Fiat Automobiles Serbia” operates in the “FAS free zone” in Kragujevac and is the biggest exporter of the Republic of Serbia. The company has achieved a total export amount of over 1.46 billion Euros during this period (Ministarstvo finansija Republike Srbije, Uprava za slobodne zone, 2015b).

Table 1 15 largest exporters in the period January - November 2013

<i>No.</i>	<i>Name of the exporter</i>	<i>Place</i>	<i>Export*</i>
1.	<i>Fiat automobili</i>	<i>Kragujevac</i>	<i>1.416,10</i>
2.	<i>Naftna industrija Srbije</i>	<i>Novi Sad</i>	<i>270,80</i>
3.	<i>Tigar Tyres</i>	<i>Pirot</i>	<i>216,9</i>
4.	<i>HIP-Petrohemija</i>	<i>Pančevo</i>	<i>215,2</i>
5.	<i>Hemofarm</i>	<i>Vršac</i>	<i>147,1</i>
6.	<i>Gorenje</i>	<i>Valjevo, Stara Pazova</i>	<i>139,7</i>
7.	<i>Tarkett</i>	<i>Bačka Palanka</i>	<i>127,6</i>
8.	<i>Železara Smederevo</i>	<i>Smederevo</i>	<i>123,3</i>
9.	<i>Yura Corporation</i>	<i>Rača</i>	<i>107,9</i>
10.	<i>Valy</i>	<i>Belosevac</i>	<i>106,6</i>
11.	<i>RTB Invest</i>	<i>Bor</i>	<i>99,9</i>
12.	<i>Impol Seval</i>	<i>Sevojno</i>	<i>91,2</i>
13.	<i>Ball pakovanja Evropa BEO</i>	<i>Beograd</i>	<i>90,7</i>
14.	<i>Sirmimum Steel</i>	<i>Sremska Mitrovica</i>	<i>89,7</i>
15.	<i>Tetra Pak Production</i>	<i>Beograd</i>	<i>89,5</i>

* In mill. EUR

Source: *Ministarstvo finansija Republike Srbije, Uprava za slobodne zone, (2015a)*
<http://www.usz.gov.rs/aktuelno.php#44> (6.2.2015)

Viewed by the value of exports in the period from January to November in 2013 (Table 1), “Petroleum Industry of Serbia”, which operates within the free zone “Novi Sad”, is on the second place as the largest exporter with realized value of exports in the amount of 270.80 million Euros. In third place is the company from Pirot “Tigar Tyres”, which, with the realized value of exports in the amount of 216.9 million Euros, has positioned itself among the most successful exporters in Serbia.

Free Zone of the Republic of Serbia in 2013, achieved a turnover of approximately 4 billion Euros, which is 30% more than the previous year, they employed more than 18,000 people and operate 220 companies. The share of domestic production materials in the production is particularly important, which compared to the 2012, increased by 260%. At the same time, exports of goods from free zones increased by 143% to 2.1 billion Euros, which is one fifth of total exports from Serbia. (Privredna komora Srbije, Slobodne zone, 2014, p. 19)

Exports and placement of goods to the market of the Republic of Serbia, as well as the value of services provided in a free zone increased in comparison to 2012 for 99.77%. According to available data, the exports of goods in 2013, is higher than in the previous year by a substantial 143.15%. The share of exports of goods from the free zones in the total export of the Republic of Serbia in 2013 amounted to 19.68% (2,164,558,008.00 Euros), representing an increase of 9.61% compared to 2012. (Ministarstvo finansija Republike Srbije, Uprava za slobodne zone, 2014, p. 43).

According to the Agency for promotion and foreign investment in the Republic of Serbia exported goods worth about 10,999,000,000.00 Euros in 2013. On the list of the fifteen largest exporters in the Republic of Serbia in 2013, were enterprises, users of free zones, “Fiat Automobiles Serbia”, “Copper Mill”, “Tiger Tyres”, “Impol Seval” and “Siemens”.

The total value of the realized turnover of goods and services increased by 97.44%. This increase was influenced by growth in the value of imports of goods, exporting and selling of goods on the market of the Republic of Serbia, as well as the value of services provided in a free zone. The value of imports of goods in comparison with 2012 increased by 55.55%, while imports of raw materials increased by 57.18% and imports of finished products for 39.32%. (Ministarstvo finansija Republike Srbije, Uprava za slobodne zone, 2014, p. 43).

On the territory of the Republic of Serbia in 2013 functioned nine free zones, namely: Free zone “Pilot” Free Zone “Zrenjanin,” Free Zone “Subotica” Free Zone “Novi Sad”, “FAS Free Zone”, Kragujevac, Free zone “Sabac” Free Zone “Uzice” Free Zone “Smederevo” and Free Zone “Krusevac”. The total value of realized turnover of goods and services in 2013 over the said free zones amounted to 4,935,117,473.00 Euros. In comparison with 2012, the total turnover increased by 97.44%. The increase in turnover was affected by an increase in imports of goods, raw materials and finished products, as well as an increase in exports of goods. Imports of goods increased by 55.55% compared to 2012, and to 57.18% for intermediate goods, while imports of finished products increased by 39.32%. Exports of goods increased by 143.15% compared to 2012, while the export of goods to the market of the Republic of Serbia increased by 221.35% compared to 2012. The value of the services provided in the free zones is higher in comparison to the year 2012 for 99.77%. That increase the total value realized turnover of goods and services in 2013 was affected by a significant increase in the total value of realized traffic free zone “Kragujevac” for 170.55%, the Free Zone “Zrenjanin” for 188.23% and an increase in realized turnover of Free Zone “Subotica” to 24,33%. (Ministarstvo finansija Republike Srbije, Uprava za slobodne zone, 2014, p. 3)

On the list of the best free zones in the world, which traditionally publishes the prestigious newspaper “Financial Times”, there are two free zones in the Republic of Serbia, among 34 best free zones. These are: Free Zone “Zrenjanin” which won the award in the category of incentives offered to investors, and Free Zone ‘Pilot’ “in the category of incentives offered for reinvestment (Ministarstvo finansija Republike Srbije, Uprava za slobodne zone, 2015c).

1) *Free zone “Pilot”* as one of the most successful zones, located on the international route (E-80), the Corridor 10 covers an area of 102 ha 65 a 63 m². The operations started in April 1998 and since then has reached excellent results and became the leading free zone in the region and achieved positive export effects. Unlike other zones, which generally operate as a commercial free zone, this zone is an exception and it functions as an export-production and improves the overall export of the Republic of Serbia. The goal of this zone is the construction of infrastructure and providing the best possible customer service. It engages in producing mixture to produce passenger and truck tires, with the help of two strong joint venture company Michelin from France and Tigar AD from Serbia.

Free zone “Pilot” currently has eight production programs, one of which is the dominant plant for the production of tires (Michelin) allowing the use of the free zone as export processing zones (export processing zones). This has enabled the testing mode with production activities in the free zones in the Republic of Serbia and thus provided a response that the use of free zones in the function of production for export gives good results. (Vlada Republike Srbije, 2011, p. 10)

It is worth noting that at the level of the Michelin group decided on future investment in the expansion of production capacity to 8,000,000 pieces of gum in 2013 to 12 million pieces of rubber by 2016, and the plan is to bring about an increase in production by 50% to the value of 215,000,000.00 Euros. In the area of the planned construction of an intermodal terminal, which along with the completion Construction of Corridor 10 will be an extra incentive for foreign investors to invest in the less developed part of Serbia. Besides that, Zone Pirot provides its customers the following services (Kozomara, 2003, p. 174): monitoring zone users, production and storage, forwarding, the container terminal, organization of international transport, storage of goods.

Companies operating in the area and contributing to the positive results achieved are: “Tigar Tyres” - production of car tires; “TIGAR FOOTWEAR” - production of rubber footwear; “TIGAR TECHNICAL RUBBER” - the manufacture of tires; “Novadis”- equipment for fishing; “ELISA PRO” - herbal and cosmetic products; “RBL” - for packaging of food products.

Free zone “Pirot” achieved in 2013, total exports of goods in the amount of 277,567,753.00 Euros. The total export of goods from a free zone, the share of goods produced in the free zone is 86.70%, or 240,655,047.00 Euros. Compared to the year 2012, the total exports of goods increased by 10.27%, but the export of goods manufactured in the free zone increased by 17.29%. Imports of goods compared to the 2012, also increased by 33.49%. Imports of raw materials increased by 12.11%, while imports of finished products increased by 249.43%. (Ministarstvo finansija Republike Srbije, Uprava za slobodne zone, 2014, p. 6). The Free zone “Pirot” realized a total turnover amounting to 547,874,006.00 Euros. Turnover in this free zone increased by 14.18% compared to 2012. The total value of goods sold and services rendered increased by 3.84%.

Free zone “Pirot” has a very good cooperation with foreign partners and thus represents one of the pillars of the development of the town of Pirot, and the entire region. The continuous inflow of foreign capital in the previous period provides certainly increase in foreign exchange earnings from exports of goods from the zone and also affects the increase of employment, not only in the zone, but also to the entire municipality and the wider region. Free zone “Pirot”, in 2014 was the second time among the 34 best zones in the world and in the “Financial Times”, was the most successful in the field of reinvestment. The turnover of 500 million Euros is an imposing figure, and achieved by companies operating within the Zone and have approximately 5,000 employees.

The fact is that Zone Pirot achieved outstanding results and it is on par with some areas of the world, although the business climate could be improved if they introduced some tax breaks, such as a zero corporate income tax within the limits Zone. Such move of policy makers will contribute to improving the competitiveness of Pirot zone relative to the zone in the region.

2) As a second zone that achieves impressive results is *Free Zone “Zrenjanin”*. FDI Magazine proclaimed this zone the best in Europe in the category of incentives offered to investors. This zone offers exemption from customs duties when importing and exporting raw materials, equipment, and materials for infrastructure, as well as many other benefits.

Free Zone “Zrenjanin” was founded in 2005 and has an area of 98 ha. The development strategy of the town of Zrenjanin is planned to establish these zones, with the aim of attracting foreign investors and creating new jobs for faster economic develop-

ment of the entire region. Free Zone should enable the construction of infrastructure, transfer of new technologies and expertise, with easier hiring of unemployed workforce and ensuring better living standards of the population and rapid industrial development. Companies operating in the Zone “Zrenjanin” are: “KOLPA” - manufacturing shower, bath tub and hydro massage device; “LK Armature” - production of steel pipes and “Draexlmaier” - production of parts for the automotive industry. Activities carried out within these companies are: production of goods, warehousing and the same material for playback, the entire logistics, sales, import, export goods, insurance business, finances, tourism services, etc.

The Zone achieved significant results, as evidenced by the following data. The Free Zone “Zrenjanin” realized a total turnover amounting to 256,316,329.00 Euros. Turnover in this free zone increased by 188.23% compared to 2012. The total value of goods sold and services rendered increased by 188.74%. (Ministarstvo finansija Republike Srbije, Uprava za slobodne zone, 2014, str. 4). Free Zone “Zrenjanin” realized export of goods in the amount of 83,292,506.00 Euros. The total export of goods from a free zone, the share of goods produced in the free zone is 99.57%, or 82,932,713.00 Euros. The total exports of goods increased by 87.69%, while the export of goods manufactured in the free zone increased by 87.65% compared to the 2012. Imports of goods compared to the 2012 increased by 187.63%, while imports of intermediate goods increased by 190.86%, while imports of finished products increased by 24.18%. Such a significant increase in the total exports and imports in 2012 was a result of operations of the company “DAD Draexlmaier Automotive” Ltd. located in a free zone which is a partner of “Fiat Automobiles Serbia” and which had total exports of goods in the amount of 76,541,916.00 Euros, while the total export of goods in total “FAS Free Zone”, Kragujevac was 52,307,763.00 Euros. (Ministarstvo finansija Republike Srbije, Uprava za slobodne zone, 2014, p. 7)

3) “FAS Free Zone”, Kragujevac had the largest export of goods in the amount of 1,419,077,969.00 Euros. The total export of goods from a free zone, the share of goods produced in the free zone is 99.75%, or EUR 1,415,459,861.00. Compared to 2012, total exports of goods increased by 378.16%, but exports of goods produced in the free zone increased by 377.19%. The imports of goods compared to 2012, also increased by 433.87%. Imports of raw materials increased by 70.39%, while imports of finished products increased by 90.11%. (Ministarstvo finansija Republike Srbije, Uprava za slobodne zone, 2014, p. 6)

Company Fiat cars and the city of Kragujevac founded in 5 November 2009 the Free Zone “FAS”, which is primarily intended for the automotive industry. It covers an area of 176 ha 45 a 62 m² and includes the entire area of the factory cars and Grošnica territory of 29 ha 76 a 19 m². In the area of “FAS” free zones operate following companies: Fiat Automobiles Serbia and its subcontractors: Magneti Marelli, Johnson Controls Ltd. - the instrument panel, centre console, door panels and rear trim; Magneti Marelli Ltd - front and rear bumper; Magneti Marelli Automotive - exhaust systems HTL - mounting the tire; Johnson Controls - manufacturing seats; Sigit - production of plastic parts and promo Automotive - pressings for vehicles. Companies operating in the zone have the latest techniques and technology used in the automotive industry. Also, they employ 4820 workers, which enables continuous improvement in order to acquire new knowledge and skills. The largest number of employed workers has Free Zone “Piroć” 4.881;

the second largest is the Free Zone “Kragujevac”, and the third Free Zone “Zrenjanin” which employs 2.929 workers.

The work of this zone has a great impact on the business of other undertakings operating in the territory of the Republic of Serbia. In particular, this influence is felt in the economy of the city of Kragujevac, as well as the wider region. The biggest turnover was realized in “FAS Free Zone” Kragujevac and amounts to 3,254,183,796.00 Euros, or 65.94% of the total realized turnover of goods and services in free zones. Compared to the 2012 the total turnover in this free zone increased by 170.50%, and the value of goods sold and services rendered to 433.87%. (Ministarstvo finansija Republike Srbije, Uprava za slobodne zone, 2014, p. 4). The free zone in Kragujevac, aside from achieving the best results, in comparison to other free zones, performs continuous investments in the most modern equipment and facilities in order to achieve even better results. During 2012 the investments into production models FIAT 500L and increased investment in working capital. The new FIAT car model scored significant success in 2013, when it sold over 100,000 cars, which is in some way fulfilled the expectations of investors.

Based on the previous analysis it can be concluded that in 2013 there was a slight increase in the total results of operations of free zones in the Republic of Serbia in relation to the 2012. It is evident that the positive tendency occurred due to the significant increase in total turnover of goods and services imports in the “FAS Free Zone” from Kragujevac Free Zone “Zrenjanin” and Free Zone “Piroć”.

European Experience in the Formation of Free Zones

Free zones have become increasingly popular in the EU as a tool for attracting foreign direct investment. In the last fifty years free zones became an important part of the strategy of economic development of many EU countries, but only in the last thirty years saw their dynamic development.

The largest free zone in the EU are free port of Hamburg, Free Zone Shannon in Ireland, the zone in Italy (Trieste, Venice), in Austria (Graz, Linz and around Vienna), Spain (Seville), etc. The regulation of free zones in the EU is two-stage, meaning that in the first instance, each Member State shall issue a decision on the opening of free zones and shall inform the European Commission, which appeal brings a positive or negative decision. The operations of free zones in the EU is controlled by the European Commission, but it is noticeable that some “strong” states of the Union, which traditionally have free zones, are reluctant to accept a common legislation. An example is the Free Port of Hamburg, where the German government brokered to be exempted from the obligation of issuing licenses for business users by the legislation of the EU.

Some EU member states have achieved remarkable results in the development of free zones, so that their experiences were very important and serve as an example of good practice. Hereinafter, the authors analyze the experiences of some European countries in the establishment of free zones, namely: Spain, Portugal, Slovakia, Hungary and Italy.

- 1) Very successful free zone is the EU’s *Barcelona Free Zone* (Zona Franca Barcelona), which includes 16,000 m² and within it there are free industrial zones and logistics parks. Within it operates over 100 companies, of which 25 are duty free operators and has, according to some data, about 1000 employ-

ees. Achieving good results and makes permanent investments in modern technology and transport. Good location and high quality offer stands this zone from other zones that are located on the territory of the EU.

- 2) *Madeira Free Zone* is located in Portugal, founded in the early 1980s by the European Commission, and covers an area of 138 ha. This zone is a little specific and for one reason, and that is it can import goods originating from the EU, but also goods that encourages and from other countries outside the EU, without payment of customs duties and other duties. This zone is constantly achieves good results, while the number of companies within zone time increased from 188 in 1990 to 900 in 2009. Although the area offers a wide range of customs and tax benefits as well as opportunities to countries that are not members of the EU easier to fit in and engage the EU market, more than 100 companies in 2012 after the budget left the zone. Perhaps one of the reasons for leaving the zone, was just inability to use EU structural funds, as well as increasing the total debt zone.
- 3) *Slovakia* has established a free zone in Kosice on an area of 12 hectares. Its existence was not an important factor for the Slovak economy and did not play an important role in attracting foreign investment. (Ministarstvo trgovine SAD, 2002). It was founded in 1994 and by special Law on Free Zones (which was amended in 2008 in accordance with EU rules). Within the zone by 2008 there were more than 200 companies mainly from the field of automotive industry and high tech technologies that have around 9000 employees. In addition to these, companies in Slovakia there are five business innovation centres, which offer plenty of information and provide a great help to small and medium-sized enterprises, to be able to engage in the implementation of modern technologies. The largest inflow of foreign direct investments was made in the automotive industry. Volkswagen near Bratislava made a big factory, where there are also their installations and facilities of their suppliers. In fact, the complex and makes a huge free zone. The car factory Volkswagen Slovakia in 2013 produced a record of 426,313 cars, of which it exported 99.8% and generated revenue of 6.5 billion Euros in revenue. Otherwise, the factory employs about 9400 people. In addition to Volkswagen, Peugeot, Citroen and Kia have made their factories within the free zone.
- 4) *Hungary* has free trade zones which were established under the control of customs services (National Headquarters of the Customs and Finance Guard). In fact, in this country, where the free zones are very popular, there are two types of free zones. The commercial, which are purely commercial in character, and industrial free zones engaged in the production of goods for export. In Hungary there are 101 free zones. What makes the free zones in Hungary different from free zones in the EU is the fact that a Hungarian company created a free zone, while in other EU countries and more companies operating within the zone. Companies in Hungary operating in the zone have, as in other EU countries, certain benefits and allowances. There are benefits in the form of exemption from payment of tax on goods exported. They realized exports of machinery (electrical, office equipment) in the international market to 90%. It is these companies that contribute to the free zones in Hungary

achieved outstanding results, while based on some data, these results exceed expectations. In this regard, they are the engine of the Hungarian industry and foreign trade. However, after gaining full EU membership, Hungary had to change its policy on free zones. It is certainly influenced the decrease in free zones, because many companies operating within the zone did not correspond to the new business conditions.

- 5) *Free zones in Italy* occurred in the 1970s and 1980s of the twentieth century. Emilia Romagna and Veneto are the two most important regions that have developed legislation on free zones. Veneto has approximately 4.5 million inhabitants and around 1500 free zones and occupies about 25,000 hectares of land. Characteristically for the zones that are located in this region, is that they are usually very small and do not take up space larger than 1,000 ha. Within these zones the most common are operating industrial companies, as the cost of operations in the zone is much smaller than firms operating independently. However, as Italy has benefited from free zones, so their establishment have their bad sides. They are reflected primarily in environmental pollution, then, have a bad influence on agriculture, and cause high costs of building modern infrastructure at multiple locations.

Conclusion

The free zones in Serbia have much greater benefits than the neighbouring countries, which is the result of favourable geographical position and possession of cheap labour. However, for some long-term success it is necessary to accurately define the objectives, types and directions of development zones. At the same time, it should create a favourable investment environment, through a variety of tax incentives and benefits to companies in the zone, which can have a positive influence on attracting foreign investment.

Group of Free Zones of the Association of Commerce Serbian Chamber of Commerce (PKS) will propose during the 2015 to all relevant ministries and some important institutions of a series of new measures to improve the business in free zones, so that they in some way have become more attractive for foreign investors. Such measures would be related to full exemption from payment of corporate income tax, so it was 0%. Also, measures should be referred to the simplification of the procedure of financing the construction of certain buildings within the zone, as well as customs procedures when importing and exporting goods. A big role in the future development of free zones have local governments that define a series of incentives (tax exemption on earnings of workers, of all newly created jobs, as well as taxes and fees for the construction of new facilities necessary for carrying out production activities within the zone) for successful business zone.

It should be noted that some EU member states have achieved remarkable results in the development of free zones, so that their experiences have very important and serve as an example of good business. In the last fifty years free zones have become an important part of the strategy of economic development of many EU countries, but only in the last thirty years have seen their dynamic development. In addition, it is still very important for EU member States, that goods entering the Zone, which is stored and then transported and finally exported from the Zone, is exempt from all customs formalities.

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PROPOSED METHODS OF PREDICTING ACHIEVEMENT OF STUDENTS THAT IS IMPORTANT FOR THE FUTURE BUSINESS PERFORMANCE

Abstract

Today's business cannot be imagined without the support of IT developments, information and knowledge are the two basic resources for successful business. In this context, it is critical comprehension and understanding of the role of teachers, schools and families in the education process, especially in primary education as the basis of further development of the individual personality, and therefore the development of society. The paper summarizes the application of Data Mining techniques in the field of primary education, with special reference to the method of binary logistic regression. It also presents the results of research and gives a suggestion of appearance and functionality of Web-based system for mining data from different sources, with emphasis on the application of such a system for adequate measures for the improvement of the level of achievement of primary school students. The proposed system would be based on the results of data mining included providing support to schools and parents in making a decision on taking measures to improve the level of achievement and optimal choice of future profession.

Key words: binary logistic regression, the educational process, achievement

JEL classification: C 520, I 00

ПРЕДЛОГ МЕТОДЕ ПРЕДВИЂАЊА ПОСТИГЊУЊА УЧЕНИКА ОД ЗНАЧАЈА ЗА БУДУЋИ ПОСЛОВНИ УЧИНАК

Апстракт

Данашње пословање немогуће је замислити без подршке информатичких достигнућа, а информације и знање два су основна ресурса за успешно пословање. У овом контексту од кључне је важности разумевање и

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схватање улоге наставника, школе и породице у образовно-васпитном процесу, посебно у основном образовању као темељу будућег индивидуалног развоја личности, а самим тим и развоја друштва у целини. У раду је дат преглед примене техника дата миниг-а у области основног образовања и васпитања, с посебним освртом на метод бинарне логистичке регресије. Такође, приказани су резултати истраживања и дат је предлог изгледа и функционалности Веб базираног система за миниг података из различитих извора, са освртом на примену таквог система за адекватно предузимање мера за побољшање нивоа постигнућа ученика основних школа. Предложени систем би на основу резултата добијених дата миниг-ом пружао подршку школи и родитељима приликом доношења одлуке о предузимању мера за унапређење нивоа постигнућа и оптималног избора будуће професије.

Кључне речи: бинарна логистичка регресија, образовно-васпитни процес, постигнуће

1. Introduction

A way that could increase the success of using databases to extract useful information, improve business functionality and operation of an organization is called the Data Mining (hereinafter: DM). Data mining is the search for valuable information in large volumes of data. Data mining is a research and analysis of large amounts of data using automatic or semi-automatic method in order to discover meaningful regularities. There is no recipe for successful DM that will surely result in finding valuable information. DM probability of success will increase if you follow the steps of the process of data mining as follows: the first step is defining of a “business” issue; the second step is the preparation of data that includes the determination of the necessary data transformation, sampling and data evaluation. Modeling is the third step that includes selecting methods of data mining, development and evaluation of models. The fourth step is implementation, which includes the interpretation and use of results. In studying the level of educational attainment, one of the main questions is to what extent and on which memorials teachers, schools, students and their environment we can explain or predict school success and the level of student achievement.

When educational institutions apply DM existing data they can detect a new, useful and potentially important information that would otherwise remain as a record in a database. The aim of the research presented in this paper is to analyze the possibility of applying techniques DM in the educational system of elementary schools, relying on open data on schools in perspective of “unique education information system of the Republic of Serbia”, data from existing databases within the school, as well as other external and internal data sources.

2. The importance of measuring student achievement for their future business success

Planning of labor force and directing of education system in direction of discovering achievement of students is imperative of present time. Without quality of education, there is no quality of knowledge, no progress of society, where education has a function of individual personal development and development of future generations (Sučević & Kerić, 2015) that generate successful economy. Intensive changes of social and economic occasions on the global level have caused changes in education system of many countries (Tomić, Spasenović & Hebib, 2015; Ilić-Rajković, 2015). Today's practice shows that there are rarely changes in curriculum for primary education, although there are attempts for their innovation (Mikanović, 2014) in order to find the best way for enabling student to get knowledge needed in the economy of a country.

Today is inevitable connection between education system and economic system. Obtaining information about teaching, success in its implementation, one can predict outcome and result that students will contribute to the community as its future active working members. The process of education includes self-education and the influence of environment on education (Paszek, 2012). By transferring not only systematic acquired knowledge, but also the development of certain skills such as leadership, cooperation within the teams, communication with the environment, negotiation and risk taking (Dietl, 1997) it is possible to direct and measure certain achievements in direction of their opportunities for future business orientation and results. Unemployment is one of the biggest problems of our society which is result of the transition to the market concept of economic activity and the affirmation of labor market (Milosevic & Stojković, 2013). This problem can be solved by determining the effect and mode of education at the earliest stage.

Economic development has always been based on the use of knowledge, but extent of the importance of knowledge for the development of economic processes has changed over the years (Nijkamp, & Siedschlag, 2011), so knowledge has to be predicted in order to assess future business base in economy. Educated and adequately trained population can create, share and use knowledge, while efficient innovation system of enterprises, research centers and other organizations may be incorporated into the growing activities of global knowledge (Ilic & Nedic, 2014) in order to measure knowledge and achievement on adequately way and to direct it to the needs of the economy.

3. Methods of DM

Methods of data mining is used to build a model according to which we will be able to try to determine new information, give meaning relations, conditionality and cohesion for available data.

3.1. Summary of basics methods of DM

Basic methods used by the DM algorithms analysis fall into two basic groups (Han, Kamber & Data 2001): DM method using supervised algorithms and unsupervised algorithms.

Supervised algorithms are those in which, to build models, are used the data from in advance known groups in which data belong, and then on the basis of the constructed model predicts group which will belong to unknown data. These gathering methods belong to the classification of data and regression methods.

Non-supervised algorithms are based on the given data form groups of data, without prior knowledge about in which group data might belong. This set of methods belongs to the grouping and association rules.

3.2. Regression

Regression is a method that predicts the value of numeric attributes. It is based on the known values of attributes of the given data with a goal to determine model parameters, and then on the basis of the model parameters we can determine unknown attribute values of new data.

The regression model with their evaluation methods is suitable for areas where the classification codes of prediction are categorical (discrete, unsorted) variables. Regression is used to predict the missing or unavailable numerical values before the tag class. Prediction refers to both types of predictions, numerical and class prediction.

Regression analysis is a statistical method that is used primarily for numerical forecasting, and as such includes the identification of trends over the available data (Goharian & Grossman, 2003).

There are several different types of regression in statistics, but the more general idea is to create a model that maps values of predictors in a way that the possibility of error in forecasting is the lowest. Basic types of regression are: linear regression, multiple regression, logistic regression, nonlinear regression.

3.2.1. Linear regression

Linear regression is the simplest form of regression in which the value of the dependent random variable Y is defined as a linear function of the predictive variables X:

$$Y = \alpha X + \beta,$$

where the regression coefficients α and β are determined by the method of least squares.

Let it be the given set of samples U, where each sample is shown as a two-dimensional vector (x_i, y_i) . The number of samples is u.

Ratios α and β are determined as:

$$\beta = \frac{\sum_{i=1}^u (x_i - \bar{x})(y_i - \bar{y})}{\sum_{i=1}^u (x_i - \bar{x})^2}, \alpha = \bar{y} - \beta \bar{x}$$

Values \bar{x} and \bar{y} are values: $\bar{x} = \frac{\sum_{i=1}^u x_i}{u}$ $\bar{y} = \frac{\sum_{i=1}^u y_i}{u}$

3.2.2. Multiple regression

Multiple regression is an extension of linear regression. In contrast to the linear regression analysis involves more than one predictive variable. The dependent variable Y is defined as a linear function of the multidimensional vector predictors. The general form of multiple regression is:

$$y = \alpha_1 x_1 + \dots \alpha_n x_n + \beta_1$$

Where the parameters α and β are determined by the method of least squares.

3.2.3. Logistic regression

Logistic regression is an extension of linear regression with the restriction that the range of values that can take the dependent variable Y can only be from the interval $[0,1]$.

The logistics function thus modeled as a linear function of the probability of predictive variables, the general form is:

$$y = \frac{1}{1 + e^{-x}}$$

3.2.4. Nonlinear regression

If the variables in the model does not show a linear, polynomial rather than dependence, it is a polynomial dependence that must be reduced to a linear form and the matter further as linear regression.

Given the fact that there is no mathematical model to accurately determine the level of achievement, which should be directly related to educational standards, the author of this paper made a draft of a mathematical model to determine the level of school achievement which in itself consists of two components: the overall success during the education and the result of the final exam. The results obtained in this manner were used in making models of data analysis based on the method of binary logistic regression. The proposal and explained the method for setting the level of achievement of primary schools is given in the third chapter of this work.

4. Suggestions for ways of determining the level achievements of elementary school

Quality framework for evaluating the work of educational institutions in the Republic of Serbia includes 30 standards and 158 indicators (Regulations on standards of quality of work of educational institutions, “RS Official Gazette” No. 7/11) distributed in seven key areas of the school: The school program and annual plan of work, teaching and learning achievements of students, support to students, ethos, work organization and management and resources.

Results obtained by the process of evaluation is primarily used to further the work of the institution, but can also be used as a mean of reporting on the work of educational institutions as well as other target audiences.

4.1. Educational standards and levels of achievement

Educational standards are:

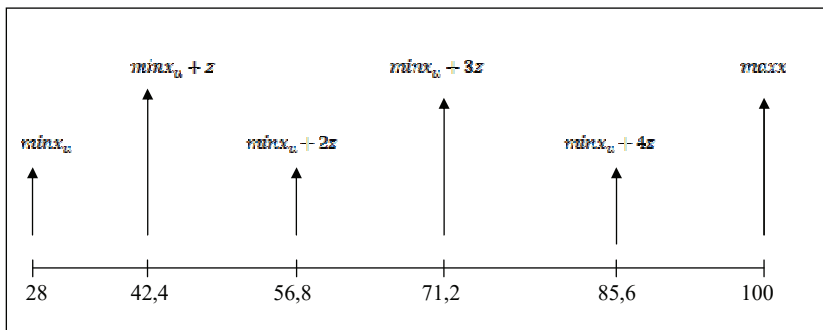
- a series of statements that describe the knowledge and skills that we expect the student to demonstrate a certain level of achievement;
- descriptions of essential knowledge and skills that students should have at the end of a certain level of education.

Levels of achievement are:

- Basic Level - At a basic level requirements are described which represent the basic level of knowledge, abilities and skills, and it is expected that more than 80% of students achieve this level.
- Intermediate level - At the middle level there are described claims that an average student can demonstrate. It is expected that about 50% of the students reach or exceed this level.
- Advanced level - At the advanced level there are described requirements that can show students who are likely to be successful in secondary education. It is expected that about 25% of students achieve this level.

4.2. Determination of achievements levels of elementary schools

The basic idea of how to determine the level of achievement of primary school students is visually displayed as follows:



$$z = \frac{\max(x) - \min(x_u)}{c}$$

Whereas: x – the overall success of primary school
 x_u – success in elementary school (average of all grades)
 x_z – the success of the final exam
 c – scale level of achievement (in the case of a five-point scale is the number 5)
 z – coefficient of achievements

The initial value of the scale is $\min x_u$ which represents the minimum student achievement during primary education, seventh and eighth grade. According to the applicable criteria, the average score of students in the sixth grade is multiplied by the number 4, for the seventh grade is multiplied by the number 5 and the eighth grade

is multiplied by the number 5.

If the student has had an average grade in these grades 2.00 (which allows the release of the final test) then the summation of points is 28, then 28 is the minimum number of points that a student can get based on the achieved results during education.

Suppose a student in the final test had 0 points, then the total score or overall success of primary school $x = x_{\text{п}} + x_{\text{з}}$ equal to 28 points, on the contrary, if the student has had the maximum number of points based on the performance (70 points) and the maximum number of points in the final test (30) then the maximum number of points is 100.

In this way, we determined the initial minimum and maximum value on a scale of achievement levels.

On the basis of the criteria for numerically evaluating the success of students is determined by the scale of levels of student achievement “c” from 1 to 5, which is directly related to levels of achievement standards.

The difference between the maximum number of points and the minimum number of points is:

$$z = \frac{\max(x) - \min(x_{\text{п}})}{c}$$

Divided with defined levels of achievement scale represents a coefficient of achievements, which in this particular case is 14.4.

Taking into account the criteria for numerically evaluating the success of students is determined by the scale of levels of student achievement “c” from 1 to 5 (which is directly related to levels of achievement standards).

If the success of students in the school (which integrates the average of all grades and success in the final examination) is between 28 and 42.4 points, it means that the specified requirements are achieved at the basic level of achievement.

If the success of students in the school is between 42.4 and 56.8 points, it means that the specified requirements are achieved at the basic level of achievement.

If the success of students in the school is between 56.8 and 71.2 points, it means that the specified requirements are achieved at the basic level of achievement and partly (20%) at the middle level of achievement - middle lower level of achievement.

If the success of students in the school is between 71.2 and 85.6 points, it means that the specified requirements are achieved at the basic level of achievement and mostly (80%) of the middle level of achievement - medium higher level of achievement.

If the success of students in the school between 85.6 and 100 points, it means that it achieved an advanced level of achievement.

Based on the determined level of achievement and achieved general success (success during their education and success in the final test) it is possible to assess the condition of the school as follows:

- Elementary School is classified as a school whose work does not achieve the requirements of the basic level of achievement,
- Elementary School is classified as a school whose work achieves the requirements of the basic level of achievement,
- Elementary School is classified as a school whose work achieves the demands on primary and secondary lower level of achievement,
- Elementary School is classified as a school whose work achieves the demands

- on primary and secondary higher level of achievement and
- Elementary School is classified as a school whose work achieves the requirements of the advanced level of achievement.

Estimated state and the classification should identify key problems, causes and consequences of the educational work of the school.

5. Overview of the results of binary logistic regression

For the purposes of research and implementation of DM method of binary logistic regression collected data are sorted into groups, as follows:

The first set of data

The first set of data is obtained from a survey of teaching staff of eight elementary schools from the territory of the City of Belgrade and the municipalities of Cukarica, Obrenovac and Rakovica .

Questionnaire - attitudes Likert scale 1-5, (8 independent and 51 dependent variable),

Total 302 respondents (2 surveys are invalid), processed in the program tool “SPSS” 300 polls.

Second group of data

The second group of data is obtained from a survey of parents whose children attend primary school in the area of the City of Belgrade and the municipalities of Cukarica, Obrenovac and Rakovica

Questionnaire - Likert scale paragraphs 1-5 (7 independent and 32 dependent variables).

Total of 320 respondents (20 surveys were invalid), processed in the program tool “SPSS” 300 polls.

Third set of data

With regard to the defined position of the Ministry of Education, Science and Technological Development of the Republic of Serbia to the final examination determines whether a student during its education mastered the knowledge and skills from Serbian, or mother tongue, mathematics and the natural and social sciences (biology, geography, history, physics and chemistry).

The third group of data consists of information about:

- the total number of the employee of the teaching staff at eight elementary schools from the territory of the City of Belgrade and the municipalities of Cukarica, Obrenovac and Rakovica,
- the total number of pupils in these schools,
- the number of eighth-grade students at the end of the school year 2014/2015, the results achieved (grade point average) during training in mathematics and Serbian and mother tongue
- results of the final exam (students' mastery of knowledge and skills).

After the data collection and transformation of data into the software package “SPSS” for the first and second sets of data it was performed factor analysis as follows:

- Exploratory factor analysis and
- Confirmatory factor analysis.

Exploratory factor analysis of the first group of data acquired through questionnaires of teaching staff of eight elementary schools set aside a total of 13 factors of 8 independent and 51 dependent variable, where the authors of this work, for the comparative analysis of the data of the first and second groups of data, the 7 factors are named: FN1 - method of operation and organization of the teaching classes (MRON), FN2 - social factor (SF), FN3 - quality of work (KR), FN4 - the use of ICT in teaching (ICT), FN5 - syllabus (ON), FN6 – engagement of parents (AR) and FN7 – content of textbooks (SU).

Using the confirmatory factor analysis it was performed data extraction method “PCA - (Principal component analysis), which was verified by grouping variables, and it confirmed that these variables are essentially grouped around the above factors.

Variables with a similar attitude or sense of the respondents for FN1 are V3 - In your opinion, are the classes held successfully, V4 - In your opinion, your colleagues perform successful classes, V8 - The success of the students from your course is at a high level, V10 – Physical activity positively affect the learning ability of the students, V14 - Students are active in classes V15 - Students know how to applicate learned lessons, V19 - Are you satisfied with the working conditions and V40 - Teaching by topics has advantages over the teaching of particular cases.

Results of confirmatory factor analysis, total factor Explanation of variables: FN1 - the methods of teaching (MRON) are shown in Table 1.

Table 1. Display of results confirmatory factor analysis for teaching staff

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.759	46.992	46.992	3.759	46.992	46.992
2	.913	11.409	58.401			
3	.848	10.594	68.995			
4	.771	9.638	78.633			
5	.691	8.640	87.272			
6	.589	7.363	94.635			
7	.239	2.990	97.624			
8	.190	2.376	100.000			

Source: Author

Table 2. Presentation of the component matrix and confirmed grouping of these variables around a single factor.

Table 2. Component Matrix

	Component
	1
V10	.620
V14	.711
V15	.809
V19	.521
V40	.577
V8	.515
V3	.839
V4	.801

Source: Author

Factor analysis was performed using the same method for the second group of data obtained in the survey of parents whose children attend primary school.

The results of confirmatory factor analysis are preserved in programming tool “SPSS” as a variable for building a model of binary logistic regression.

As an important factor for predicting the level of achievement the author of this work is carried out comparative analysis FN6 - involvement of parents (on teachers' opinions) and FR6 - involvement of parents (parents' attitude) using binary logistic regression.

Confirmatory factor analysis confirms that the variables V16, V21, V22 are grouped around a single factor, shown in Table 3.

V16 - Do you have regular contact with teaching staff of the school in which your child is being educated,

V21 - Have you ever proposed to teachers in any way how the educational process should be improve and

V22 – Does your child get enough attention at school by teachers?

Table 3. Results of confirmatory factor analysis

	Component
	1
V21	.928
V22	.982
V16	.976

Source: Author

Results of binary logistic regression on the attitude of parents to FR6 factor - the involvement of parents in relation to the level of achievement are shown in Table 4.

Table 4. Showing results of binary logistic regression on the attitude of parents to factor FR6

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step V16	1.251	.767	2.662	1	.103	3.495	.777	15.716
V21	.148	.285	.271	1	.603	1.160	.664	2.026
V22	-1.387	.771	3.233	1	.072	.250	.055	1.133
Constant	.427	.257	2.760	1	.097	1.532		

Source: Author

Descriptive statistics of variables (V16, V21, V22) is shown in Tables 5, 6 and 7.

Table 5: Descriptive statistics of variables V16

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1.00	195	64.8	64.8	64.8
2.00	9	3.0	3.0	67.8
3.00	33	11.0	11.0	78.7
4.00	24	8.0	8.0	86.7
5.00	40	13.3	13.3	100.0
Total	301	100.0	100.0	

Source: Author

Table 6: Descriptive statistics of variables V21

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1.00	217	72.1	72.1	72.1
2.00	28	9.3	9.3	81.4
3.00	56	18.6	18.6	100.0
Total	301	100.0	100.0	

Source: Author

Table 7: Descriptive statistics of variables V22

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1.00	198	65.8	65.8	65.8
2.00	8	2.7	2.7	68.4
3.00	28	9.3	9.3	77.7
4.00	23	7.6	7.6	85.4
5.00	44	14.6	14.6	100.0
Total	301	100.0	100.0	

Source: Author

Based on these results we can conclude that regular contact of parents with teaching staff at the school have a positive impact on improving the level of student achievement to a significant extent, the proposals on working methods also have a positive impact on the improvement of the level, but to a lesser extent, the lack of attention to students by teachers greatly decreases the level of education (applies to gifted students and students with special needs).

As described above, after the binary logistic regression, it is indicated that the probability of the level of achievement for the analyzed residents is 0.41, and it can be increased by increasing the activity of parents both at the individual and the general-school level.

After exploratory factor analysis, confirmatory analysis confirmed the obtained results, in the table 8.

Table 8: Showing results of confirmatory analysis

	1
V24	.864
V25	.864

Source: Author

Descriptive statistics of variables (V24, V25) is shown in Tables 9 and 10.

Table 9. Descriptive statistics of variables V24

	Frequency	Percent	Valid Percent	Cumulative Percent
1.00	40	13.3	13.3	13.3
2.00	152	50.7	50.7	64.0
Valid 3.00	84	28.0	28.0	92.0
4.00	24	8.0	8.0	100.0
Total	300	100.0	100.0	

Source: Author

Table 10. Descriptive statistics of variables V250

	Frequency	Percent	Valid Percent	Cumulative Percent
1.00	46	15.3	15.3	15.3
2.00	173	57.7	57.7	73.0
Valid 3.00	32	10.7	10.7	83.7
4.00	39	13.0	13.0	96.7
5.00	10	3.3	3.3	100.0
Total	300	100.0	100.0	

Source: Author

Results of binary logistic regression on the attitude of the teaching staff by a factor FN6 - the involvement of parents in relation to the level of achievement are shown in Table 11.

Table 11. Binary logistic regression on the attitude of the teaching staff by a factor FN6

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
V24	-.037	.168	.048	1	.826	.964	.693	1.340
Step 1 V25	.097	.137	.505	1	.477	1.102	.843	1.442
Constant	.211	.379	.310	1	.578	1.235		

Source: Author

Based on these results we conclude that the active participation of parents in the process of education have positive impact on improving the level of student achievement to a considerable extent, while only participation at family level without the active participation in the sphere of educational process will not affect the improvement of the level of student achievement.

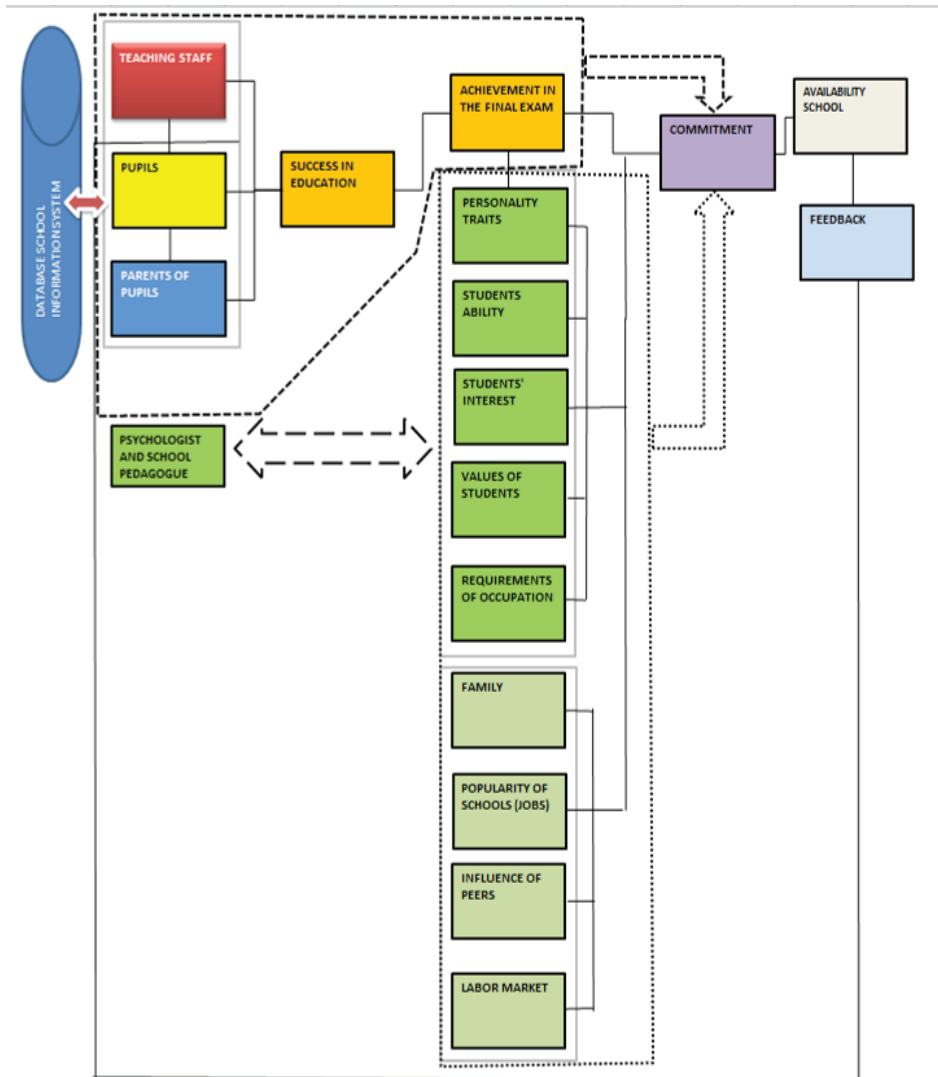
As described above, and after the binary logistic regression, it is indicated that the probability of a higher level of achievement for the analyzed residents is 0. 59 and it can be increased by increasing the activity of parents both at the individual and at the school level.

The results indicate that the probability of achieving a better level of achievement is related to the cooperation of parents in the educational - training process for residents is 0. 41 (paragraph parents) and teacher 0. 59. The results suggest that parents are less likely to believe that cooperation with the teaching staff of the school can contribute to a better level of student achievement.

6. Proposed structure of the system support schools

This section provides a description of the proposed system for DM data for primary schools. The proposed solution is intended to collect data from a plurality of different sources.

Image 1. shows a proposal for a system with separate components as follows: data sources, data processing and users.



Source: Author

Data sources represent a set of available internal data and open data sources as unique education information system which can be accessed via the corresponding communication interfaces, which can be represented as a Web service.

Data processing is performed by the module that implements the techniques of integration of data from available sources, and data mining techniques of the collected data. Integrated Database is located in this model. Part of the data processing consists of modules for data integration, integrated databases and modules for data mining.

Data mining module implements the appropriate logic governing of the process of data mining through the application of the method of binary logistic regression of integrated data.

The results of performed analyses should sent to all users in order to undertake measures to improve the educational process and to increase the level of achievement of primary school pupils.

7. Conclusion

Primary education plays an important role in economic and social development and all changes and reform processes in this field should lead to improving the economic and social situation of a country. Past reform activities in the primary education system of the Republic of Serbia point the importance of the reform process management as a key factor to improve the quality of education and upbringing process.

Previous theories point out these factor as important ones for the professional commitment of distinguished students: parents, teachers, social circumstances, the current interests of “small graduates”, the balance between personal capabilities and chosen profession, friends, etc. (Hossler, Braxton & Coopersmith, 1989).

Finding patterns, trends and anomalies in data groups, and their summation with the proposed model is one of the biggest challenges of the information age - converting data into information and information into knowledge.

The aim of this study was to develop a genuine, universal methodology of forecasting and decision-making using binary logistic regression, which was confirmed in case of management in order to achieve a satisfactory level of student achievement. Basic existing problems the education policy is facing are nonexistent connection between economy and research institutions and very small funds and investments into education and training, both on basic level, as well as for education and training of adults (Knezevic & Veselinovic, 2015). Detecting variables affecting the education, needs of labor market and providing measures that would follow individual before, during and after the education has to be part of educational policy (Južnik Rotar, 2014).

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INCREASING COMPETITIVENESS OF ENTERPRISES BY INVESTING IN INNOVATIONS AND NEW TECHNOLOGIES

Abstract

In the theory of resource based theory, the competitive advantage can be achieved by lower costs, as well as by a higher efficiency of the company and product differentiation. The lack of innovations in SMEs is connected with the lack of a formed vision, weak management structure, weak growth strategy, lack of resources and increasing exposure to global factors and competition. This paper, in this respect, supports the potential positive impact of the experience and knowledge in the field of information technologies on the IT competences of employees and management. The paper presents the results of empirical research on investing in innovations and new technologies. The main estimate of the paper is that investing in innovations and new technologies is in some forms more significant, while it is still insufficient in relation to the pace of introduction of new technologies and the needs of the global market.

Keywords: investment, innovations, new technologies, competitiveness

JEL classification: O31,O32

ПОВЕЋАЊЕ КОНКУРЕНТНОСТИ ПРЕДУЗЕЋА ИНВЕСТИРАЊЕМ У ИНОВАЦИЈЕ И НОВЕ ТЕХНОЛОГИЈЕ

Апстракт

Конкурентска предност у теорији заснованој на ресурсима може да се постигне нижим трошковима као и већом ефикасношћу фирме, диференцијацијом производа. Недостатак иновација у МСП је повезан са неформулисаном визијом, слабом менаџмент структуром, недостатком ресурса и све већом изложеношћу глобалним факторима и конкуренцијом.

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У овом раду су дати резултати емпиријског истраживања о инвестирању у иновације и нове технологије, које је вршено у Моравичком округу на узорку од 137 малих и средњих предузећа. Основни закључак рада јесте да је инвестирање у иновације и нове технологије у неким облицима значајније, док је ипак још недовољно у односу на темпо увођења нових технологија и потреба глобалног тржишта.

Кључне речи: инвестирање, иновације, нове технологије, конкурентност

Introduction

The time we live and do business in is marked by the speed of information transfer, the globalization changes, fight for new customers, productivity increase in order to achieve the competitive advantage. Also, modern business is conditioned by the scientific and technological revolution, especially by information and communication technologies, globalization of economy and other factors, so in this regard the transformation of the companies means a change that encompasses all aspects of the organization, including the change of organizational structure (Medenica, Momirović, & Mikša, 2012).

All of these qualities and features are characteristics that define the modern business (Vulović, Papić & Damjanović, 2010). The emphasized dynamics and present levels of competitiveness of modern markets are forcing the enterprises to be flexible, innovative and responsive to consumer demands. They achieve this by applying advanced business solutions in regulating and functioning of their internal business relations and in establishing business relationships, as well as when making connections with external partners, customers or suppliers (Damjanović, Jovanovic, Šljivić, Jevtic & Grozdanić, 2011). ICTs play a key role in creating the enterprise's ability to be agile, connected and innovative and to quickly exchange all information internally and externally. Information system within small and medium-sized enterprises (SMEs) has become one of the basic mechanisms of control of business operations by each individual manager. Starting from the software for accounting, through the electronic monitoring of raw materials and finished products, to the automation of production itself $\frac{3}{4}$ of ICTs have become an integral part of every enterprise.

The main objective of ICTs is to provide enterprises with the sustainable competitive advantage. Due to the fast-growing benefits of the Internet and other communication technologies, companies have become more skilled in gathering information about individual customers and business partners (suppliers, distributors, retailers) (Kotler, Wong, Saunders & Armstrong, 2007).

A very important element of success in modern enterprises is the high-quality harmonization of the opportunities that ICTs offer with the aim of improving business activities, functions and processes. IT has become a major factor in the performance and improvement of business activities and decision-making process in the enterprise. It affects the information management and represents a catalyst of fundamental changes in the structure, business operations and the very process of management (Đuričin, Janošević & Kaličanin, 2009). Therefore, it is inevitable to include ICTs in the enterprise development strategy, so that their strategic goals are fully consistent with each other.

A ticket to the world of ICTs is becoming cheaper, the costs are falling dramatically, and the equipment is getting cheaper. ICTs today bring a number of benefits, cost savings, improvements and enhancements, so the strategic perspective of companies is also slowly changing. ICTs take on a new role in the development of strategies; it is no longer economically feasible to look at ICTs as a tool that supports only operational processes (Veljović, Vulović & Damnjanović, 2009).

The subject of the research presented in this paper are the issues of increasing the enterprise competitiveness by means of investing in innovations and new technology. There are many reasons for choosing this topic as the subject of the research, as well as its social relevance. Many modern organizations have realized that regardless of the importance of technologies, the key driver for global trade division is the model of business innovation. The most dramatic developments in the modern era take place in the information technologies (Samuelson & Nordhaus, 2009).

Innovativeness is positioned at the centre of the EU development strategy (Europe 2020). In the field of innovativeness, Serbia significantly lags behind the average and the majority of the EU members. The biggest innovation backlog is created in the field of intellectual property. The application of modern technologies in the function of competitive business operating of the modern enterprise, shows that according to the equipment and the use of computers in business, Serbian SMEs are slightly behind the average of EU-27 and highly developed countries, but when it comes to the use of the Internet, they are significantly lagging behind most EU member states. The internet is most often used in order to provide banking and financial services, while e-business (buying and selling) is still under-represented, as well as electronic communications in procurement, especially with foreign countries, communicating with customers, interaction of relations with potential clients and in the area of improving of a portfolio of services and products in relation to the market's perception and creation of innovative offerings.

The lack of innovation in the use of new technologies and development of new products, high labour costs, lack of information on the needs of the market and low productivity have caused a significant deficit in the foreign trade of Serbia. The pace of changes in the business world will not slow down in the foreseeable future. The competition in most industries over the next few decades is likely to take place at a faster pace. The enterprises, wherever they are located, will be faced with even more dangerous risks and great opportunities, arising from the globalization of the economy, with related technological and social trends (Bešić, Sajfert & Damnjanović, 2009). Consequently, improvement of the productivity and competitiveness of small and medium-sized enterprises, must become the most important direction for further development, together with modern education for new technological competences, innovativeness and technological development, to make the growth potentials come to the fore even more and in order to achieve maximum effects. The enterprise must have a climate in which the innovation is the best means of operational improvement and it has to be directed not only to the benefit of the enterprise, but also to the benefit of each individual, both workers and managers (Bešić, Nikolić & Damnjanović, 2010). The level of experience of employees, but also their level of work satisfaction in the company, affect the quality of services provided, and thus the quality of the relationship with customers (Ratković, Grubić, Tasić, Damnjanović & Matić, 2011).

This research in this paper is, in this regard, focused on the scientific verification of the claims: that the investments in innovations and new information technologies have a positive impact on the internal performance of an enterprise, the relationships with customers and the performance of electronic communication in dealing with the environment.

The overall results of this research should indicate the validity of the research of the influence of modern technologies on the competitiveness of small and medium-sized enterprises in Serbia, on the level of innovative and technological inputs and their future impact on: the internal improvement of all functions of the enterprise, establishment of better communication and management relations with customers through modern information technologies, as well as the encouragement of enterprises to invest in the product innovation, export, and process of electronic communication with the wider community and institutions, as well as the global market. The desk research of theoretical basis, references, as well as of empirical results affect the possible restrictions, as well as the potential innovative research stemming from these results.

The subject, background and objectives of the research

The research subject presented in this paper is the impact of investments in innovations and new technologies on the competitiveness of SMEs. The response to rapid changes in the environment in which SMEs carry out their business and wider social mission, which increasingly have an intermittent character, is found in the improvement of the strategic competitive performance through the use of modern technologies.

The rapid development of new technologies affects the creation of new business forms, which are becoming the foundation of infrastructure of modern, contemporary business. They impose new rules and challenges to business entities that they have to adapt to in order to survive in the market. The modern-oriented management should recognize all the advantages of modern technologies that affect the improvement and creation of new values, which contributes to the strategic advantage of SMEs to overcome the competition.

The emphasized dynamics and present levels of competitiveness of modern markets are forcing SMEs to be flexible, innovative and responsive to consumer demands. Modern technology should play a key role in creating SME strategic advantages, to make them agile, well-connected, with the ability to quickly exchange all information internally and externally. An important part of the SME success is the proper alignment of the opportunities provided by modern technology, with the aim of improving business activities, functions and processes.

Based on the previously mentioned, the paper objective has been defined as follows: The impact of investments and the use of modern technologies as an innovative input on the improvement of the overall performance of a company, knowledge and skills of employees and management, the establishment of new services and communication with consumers, benefits for employees and shareholders, suppliers and external communication with the community and global world, in the form of increased competitive and comparative advantages.

The SMEs which make up the biggest share of the Serbian economy, which significantly contribute to the development of economy, export and prosperity, but still

lack the understanding and are not able to rapidly introduce new technologies in their business, have been selected as the target group.

The research starts from the premise that innovative business models of SMEs based on the introduction of new technologies and communications, can significantly improve internal knowledge and abilities, strengthen the technical and technological capacity, achieve better access to new ideas and products and materials for modern production processes, research results and the commercialization of new values added, produced by the small and medium sized enterprise. This starting point ensures a sustainable strategic competitiveness and advantage of SMEs in the long term, which is the objective of introducing new technologies, knowledge and methods in business practices of Serbian SMEs.

The Basic Hypothesis of the Research

The paper starts with a hypothesis, whose testing, by means of theoretical, desk and empirical research, enables the verification of the role and impact of new technologies, especially when it comes to information technologies, on achievement of the competitive advantage of small and medium-sized enterprises. The hypothesis and research are related to the technological input and output of the competitive capacity of SMEs.

The hypothesis: SME investments in innovations and new information technologies have had in the research period a positive impact on the relations with customers.

Theoretical and Methodological Framework of the Research

For the purpose of testing the hypothesis and results of the empirical research, the statistical analysis of the basic control variables is used in the paper: the industry sector, enterprise size, age of the enterprise, education of the managers/owners, turnover of the company, the structure of the enterprise classified by export-import activities, funds invested in innovations and new technologies, level, types and forms of information technologies used in SMEs in the period given for collection of the data, on the territory of the country and in a special segment - Moravički region.

In terms of the theoretical basis of the statistical methods used in the research, the methods are divided into three basic groups:

The first of these represents the basic method of descriptive statistical analysis of the observed data. In this respect, we will first determine the so-called dominant characteristics of the observed group, i.e. calculate the basic parameters, the mean value and standard deviation for the hypothesis formed (variables) within the sample.

In the next stage of statistical analysis of the observed data, we perform statistical testing of dependence of variables, which we receive based on the individual responses of the surveyed SMEs, on the one hand, in relation to the size of the company, on the other hand. In this case we use the well-known Pearson's test of independent modalities of the two features of the sample set. Numerous procedures of statistical testing based on the so-called Pearson statistics represent the oldest methods of statistical inference.

However, as we shall see in our research, this group of statistical tests is today widely used in statistical practice and different areas of human activities.

Finally, for a formal test of the hypothesis of our research, we use a model called binomial logistic regression. Regression analysis reveals a form of (functional) dependency between two (or more) variables. The main problem in the quantitative description of such dependency is the selection of the appropriate model, as well as the variables that are essential for their description and connecting in the form of mathematical relation.

Research methodology

We start from the hypothesis whose testing, by means of desk and empirical research, enables verification of the positive impact on the relations with customers by investing in innovations and new technologies.

The hypothesis explores the potential positive impact of innovations and investments in information technologies on the enterprise performance development. We form the hypothesis, together with the corresponding survey questions, as follows:

1. Are potential and actual customers included in the design and the improvement of services?
2. Are potential and actual customers and other interested parties included in the development of quality standards related to services and information?
3. Are the procedures developed and demonstrated in a simple and understandable way, customized for ordinary customers?
4. Are the responsible management system and the procedures for responses and appeals submitted electronically, being developed?
5. Are proactive and regular relations with the customers being maintained?
6. Is the opinion of important customers being underscored in resolving important company issues?
7. Are ideas, suggestions and complaints of customers and suppliers being encouraged and accepted, together with the use of appropriate mechanisms?
8. Does the enterprise own user-oriented web sites, customized to each customer individually?

To test the above mentioned hypothesis, the empirical research and statistical analysis of the degree of investing of funds in innovations and new technologies were used, as well as the level, types and forms of information technologies used in SMEs in the period given for data collection, on the territory of the country and in a special segment - Moravički region.

For this purpose, a sample of 137 SMEs was formed, classified according to the enterprise size. More specifically, within our sample there are 103 small enterprises (up to 50 employees) and 34 medium-sized enterprises (50 to 250 employees).

Whose owners (managers) were interviewed by using the aforementioned survey form. In doing so, the survey questions were made to determine the validity of the hypothesis. All respondents' answers are coded with 0 (no, a negative answer) or 1 (yes, a positive affirmative, answer). In this way, the answers obtained from the surveyed SMEs can be seen

as dichotomous random variables, with (only) two possible values: 0 and/or 1. The total ratio of these values gives an accurate insight into the extent and significance of investments in innovations and the development of information technologies for each individual, particular question of the survey, i.e. for each individual surveyed enterprise. In addition, the statistical verification of validity of the hypothesis was also determined, in relation to the size of the enterprises, and thus a more comprehensive picture is obtained of whether and how the enterprise size affects the degree of innovations in information technologies.

Research results

For the defined hypothesis that assumes the positive impact of innovative activities of SMEs, we now provide appropriate conclusions. First, we introduce, in a formal way, the appropriate dichotomous variables that show (positive or negative) responses of the surveyed owners and/or managers of SMEs. Depending on the response given to each individual question of the survey, these variables will be changeable sizes that assume exactly two different values:

- yes /coded with 1/
- no /coded with 0/

The data obtained in such a way, were quantified, by means of a specially introduced dichotomous (0/1) variables that represent so-called *Indicators* of the observed characteristics within the sample. This, in other words, means that the very statistical analysis of the observed data, above all, will be based on the determination of the proportion (share) of affirmative responses in relation to the total number (sample scope) of 137 surveyed SMEs. In order to test the validity of the hypothesis, the results obtained can then be investigated in more detail, by means of different methods of statistical processing and quantitative analysis. These will now be discussed, while, with the aim of achieving transparency in the presentation of the results obtained and the methodology of statistical research, we analyse the stated hypothesis.

Table 1. Interview questions

	1	2	3	4	5	Mean
1. Are potential and actual customers included in the design and the improvement of services?	4,50%	9%	46%	18%	22,50%	3,45
2. Are potential and actual customers and other interested parties included in the development of quality standards related to services and information?	4,50%	18%	32%	18,50%	27%	3,45
3. Are the procedures developed and demonstrated in a simple and understandable way, customized for ordinary customers?	0%	9%	9%	32%	50%	4,22
4. Are the responsible management system and the procedures for responses and appeals submitted electronically, being developed?	23%	4,50%	23%	18%	31,50%	3,14

5. Are proactive and regular relations with the customers being maintained?	0%	9%	9%	36%	46%	4,18
6. Is the opinion of important customers being underscored in resolving important company issues?	4.5%	0%	9%	46%	41.5%	4,18
7. Are ideas, suggestions and complaints of customers and suppliers being encouraged and accepted, together with the use of appropriate mechanisms?	4.5%	4.5%	23%	41%	27%	3,82
8. Does the company own user-oriented web sites, customized to each customer individually?	32%	9%	14%	14%	31%	3,04

Figure 1. Are potential and actual customers included in the design and the improvement of services?

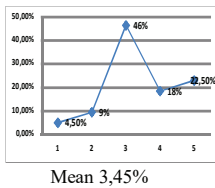


Figure 2. Are potential and actual customers and other interested parties included in the development of quality standards related to services and information?

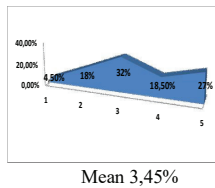


Figure 3. Are the procedures developed and demonstrated in a simple and understandable way, customized for ordinary customers?

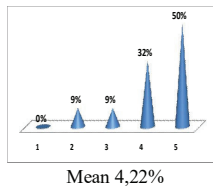


Figure 4. Are the responsible management system and the procedures for responses and appeals submitted electronically, being developed?

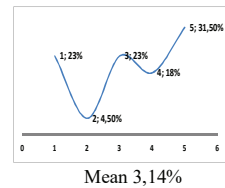


Figure 5. Are proactive and regular relations with the customers being maintained?

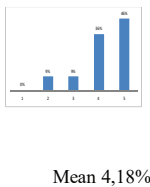


Figure 6. Is the opinion of important customers being underscored in resolving important company issues?

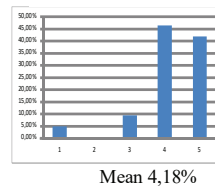


Figure 7. Are ideas, suggestions and complaints of customers and suppliers being encouraged and accepted, together with the use of appropriate

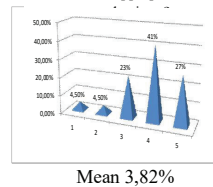
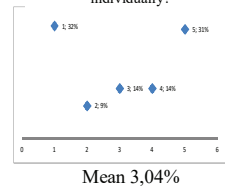


Figure 8. Does the company own user-oriented web sites, customized to each customer individually?



Further on, we examine the validity of the hypothesis which assumes that the investments in innovations and new information technologies of SMEs in the previously researched time period, had a positive impact on the relations with customers. A part of the survey questionnaire related to this hypothesis, has eight survey questions, i.e. the appropriate dichotomous variables whose values that were observed, along with other descriptive-statistical indicators, are shown in table 2.

The highest observed value has the X_5 variable, which shows the positive attitude of surveyed SMEs on maintaining the proactive and regular relations with customers. Naturally, the vast majority of respondents, 83.58% of them, replied affirmatively to this survey question. Similarly, a high percentage of almost 80% positive responses is also expressed by the value of the X_7 variable, i.e. the positive attitudes on the encouragement

and acceptance of ideas, suggestions and complaints of customers and suppliers. Then follows the X_1 variable, where more than three quarters of the surveyed sample of SMEs answered affirmatively to a question whether they include potential and actual customers in the design and improvement of their services. We should point out the value of the X_3 variable, based on which we can conclude that more than 70% of the subjects is developing the procedures that are in a simple and user-friendly manner customized for ordinary customers. The X_2 variable has the value of more 50%, i.e., almost two thirds of SMEs surveyed claimed that potential and actual customers are involved in the development of quality standards of services and information in their enterprises.

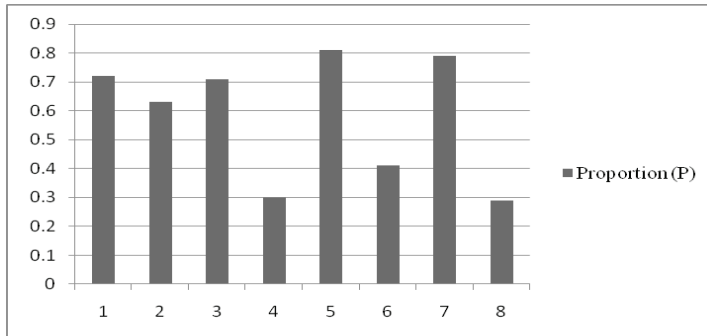
Table 2. The number of observations, mean value and standard deviation of key variables

<i>Variables</i>	<i>Description (survey questions)</i>	<i>SME Number</i>	<i>Proportion (p)</i>	<i>Standard deviation</i>
X_1	Potential and actual customers are involved in the design and improvement of conditions	102	0.7612	0.4264
X_2	Potential and actual customers are involved in the development of the service quality standards	87	0.6493	0.4772
X_3	Procedures customized for ordinary customers are being developed and demonstrated	97	0.7239	0.4471
X_4	A responsible management system and procedures for responses and appeals are being developed	40	0.2985	0.4576
X_5	Proactive and regular relations with customers are being maintained	112	0.8358	0.3704
X_6	The opinion of important customers in resolving important issues is being encouraged	57	0.4254	0.4944
X_7	The ideas, suggestions and complaints of customers and suppliers are being encouraged and accepted	106	0.7910	0.4066
X_8	The company has user-oriented web sites	38	0.2836	0.4507

Source: The projection of the authors

Contrary to the previous variables, convincingly, the lowest observed value has the X_8 variable, i.e. a surprisingly small number of SMEs surveyed, only 28.36% of them, has stated to possess user-oriented web-sites that are customized for each customer individually. At the same time, not much larger number of them, only less than 30% of respondents claims to be developing a responsible management system i.e. the procedures intended for responses and appeals submitted electronically (the X_4 variable). Finally, a number slightly higher than 42.54% of the surveyed SMEs in the observed sample, responded affirmatively to the question whether at some of the aspects of their business, they encourage underscoring of the opinion of important customers in resolving enterprise's important issues (the X_6 variable). A graphical representation of the values of the share of positive responses of the surveyed SMEs, is given in Figure 9.

Figure 9: The diagram of the arrangement of proportions of positive responses of the surveyed SMEs



Source: The projection of the authors

The results of X^2 testing of the above described variables, observed as the hypothesis modalities, in relation to the size of SMEs, are given in Table 3. The realized value $X^2 = 28.24$ is slightly smaller than in the majority of the previously obtained values. This is, however, a consequence of the relatively small number of the degrees of freedom ($n = 7$), because this value also of X^2 statistics exceeds, at both levels of significance $p < 0.01$ and $p < 0.05$, the critical values of X^2 test which in this case are 14:07 and 18:48. Therefore, here too, with less than 1% of risk, we claim that there is a statistically significant relationship of the characteristic expressed in dichotomous variables (X_1, X_2, \dots, X_8) to the size of SMEs.

Table 3. The realized frequency values by size of SMEs and X^2 statistics of the independence test

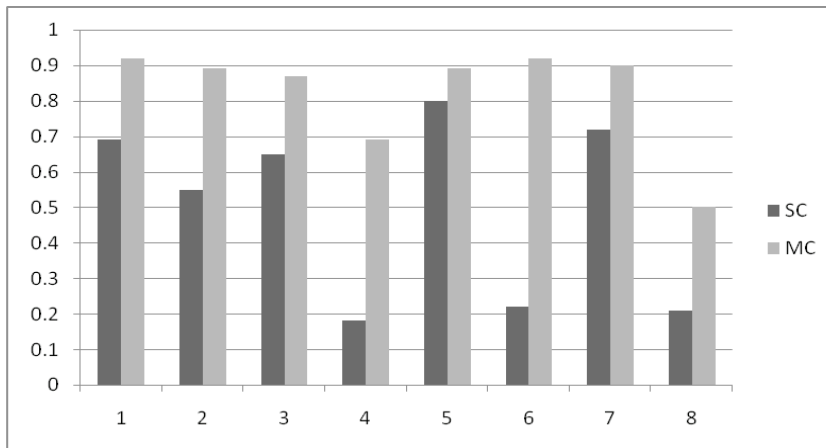
Variables	Small enterprises		Medium-sized enterprises		Σ
	f_i	f_i'	f_i	f_i'	
X_1	70	66.24	32	35.76	102
X_2	57	56.50	30	30.50	87
X_3	68	63.00	29	34.00	97
X_4	17	25.98	23	14.02	40
X_5	82	72.74	30	39.26	112
X_6	25	37.02	32	19.98	57
X_7	75	68.84	31	37.16	106
X_8	21	24.68	17	13.32	38
Σ	415	415	224	224	$X^2=28.24^{**}$

Source: The projection of the authors

In other words, a positive impact on relations with customers, realized by investments and innovations in new information technologies, is directly dependant on the size of SMEs. Clearly, here again, we see the presence of the “dominance” of the medium-sized enterprises that have to a greater extent expressed positive attitudes

in relation to the majority of survey questions of the hypothesis. This disproportion of affirmative responses is especially high among the X_4 , X_6 and X_8 variables that we have previously analysed. An insight into the formulation of survey questions that correspond to these three variables, gives a clear picture of the fact that a responsible management system, communication with customers and making of user-friendly web-sites, falls exclusively within the domain of larger, medium-sized enterprises.

Figure 10. The comparative diagram of the arrangement of proportions of positive SME responses



Legenda: SC-small companies, MC-medium companies

Source: The projection of the authors

Regression Analysis

Finally, we should also consider here the binomial logistic regression analysis of the values of dichotomous variables of the hypothesis, observed based on the appropriate part of the sample of the surveyed SMEs. We obtain the values of the regression model parameters by using the following program procedure:

```

HIPOTEZA2B<-read.table("D:/My Documents/A. Damjanovic/H2B.txt")
HIPOT2B<-t(HIPOTEZA2B)
H2B<-data.frame(HIPOT2B[,1],HIPOT2B[,2],HIPOT2B[,3],HIPOT2B[,4],HIP
OT2B[,5],
HIPOT2B[,6],HIPOT2B[,7],HIPOT2B[,8])
REZ<-HIPOT2B[,9]
y12<-lm(REZ~H2B[,1]+H2B[,2]+H2B[,3]+H2B[,4]+H2B[,5]+
H2B[,6]+H2B[,7]+H2B[,8])
summary(y12)
y22<-glm(REZ~H2B[,1]+H2B[,2]+H2B[,3]+H2B[,4]+H2B[,5]+
H2B[,6]+H2B[,7]+H2B[,8])
summary(y22)

```

The values obtained in such a way, together with the values of the corresponding mean squared errors, OR-coefficients and their logit values are presented in columns (vertical indents) in table 4. Already mentioned variables (X_4 , X_6 , X_8) have the negative values of OR-coefficients, while on the other hand, the value of other variables, is significantly higher than zero. The logistic regression coefficients are positive, but the quality of the resulting model is slightly weaker compared to the previous models.

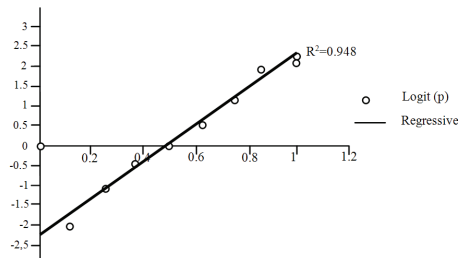
Table 4. The realization of OR values, logit function and the estimated values of the logistic regression coefficients

Variables		Odds ratio	Logarithm of the odds ratio	Regression coefficients	Standard error of the evaluation
<i>Regression constant</i>				-2.356	8.618(-2)
X_1		3.1875	1.1592	0.5363	5.639(-2)
X_2		1.8511	0.6158	0.6652	5.067(-2)
X_3		2.6216	0.9638	0.5084	5.606(-2)
X_4		0.4255	-0.8544	0.6294	5.831(-2)
X_5		5.0909	1.6275	0.6013	6.258(-2)
X_6		0.7403	-0.3088	0.7043	5.376(-2)
X_7		3.7857	1.3312	0.6413	5.939(-2)
X_8		0.3958	-0.9268	0.5979	5.539(-2)
<i>Total evaluation error (Q):</i>	0.2787				
<i>Determination coefficient (R²):</i>	0.9372				
<i>AIC:</i>	49.42				

Source: The projection of the authors

This fact is indicated by, above all, a greater value of the total mean squared error of the evaluation of the model ($Q = 0.2787$), which is several times higher than in the previous logistic models. Also, the coefficient of determination ($R^2 = 93.72\%$) is slightly lower. Finally, the coefficient $AIC = 49.42$ is for the first time greater than zero, so it seems that the binomial logistic regression model here may not represent the most appropriate choice of the theoretical model. The comparison with the linear regression model, shown in Figure 11, contributes to this conclusion. The resulting linear model here has a slightly higher coefficient of determination ($R^2 = 94.80\%$), i.e. it is better adapted to the dynamic structure of the observed responses of the hypothesis in relation to the logistic regression model.

Figure 11. The linear regression of SMEs investments in innovations and new information technologies



Source: The projection of the authors

Syntesis of obtained results

At the very end of our research, we will try to integrate all the important results obtained so far and statistical indicators which are, mainly, related to the validity of the hypothesis. Let us recall that in the previous section, we conducted a detailed statistical analysis of the hypothesis, starting from the basic descriptive statistical methods (determination of the total number of positive responses, their proportions and standard deviations), then checking of the dependencies in relation to the size of SMEs, and finally to the construction the adequate regression models that describe in most detail the dynamic structure of the positive responses of the surveyed SMEs, interpreted in the form of adequate dichotomous variables. In particular, we would like to underscore that the entire statistical analysis performed, was based on the application of the relevant theoretical facts and modern directions in theoretical and statistical analysis of the related problems. Therefore, we find that the results obtained and conclusions made based on them, are completely authoritative, and they properly describe the empirically obtained results.

However, we consider it necessary to point out as a particularly important fact that all observed values of the proportions of positive responses *exceed one half of the observed sample*, i.e. most of the respondents mostly responded positively to the questions raised by the survey. This fact is encouraging because it indicates that most SMEs have a generally positive attitude towards innovations and investments in new information technologies. As a further illustration of the obtained observed values, we showed in the Figure 10., their comparative diagram, where, among other things, the “domination” of positive responses of the surveyed SMEs, can be seen, within the dichotomous variables expressing the hypothesis.

Table 5. The summary view of average values of basic statistical indicators

Average values	Projections
The number of SMEs	79.88
The proportion (p)	0.5961
Standard deviation	0.4413
χ^2 - statistics	28.24**
The degrees of freedom (n)	7
The significance level (α)	1.99(-4)
The coefficient of contingency (C)	41.72%
The odds ratio (OR)	2.2623
Logit (p)	0.4509
The regression coefficients	0.6105
Standard error	5.66(-2)
The relative error of evaluation	9.27%
The total relative error	12.32%
The coefficient of determination (logistic model)	93.72%
The coefficient of determination (linear model)	94.8%
AIC:	49.42

Source: The projection of the authors

We should consider now the second segment of the statistical research that checks the dependence of the hypothesis observed in relation to the size of the surveyed SMEs. We performed this check in a strictly formal manner by means of a well-known X^2 test of independence of two features (characteristics of the basic set, i.e. its cause). All realized values of X^2 statistics that we got in this manner are also shown in the above table 5., along with the corresponding number of degrees of freedom, and particularly interesting statistical indicators – *the coefficient of contingency* of two (dependent) features. This coefficient is defined as the measure of dependence on the observed characteristics, i.e. in a quantitative manner (in percentage), it expresses the degree of dependence that exists between them.

We should finally point out, as perhaps the most important of the facts which we have proved here, that we have in a formal manner demonstrated the positivity of all obtained estimated values of the regression coefficients. In this way, we expressed the positive impact of the established features and characteristics of a sample of SMEs on the degree and level of investing in new information technologies, that verifies the validity of the above-formed hypothesis.

Conclusion

At the very end of our research, we will try to integrate all the important results obtained so far and statistical indicators which are mainly related to the validity of the hypothesis. Let us recall that we have conducted a detailed statistical analysis of this hypothesis, starting from the basic descriptive statistical methods (determination of the total number of positive responses, their proportions and standard deviations),

then conducted checks of dependence in relation to the size of SMEs and ultimately, to the construction of the corresponding regression model that in most detail describes the dynamic structure of the positive responses of the surveyed SMEs, interpreted in the form of appropriate dichotomous variables. Particularly, we would like to emphasize that the overall conducted statistical analysis was based on the application of relevant theoretical facts and contemporary trends in theoretical and statistical analysis of related problems. Therefore, we find that the results and conclusions based on them are completely authoritative, and that they properly describe the empirically obtained results.

The research has shown that the ICTs are being developed and applied very progressively, as they represent the basis for the establishment of business competitiveness of SMEs. The research confirmed that the application of ICTs to SMEs significantly and, clearly, in a positive way, impact their core business parameters (reduction of operating costs, differentiation of products/services, higher quality of products/services to the needs of customers, quick adapting to market conditions, expansion of the potential market, etc.), thus creating a greater value for consumers (acceptable prices, flexibility, differentiation, reducing of the delivery time, etc.), which is a precondition for winning their loyalty on the basis of increased competitiveness. From this research, the competitiveness and business performance of SMEs, without the application of information technologies, in the conditions of modern business, is unthinkable. Information and communication technologies effectively contribute to the competitiveness of SMEs but this trend has to be successfully monitored, raised and nurtured.

Still, we consider it necessary to point out as a particularly important fact that all observed values of the proportions of positive responses exceed one half of the research sample, i.e. the majority of respondents generally answered affirmatively to the questions raised by the survey. This fact is encouraging because it indicates that most SMEs have a generally positive attitude towards innovations and investments in new information technologies.

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THE NECESSITY TO ADJUST TRADITIONAL INTEGRATED MARKETING COMMUNICATIONS TOOLS AND TECHNIQUES TO NEW GLOBAL TRENDS

Abstract

The concept of integrated marketing communications is an essential part of the overall strategic planning of business entities and its significance for proper positioning, gaining and maintaining competitive advantage, makes it one of the most important concepts. These are a set of strategic decisions that can not be made separately but must take into account the interdependence of key elements of the marketing mix and the criteria for the selection of tools and techniques of mass and direct communication in order to achieve a synergy effect and result in a score greater than the sum of individual factors. Although necessary, the traditional concept of integrated marketing communications materialized in the tools and techniques of mass and direct communication due to changed business conditions slowly loses out on both efficiency and effectiveness. The emergence of new concepts is the result of the functioning of global trends and aspirations of economic entities to achieve maintain or improve their competitive position and their position in the minds of consumers while dealing with changing business conditions.

Key words: *marketing, IMC, market, global trends*

JEL classification: *M20, M31, M37*

НЕОПХОДНОСТ ПРИЛАГОЂАВАЊА ТРАДИЦИОНАЛНИХ СРЕДСТВА И ТЕХНИКА ИНТЕГРИСАНИХ МАРКЕТИНШКИХ КОМУНИКАЦИЈА НОВИМ ГЛОБАЛНИМ ТРЕНДОВИМА

Апстракт

Концепт интегрисаних маркетиншких комуникација представља неизоставањ део укупног стратегијског планирања привредних субјеката и по

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свом значају за правилно позиционирање, стицање и одржавање конкурентске предности, један је од најважнијих. Ради се о сету стратегијских одлука које се не могу доносити сепаратно већ се мора уважити однос међузависности кључних елемената маркетинг микса и критеријума за одабир средстава и техника масовног и директног комуницирања како би се постигао синергетски ефекат и добио резултат већи од простог збира појединачних чинилаца. И ако неопходан, традиционални концепт интегрисаних маркетиншких комуникација материјализован у средствима и техникама масовног и директног комуницирања, услед промењених услова пословања полако губи како на ефикасности тако и ефективности. Појава нових концепата резултат је деловања глобалних трендова и тежње привредних субјеката да и у промењеним условима пословања постигну, очувају или унапреде своју конкурентску позицију и позицију у свести потрошача.

***Кључне речи:** маркетинг, ИМК, тржиште, глобални трендови*

Introduction

The paper aims to point out the necessity of the implementation of new marketing concepts for more efficient and effective communication of the company with its targeted market segment and / or the market as a whole. The basic hypothesis is contained in the assertion that traditional tools and techniques of mass and direct communication are losing their efficiency. Why traditional means IMC lose its effectiveness can be determined by analyzing and learning about global trends as well as their nature and character. In addition, previous mentioned may explain how the innovative concepts appeared and why they can perform better results. By presenting the concept of IMC, in the same time we explained the connection between the concepts of promotion and marketing mix in order to emphasize the interdependence of individual marketing strategies. The factors that must be taken into account in the selection of individual tools and techniques of mass and direct communication are also pointed out. After the presentation of the concept, in general, and the tools and techniques of mass and direct communication, one by one, we have listed examples of their deficiencies that occur in the application. The analysis of global trends describes the changes in the business environment which has affected the reduction of the efficiency and effectiveness of traditional means of IMC. Mentioned above, has led to new market-oriented responses of companies that have developed new approaches that are grown in the massiveness of application and become modern concepts of business. Green marketing, with permission, focused marketing, alliances and many other concepts are described and presented with any analysis of the global trend that has most contributed to their emergence and development. In the final section, the projection of expected trends in the following period and highlighted the implementation of the code of ethics and the human dimension of business through achieving market goals.

1. What is the IMC concept and how does it function?

The concept of Integrated Marketing Communications, created in the nineties of the last century (hereinafter IMC) consists of tools and techniques of mass and direct

communication with the main goal to build, with the synergy of promotional instruments, an institutional image and help consumers in the purchase of goods and / or services. In addition to the foregoing, the concept of IMC serves as a powerful tool for the purpose of differentiation compared to the competition (Dobrijevic, 2011). Companies apply digital marketing content to support the implementation of multiple business objectives (Rakić et al., 2014).

Basically the concept of IMC does not act alone but must be related to the concept of the marketing mix that defines the individual strategies be it on price, product, distribution or promotion. The main problem occurs in the search for a compromise between the often or almost always conflicting strategic options. In fact, none of the strategies of the marketing mix can be defined independently and separately from the others, but only in conjunction with them. In particular, if we want to increase our market share, it is possible to achieve this by using price policy in two completely opposite ways. One line goes in the direction of reducing the price (price competition), while the other goes in the direction of differentiation by defining the price at a higher level than the average price on the market along with highlighting specific benefits that consumers highly appreciate and which differentiate us compared to the competition. The answer to the question of which option to choose can not be given without the analysis of the product as an element of the marketing mix. If it is positioned by the consumer as more valuable and more successful than the competition, ie. has the status of a brand, it is not advisable to choose the strategy of price competition because it will degrade the perception of the brand in the minds of consumers and reduce its “value”. As a rule, branded products cost more than the average products from the correspondent group of the products, and the appropriate strategy in terms of prices would go in the direction of differentiation. When it comes to distribution as the third element of the marketing mix, in case of branded products that are, in accordance with the foregoing, more expensive than the average, depending on the nature and character of the product it is likely that in case of technical goods, cars and a higher level of product finishing we will choose, rather than an intensive one, a strategy of selective and in some cases exclusive distribution. Finally, the promotion strategy as the fourth element of the marketing mix depends on the previous three mentioned but also on a series of other factors that must be taken into account. Specifically, in addition to decisions regarding product, price and distribution, when we make decisions about how and what forms a set of tools and techniques which will enable us to transmit a message (hereinafter referred to as the promotional mix) we must also take into account:

1. The amount of financial resources at our disposal,
2. Activities of the competition and
3. The customer’s need for information.

Depending to whom the information is addressed, tools and techniques that make the concept of IMC are divided into two main groups, namely, the tools and techniques of mass communication intended for the market as a whole:

1. Advertisement,
2. Propaganda,
3. Publicity,
4. Sales Promotion,

5. Sponsorship and
6. The Internet.

In addition to these, there are tools and techniques of direct communication intended for individual consumers or a targeted market segment and they are:

1. Personal sales,
2. Direct marketing and
3. The Internet.

Which ever combination of tools and techniques of mass and direct communication is to be used, in order to avoid confusion of consumers, the message that is placed must be based on the same values. However this is not always easy to carry out, primarily due to the tendency of consumers to accept messages from the environment in their own way as well as the activities of competitors and their communication channels which can put our message in the wrong context.

2. Why don't traditional IMC tools give enough results?

Advertising and propaganda as paid forms of communication have a limited effect due to two main reasons. Firstly, communication channels are more than congested by the number and frequency of submissions of advertising and promotional messages since all competitors are trying to be visible and present. Second, because commercials and propaganda are paid forms of communication and due to the above mentioned facts are less trusted.

Publicity as an unpaid form of communication has an advantage over advertising and propaganda in terms of consumer confidence due to the fact that it is an unpaid form of communication but also has a serious deficiency which is reflected in its inability to influence the message that is sent and to create a positive attitude towards the company environment.

The main drawback of sales promotion is the insufficient focus of concept. By its nature and mode of implementation, sales promotion belongs to the group of tools and techniques of mass communication but does not answer the question whether it is primarily related to existing or new customers. By providing free amounts in relation to the standard packages or gift products that are the basic product for the same price awarded to existing - loyal customers and the new price sensitive customers which buy the product only on that occasion and only for the reasons stated. With the aforementioned facts the company is not able to reward loyal customers, which is one of the fundamental aspirations of the concept, but it sends a message that the customers had previously paid more than they needed to because the price with and without free amounts or gift products did not change.

Sponsorship as a form of mass communication aims to send a message about how companies share the same values with their customers be it sponsorship of a community concept (concert, exhibition, scientific and other events) or sponsorship of individuals (scientific and sporting achievements). In addition, it sends a message that the company is socially responsible, that a portion of the profits is allocated to what customers value and provides confidence that by the purchase of its products the customer also partially participates in these actions. The problem with sponsorship occurs primarily in response

to the question of what and who to sponsor to avoid polarization of the audience due to divided sympathy, whether to sponsor in the case when there is a general, a major, gold and / or other categories because guided by the desire to support something that is essential for consumers we could also donate funds etc.

Finally, the Internet, which can serve as a means of mass and as a means of direct communication, although inevitable, inexpensive and fast, is not effective enough and generally its effectiveness is expressed more in online ordering than in promotion. In the case of treating the Internet as a means of direct communication, effectiveness is increased because individual companies contact - communicate with potential customers and achieve interaction.

Direct marketing in its initial form of direct addressing and establishing and maintaining contact with individual customers by mail, pamphlets, etc. has lost in importance and has become part of the broader context of a new trend called customized marketing which as its primary aspiration has individualization of offers and their adjustment to the individual and specific customer groups or individual buyer. Due to the foregoing it is referred to as the “Marketing 1 on 1” or targeted marketing.

Finally, personal sales as a means of direct communication that relies primarily on the human factor carries the risk of realization of business functions by the direct perpetrators, their dedication, motivation, expertise and tactfulness to customer relations. In addition, the possibility of buying on line has somewhat accustomed consumers to a more comfortable way of shopping where all the activities of the sales staff also has to be realized in order to get into communication with potential customers and it is often treated as an usurpation and an unnecessary derangement.

3. What factors led to the need for implementation of innovative concepts?

Modern business conditions are characterized by high volatility. The changes are frequent, unpredictable, occurring in irregular intervals and may differ as to the causes of origin and towards the consequences left behind. Changes that occur in certain segments of economic life and the environment lead to changes in economic entities, which results in the re impact on market developments.

However, compared to the previously reported tendencies based on the marketing approach, which materialize in the company’s efforts to better meet the needs of consumers and be more successful than the competition, current business conditions require the implementation of a proactive approach and anticipation of future events, while the main goal of branding is to create needs and desire in the consumer instead of saturation. Both in the first and second case, the problem remains the same: How to communicate to the consumers what we do, how we realize it, what values guide us, what is the advantage of our offer compared to its main competitors and what benefit do, ultimately, consumers have?

The reasons for the emergence of the need for the implementation of innovative methods of communication with the target market segment and the market as a whole are numerous and begin with significant changes in terms of preferences and habits through to consumer culture. In determining the manner in which we approach the market, we

give most of the attention to the size and growth of population, age structure and ethnic composition, education level, household models and regional characteristics, in one word demographic factors that enter into the domain of the external environment in which the company may not have an effect or it is possible in a very small extent. *Changing of the age structure*, coupled with *slower population growth in developed market economies*, is the most notable demographic shift. As a consequence, an “aging nation,” is emerging ie. increase in participation of the group over 65 years old and the reduction of participation of teenagers, ie. the group of up to 20 years of age (Matovic et al., 2011). Half a century ago in France, there were 200 people aged over 100 years, while according to expert estimates, this figure in 2050 will amount to 150,000. *The total population* will continue to grow, according to estimates, by 80 million people per year. With 2.8 billion people in 1955, the population had already reached the figure of 5.8 billion, while in 2025 the number of inhabitants will amount to 8 billion. The number of people older than 65 by 2025 from the current 390 will increase to 800 million. In accordance with the foregoing, the number of which will depend on the working-age population will reach 17.2%. The number of those under age 20 is projected to fall from 40% to 32% in the period (Matovic et al., 2011). *Average life expectancy* in the world was just 45 years in 1955, in 1965 it was 65 in 2025 it will amount to 73 years. Expert’s estimates point to the fact that the rich will continue to get rich but that their life span, which is already longer than average, will continue to be extended. While the income gap between rich and poor countries is widening, the average life expectancy of the population of one part of the African continent is twice lower than in the developed world (Brit et al., 2000). Thus, the average life expectancy in the 30 countries that are considered to have the highest level of economic development is 75 years whereas in the African country of Malawi is 39.1 years in Sierra Leone to 37.9 years.

In accordance with the above, members of the marketing channel should follow all the changes in the demographic and socio-cultural environment. When it comes to the aging of consumers, marketing managers and sales managers should pay special attention to *older consumers*, their needs, habits and consumption structure. Dealers in retail stores should also have in mind the needs of the elderly and to allow them better accessibility of products on the shelves, wider aisles between shelves and the elimination of steps, the use of large print boards inside the store, the hiring of older sales people, training younger staff to be attentive to the elderly. It is desirable to promote orders through mail and by phone, home delivery and etc. Population aging creates the possibility of a change in the appearance of existing products to adapt to the physical limitations of the elderly members of the community. First of all, referring to the labels and instructions in larger format, packaging that is easy to open, equipment and transport that allow easier movement. In addition to trade, other areas of economic life such as tourism, health care and care will get a chance as well.

Global income inequality is increasing from year to year. The gap in income between rich and poor countries was 3: 1 in 1820, 35: 1 in 1950, 44: 1 in 1950 and 71:1 in 1992. The world’s largest manufacturers are moving their companies towards the Far East in search of cheaper labor force with the aim of reducing production costs and increasing competition on the market (Brit et al., 2000). *The structure of households* has also suffered changes. Members of non-traditional households are mainly employed persons with the lack of free time, and in accordance with the preceding characterized

determinant are presented in economic theory as - “time-oriented.” Due to the aforementioned lack of time and due to less interest for household, for these consumers rational reasons play a minor role and marketing reasons have greater role, and they give the same priority to retailers with differentiated marketing against traders with generic offers and low prices.

The education level of the consumer has changed for the better. Educated consumers have more sophisticated needs when purchasing. They demand quality products and services, they examine the overall usability of the product, are less tolerant of poor service and are willing to buy private label where the difference in quality is insignificant compared to the price difference. *Migrations* lead to the disappearance of a number of markets and the emergence of new ones, and *socio-cultural environment and the criteria and values* directly affect shaping of the nature of consumers needs and their preferences. The above mentioned changes, along with the rising prices of health care have led to the development of new forms of distribution of health services in the form of specialized hospital departments and home visiting programs.

Ecology, today more than ever, is one of the most important factors when making a decision whether to buy something or not. When opting, price still has the most important role, followed by convenience of use, and then immediately after comes the effect on the environment. The Heinz Company uses recycled bottles for packaging of their products (ketchup) and thereby do not use tuna that is caught in nets that can be dangerous for dolphins (Grossman, 1992). Battery manufacturer Eveready, Ray-O-Vac and Panasonic for some time already have been producing mercury-free batteries (Hapoiney, 1990). A collection from the cosmetics company Estee Lauder is made from raw materials that are not tested on animals and the products are packaged in recycled packaging. However, the initiative comes from customers. A well known example is McDonald’s which, after numerous customer complaints, has replaced its packaging made of styrofoam with paper (1994).

Hence, we should not confuse the term “green marketing” which is more than present in economic theory and it indicates any marketing activity, which creates a positive or reduces the negative impact of a product on the environment. For example, Alberto-Culver has quite inconspicuously left out chlorofluorocarbons which is harmful to the ozone layer from his VO5 hairspray. Later, he began advertising this product with the indication “ozone-friendly” (Stanton et al., 1994). *An increased interest in health*, a healthier lifestyle and condition is imperative for most demographic and economic groups of consumers. As a direct consequence of the foregoing, there has been an increase in the number of stores with sporting goods, fitness centers, macrobiotic shops and restaurants, and others. Consumer lifestyle is the way in which they lead their lives, including their activities, interests and opinions (Bennet, 1988). In the modern consumer it is noticeable that there is an increasing number of *impulsive buying*. For impulse buying the main characteristic is the lack of pre-prepared and determined plan.

The tendency of a growing *market fragmentation* in numerous micro-markets that differs by age, gender, ethnicity, education level, the style of life of the population, where each group has different needs and consumer characteristics. *Micromarketing* involves meeting the needs and desires of a special segment of consumers and in a specific way adjusts the marketing strategy in order to best meet the specific needs of this segment.

As the exact opposite of the previous one, *globalization* presents a comprehensive socio - economic and political process that goes beyond the framework of regional,

national, racial, religious and block constraints, enabling a global character (Group of authors, 2001). A significant contribution to the process of globalization is provided by *multinational companies* with a wide network of branches. As a result of the aforementioned processes there is a need for global coordination of economic policies. This phenomenon is more recent and concerns primarily the co-ordination of economic policies of the 7 economically most developed countries of the West since it began in 1985, and was joined by Russia in 1998. *Global marketing* emerges from the process of globalization of markets or is linked to the market operations of global (world) corporations and is conceptually coherent with marketing practices that could be applied on a world scale in a recognizable way. The main motto of global marketing could be formulated as “*be competitive globally, and compete locally*”. The *global consumer* is a person without prejudice, sophisticated and nuanced and layered needs, preferences clear and pronounced sensitivity to the manner and quality to satisfy their needs. In this way, a *global consumer culture* has been created, and can be seen as a movement in which the people of the world unite on the basis of common views on branded products and the use of individual services. Some products are fully associated with certain lifestyles that, following the introduction in one area and it remains accepted worldwide.

The process of *internationalization* is fully compatible with the previously mentioned phenomenon of globalization and refers primarily to the conduct of economic activity and business functions outside the country which the headquarters is located in. Companies usually decide to relocate part of their business outside the market in which they originated from and where they do the predominant part of their activity only after they believe that the additional investment to increase market share in the national economy will generate less profit from the investment of the same amount in neighboring countries. There are various forms of internationalization of businesses, from direct exports, relocation of part of the business beyond borders of the national economy (international or foreign origin companies), direct investments, franchising systems, etc..

Following a trend that causes changes in current ways of doing business and aims to achieve higher competitiveness is certainly *reengineering*. In addition to the termination of realization of certain business functions and their modifications and optimization, what also changes is the identity of the company and perception that customers have about it. Therefore, the tools and techniques by which the message is communicated to the market are changing. By applying reengineering, companies do not change the business area, they completely change the processes that follow in carrying out its business activities, or completely replace them (Milisavljević et al., 2000). To implement business functions that have been found not to perform competitively almost always specialized companies are engaged, in one word, they use *outsourcing*. The company Electronic Data System (EDS), based in Dallas, founded by billionaire Ross Perot, was a pioneer in providing outsource services, especially those related to the processing of a database of a large number of clients. In the further stages of development, outsource application is further facilitated and accelerated in the application of information technology. However, the eternal problem of the imperative for achieving competitiveness opened a number of issues of which the most important is: how to achieve this? *Benchmarking* is a systematic and continuous process of measuring and comparing the business processes of an organization in relation to the business processes of leaders, anywhere in the world,

in order to obtain information that will help the organization take action to improve its performance (Group of authors, 2001). The comparison of internal business activities with those of the market leaders gives extremely good results, which materialize in enhancing business performance, better acceptance by customers and more successful differentiation against competition.

In some cases, companies can estimate that they will jointly achieve a better result than is possible to make individually due to grueling competition. More developed forms of alliances in which relations of mutual dependence are accepted, involve the will of participants to modify their original ways of doing business in order to achieve mutual benefits. Such alliances are defined as *strategic*, because the participants are willing to replace their core business with synchronized operations aimed at the realization of common interests.

Many strategic alliances take the form of marketing alliances. They are divided into four basic categories:

- Product or Service Alliances, which arise when one company gives to another the license for the production of its products or the two companies enter the market with a completely new product. For example, Apple had teamed up with Digital Vax in order to design, manufacture and sell their product together.
- Promotional Alliances arise when a company agrees to perform the promotion of a product or service for another company. Burger King had teamed up with Disney in order to offer figures from cartoons Lion King and Pocahontes.
- Logistics Alliances arise when a company offers services of logistical support for products from other companies, and
- Cooperation on pricing occurs when one or more companies enter into special cooperation agreement about pricing. It is common for hotels and car rental companies that offer reciprocal discounts.

Alliances sometimes include links with competitors and / or customers. For example, when Motorola formed a partnership with Nextel-TV in order to build a new communications system that will compete with mobile phone systems, Motorola was the equipment supplier and competitor at the same time. The number of these complex alliances has increased considerably in a very short period of time. Perhaps the best example is Coca-Cola's relationship with McDonalds. This alliance is not only significant because McDonalds is Coca-Cola's largest customer, but because it is an alliance of their common goal and that is to win against Pepsi Co. Pepsi Co. a competitive manufacturer of soft drinks that threatens Coca-Cola, while its partners Pizza Hut, Taco Bell and KFC are direct competitors of McDonalds (Fortune, 1994). The sudden increase in the formation and scope of strategic alliances occurred during the 90s of XX century (Main, 1990). Only in the US, more than 20,000 alliances were formed between 1988 and 1992. The growth rate of formation of local strategic alliances was over 25%. Return on investment of the alliances had increased by nearly 40% between 1988 and 1992, which is 50% more than the average yield on investments of US corporations (Pekar, et al., 1994). German pharmaceutical giant Hoechst, for example, had entered into a strategic alliance with Copley Pharmaceuticals in order to successfully enter the US pharmaceutical market in expansion (Plishner, 1993). By the time they appear on the market, new pharmaceutical

products may cost around \$ 200 million. By forming partnerships, the pharmaceutical giant Merck&Co Inc., can help DuPont in the development and distribution of Du Pont's experimental active substances for medicines (Anfuso, 1994). Together, the two companies reduce the risk of launching pharmaceutical products. Merck invests in already developed experimental active substances for medicines, and DuPont has the benefit of Merck's extensive distribution network. When Blockbuster Entertainment Corp. wanted to expand beyond the video business, they used a series of strategic alliances. Blockbuster had first established a strong presence in the retail music industry by entered into an alliance with Virgin Retail Group. After this, Blockbuster had reorganized in order to adapt to the new common organization which was actively seeking profitable alliances (Zbar, 1993).

Alliances play a prominent role in the occupation of their competitive positions. “Alliances are created from the need to access new markets and to enhance the marketing, distribution and / or sales operations” (S. et al., 1992). Strategic alliances enable organizations to reduce duplication of resources and effort and at the same time strengthen their joint market power. In the same sense, Coca-Cola and Schweppes now jointly manage a factory for bottling of soft drinks. This allows them to invest capital in filling facilities and to apply the principles of total quality management of joint production. In this way, each company can economically and efficiently meet the market demand for soft drinks (Alliance, 1994).

All marketing channel members are focused on meeting the target market segments and therefore it is to be expected to gradually start to develop co-operation between the various market institutions that exist at different levels of marketing channels. Marketing of good relations that has emerged in the recent years of the twentieth century represents the identification, establishment, development and maintaining (and, if necessary, termination) of business relationships with customers and other stakeholders. The goal is the realization of profits in a way that will lead to the fulfillment of the objectives of all parties, which is achieved through a joint exchange and fulfillment of promises. The focus is more on retaining existing rather than on attracting new customers. The mentioned above should not be surprising, since according to research and numerous studies conducted in the US, the cost of attracting new customers is hundreds of times greater than the cost of retaining existing ones. Targeted or “target” marketing is the choice of target market segments and selection of the position that the company wants to occupy within the desired segment. The *target market segment* should be sufficiently large and capital intensive. What is particularly important is homogeneity within the segment and its diversity in preferences in relation to the rest of the market in order for the effects of targeted marketing to give maximum results. Along with the changes that the marketing of good relations and targeted marketing bring, the way of communication and addressing the company targeted market segment also changes. Sales and promotional activities cease to be aggressive and intrusive and increasingly give way to consultative concepts whereby firms present themselves as consumer agents. Today it is possible within 48 hours to receive a personal model of Nike sneakers whose pattern can be conceived by the buyer in any store in New York. Through information technology, the Timberland Company sends out its draft of the new collection which is sewed by the winner of the tender announced for that year. The company does not have any factory and all the products can be ordered on line by the customers. The term e-commerce

is evolving over time and at this time we are unable to definitively and finally define the subject of analysis. At this point, e-commerce can be defined as the automation of commercial transactions using computers and communication technologies (Šapić, 2004). Through e-commerce companies are trying to take advantage of lower costs, to reduce errors and cycle times, have a high degree of adaptability of products or services and thus meet the wishes of customers.

As a result of the rapid development of modern information technology and its wider application in the sphere of trade, it becomes institutionally different than before. In fact, more often instead of Brick & Mortar appear Klick & Mortar traders without stores that do their transactions are with the support of information technology, in the form of orders and home delivery.

Modern forms of trade without facilities (electronic retailing) (Crnković, et al., 1998) are:

1. TV / radio programs:

- Free radio and TV channels - programs and parts of the program,
- Cable TV - programs and parts of the program,
- Commercial Information program (“Informecials”) video - issues which can sometimes migrate from television to television,
- Cable TV and telephone: just for you, closed systems for ordering films or sports broadcasts,
- Interactive TV experiments (Videotext) a transformed TV with an interactive keyboard that allows the user to “return” information via the same channel,
- Electronic users.

2. Electronic kiosks:

- Kiosks for exploring (Browsers) - can contain video and music clips, recipes, tips etc.
- Kiosks for sale - tickets, cassettes, CDs and the like are usually sold.

3. Systems based on a focal computer and terminals:

- Sponsored systems - mainly from State or government agencies (eg. French TELETEL with a network of Munitel terminals that the post office gave to users instead of telephone directories),
- Commercial systems – usually more developed than several interested companies.

4. Systems based on personal computers:

- Public networks
- Closed networks

The congestion of communication channels, the number of received and sent messages, saturation of the target audience to whom the message should arrive and whose reaction should be gotten has led to a more creative approach to messaging and an offensive marketing strategy which has led to the emergence of Guerrilla marketing. The basis of this concept is to involve the rational part of the decision-making mechanisms of consumers while for the companies that meant that great ideas should be implemented with modest financial means. The literature often mentions the example of a small bookshop which was located right between two large and by all means more

competitive bookshops of the same purposes. The ingenuity of the owner was that he wrote “main entrance” on his store and this lead to customers rationally thinking and entering his building instead of the two adjacent thinking that this is the right path to get to the books in the window. Hence the name “Guerrilla” because the concept means to fight, so to speak to ambush, with small budgets against large. Later, due to the efficiency of the concept, guerilla marketing began to be used by large companies as a more unconventional method of attracting audiences with the aim of initiating a public discussion and therefore the realization of publicity with the purpose of propaganda. In this regard, in order to be effective, the campaign of guerrilla marketing should be creative, bold, loud and rebellious, in one word spectacular. These actions come on suddenly and unannounced, and end in the same way. Their aim is to polarize the public and lead to discussions that should cause emotions and therefore stay longer in the minds of consumers than conventional advertisements. Despite the obvious advantages, there are also some disadvantages of the concept. First of all, what should be noted is a reduced ability to control and thus the lack in the concept is identical to the lack of control in publicity as a means of mass communication. We should keep in mind that the main purpose of the launch and initiating action is that the action can be initiated not only supporters of a product or company, but also their opponents. There are numerous examples of successful campaigns like the campaign Mini Cooper, which called on its supporters to submit their personal photos and thus get a chance to have their face on a billboard campaign, or for the Olympic Games in Atlanta in which Linford Christie participated with logo-lenses in the form puma eyes, or advertisements for the Zoo which was presented by label snakes enveloping the city bus and acted very suggestively on passers-by and many others.

Conclusion

Modern business conditions, due to the presence of current global trends, require the implementation of new and innovative approaches in the field of communications of companies with their targeted market segment and / or the market as a whole. Traditional tools and techniques of mass and direct communication, due to changed preferences and habits of consumers are losing out on efficiency and the effectiveness. The fact that most of the tools and techniques of communication are in their stages of maturity and that their use has increased by competing companies, directed towards seeking new and innovative models of communication to appropriated a greater effect on invested funds. In the near future it is realistic to expect their modification and assimilation to trends that have led to the emergence of new concepts which companies apply in communication with consumers. Even greater sophistication, a consultative relationship based on concern for health and environmental protection, the wider implementation of information technology along with other global trends will affect the further modification of the instruments of the communication mix. Emphasis will be on innovative concepts and a greater involvement of consumers and their activation in the communication process. In the near future we should expect that companies will communicate with the market in a manner to achieve full effectiveness and reach out to consumers with the exact aim which is construction of their value system, instead of supplying them with basic information.

The confirmation of previous mentioned is presence of widespread application of research results “neuromarketing,” which aims is to measure the psychological reactions of potential customers without their knowledge. Currently, companies measures heart rate, consecutive reactions of eye, blood pressure and total body reaction of potential consumers at some of the communication techniques in a controlled environment. The results of such research are fascinating how much and worrying. Measuring customer reaction to the busy streets of London indicated that the organism of potential consumers is in a state similar to professional fighter pilots. This indicates the necessity of application of ethical principles and to prevent possible abuses. Due to the foregoing, many successful companies today are reaching for “marketing by permission.” In this regard the further development of the concept of communication, we should expect further development of tools and techniques of communication which are necessary to be combined with code of ethics.

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GLOBAL TRENDS IN TRADE WITH REFERENCE TO REPUBLIC OF SERBIA

Abstrakt

Powerful and dynamic changes are present in all spheres of society, both at national and at the global level. Those changes are very difficult to monitor due to intensive frequency of change. The changes are also present in trade. This work analyzed changes that are coming from the global environment, that intensely affect the development of modern trade. The question is whether modern trade can handle strikes coming from the global development.

Large industries, commercial and financial organizations and national economies increasingly connect and turn into mutually conditional and interdependent. Greater trade integration is evident, in every year increased trade results in a higher share of exports and imports in GDP.

This work also emphasizes on business performances of trade in Serbia. Results of research show that business performances of trade are still weak, though recently improved marginally. Developments in the field of trade and the change of perception of trade itself drastically improved. Despite of some improvements of business performances, modern trading and market structure relatively slowly develops and it is certain that Serbian trade still largely lagging behind comparing the trade of the European Union.

Key words: modern trade, global trends, economic policy, changes, development

JEL classification: R11, R13

ГЛОБАЛНА КРЕТАЊА У ТРГОВИНИ СА ОСВРТОМ НА СРБИЈУ

Апстракт

Снажне и динамичне промене присутне су у свим сферама развоја друштва, како на националном, тако и на глобалном плану. Учесталост промена је таквог интензитета да их је веома тешко пратити. Те промене су присутне и у трговини. Промене које долазе из глобалног окружења,

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интезивно утичу на развој савремене трговине. Поставља се питање, да ли савремена трговина може поднети ударе које доносе глобална кретања.

Све више се повезују, узајамно условљавају и доводе у све већу међузависност велике индустрије, трговачке и финансијске организације, националне привреде. Већа трговинска повезаност је евидентна, јер је готово сваке године присутан пораст трговине, што се резултује све већим учешћем извоза и увоза у друштвеном производу.

Пословне перформансе трговине у Србији су још увек слабе, иако су у последње време незнатно побољшане. Кретања у сфери трговине и сама промена перцепције о трговини, су драстично напредовала. Али, и поред извесних побољшања пословних перформанси, релативно се споро изграђује модерна трговина и структура тржишта, и сигурно је да трговина Србије још увек, у великој мери заостаје у односу на трговину Европске уније.

Кључне речи: *савремена трговина, глобална кретања, економска политика, промене, развој*

Introduction

Economic reality and processes occurring in recent years in the world economy, confirm that economic relations and development processes are increasingly subject of globalization. Connectivity and interdependence of industrial, commercial and financial organizations, as well as the national economy is growing. The basic parameters of contemporary changes in the world do not refer only to political dependency, but also to economic dependence and informational globalization as well. (Leković, 1999, p.127).

The transformation of the world economy into economy of the world is becoming more intensive and brings a qualitative change in economic relations and flows of the world economy. The global system of doing business and creating a dynamic and flexible economic world order are products of intensive globalization process. This is especially evident in the strategy of leading companies - the transnational corporations and national economies.

Globalization is manifested in different forms, but its presence most intensively effects on: trans-nationalization of production and trade, the computerization of society at the global level, new forms of regional cooperation, increased number and spread of activities of international organizations, the availability of scientific information and equalizing conditions of operation and cooperation.

1. The structural changes in contemporary trade

From the standpoint of the world economy and trade, the end of XX and beginning of XXI century is characterized by large fluctuations and structural changes and realignments between countries. Changes in modern trade directly caused establishment of new relationships between key stakeholders. The globalization and internationalization of trade and strong international competition, generates permanent changes (Vukmirica, 2000, p. 67).

The changes coming from the global environment intensely affect the development of modern trade. The changes of such intensity are radically transforming the traditional concept of trade. Trade is increasingly affected by the processes of concentration. The integration of world economies into regional trade and integration blocks further contributes to the complexity of the functioning of the entire world market (Lovreta, 1999, p. 7).

One of the most important features of the new global economy and the modern trade is the growing connection between highly developed and developing countries. There has been an increasing in openness of national economies. The poor nations of the world have become part of the global trading system, finance and manufacturing. For supporters of globalization, this development promises greater gains from trade and faster growth for both parts of the world divided by the level of income. For the skeptics, integration of rich and poor promises increasing in equality of the rich and greater dislocation of the poor.

There has been a shift in balance of power in the economy of developed market economies, namely in the direction of the dominant role of large retail companies. The modern world is evolving towards a single economic process, where transnational corporations appear as well as their subsidiaries. They see the world now as one big market place (Vuković, et al., 2013).

Among them, a strong competition is taking place. They want to fully internationalize its businesses and expand into markets in which they had not previously operated.

National markets are becoming tight for big companies. Antimonopoly regulation limits them, and therefore the big companies are finding modalities for expansion into new markets. Most trading activities are in the hands of a small number of large retailers. In Europe, the top ten companies achieved most of the turnover in the trade, and in some countries, even the top five. Large companies integrate small companies into their systems or expel them from the market. In the countries of transition economies a local merchants disappear. Statistics of the trade sector show that in many western countries, ten major companies are producing about 80% of turnover, and the first five about 60% of turnover (Eurostat, 2015, www.epp.eurostat.ec.europa.eu).

The speed and nature of changes occurring in the trade could freely be marked as a real trade revolution. Trade has experienced real expansion using modern information technologies, which led to the complete adaptation of trade to demands and needs of consumers (Župljanin, 2010, p. 119).

Electronic commerce as one of the most important characteristics of modern commerce, allows the efficient functioning of global organizations worldwide. Transnational companies with many branches, developed network of suppliers, distributors, banks, customers, constitute an extremely complex system. A successful functioning of that system is ensured through informational and electronic technology support. In this sense, world trade is increasingly shifted to telecommunication devices. Electronic commerce provides fast, efficient, continuous and complex performance of all business operations related to trade (Radosavljević, 2006, p.47.)

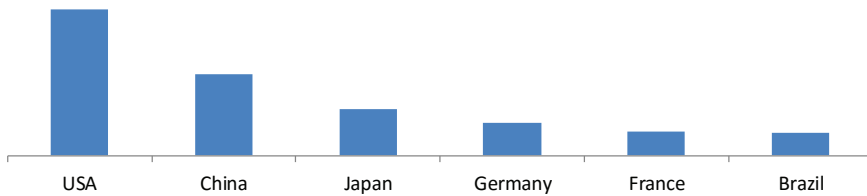
2. Global trends in the world and their impact on trade

The dynamic development of world's economy has caused major changes in its very structure, its relationship with national economies, changes in trade, as well as the differences between successful and unsuccessful trade policy (Leković, 1999, p.128).

Economic trends in the international environment have deteriorated in recent years due to the reduction in global demand and increasing geopolitical tensions. The economies of most countries globally are faced with constraints and structural problems that are slowing down economic growth. The biggest challenge of the economy today, is to create conditions for job creation. Changes in financial markets influence on economic developments in the world as well as uncertainty in the businesses which deepens the fragility of the world's banking system. At the global level economic imbalances are widening, and recently overcome recession is threatened by indebtedness, deepening employment crisis, announcing the demographic threat of poverty as a result of the widening gap of rich and poor, famines, new migrations. Uncertainties and risks effecting economic trends are numerous and different, because the most urgent problems have not been solved, and may diametrically change the planned projection of the global economy.

However, studies indicate a recovery of the world economy, so that developed economies expect gradual growth. Global indicators confirm the enhanced growth in the short term and the longer-term perspective, as well as strengthening of global economic activity. Monetary policy in developed countries continues to encourage the financial markets and the recovery of the world economy.

In 2015, according to forecasts of the International Monetary Fund, the expected recovery and growth of the global economy is 3.8%, compared with last year's 3.3%, and it is estimated that the global growth would be led by China and the US, while Euro Zone will again negatively impact on the world economy with minimal growth of 0.8%. China's economy in 2015 would slow down the growth from last year's 7.3% to 7.1%, and would turn to greater internal consumption, to the detriment of investment. The United States in 2015 will have the highest growth in the past decade of 3.1%. Acceleration of growth of the US economy is a key reason why the world economy is expected to grow by about 3%, compared to 2.5% in 2014. Japan, the third largest economy in the world, slipped into recession, and is expected to grow by a modest 0.8%, compared to the significant 1.54% in 2013. India's economy is expected to grow by 6.4% and 6.6% in 2015, which is a significant increase compared to 5.6% in 2014. (Chart 1) (IMF, 2015, www.imf.org).

Chart 1: The largest economies in the world

Source: MMF, (2015). www.imf.org

Increasing activity in developed economies, especially in the field of investments with a high import share, should accelerate world trade during the coming period and enable its recovery. However, it is estimated that world trade will probably not expand at the same pace as before. World trade (excluding Euro Zone) should increase by 5.7% in 2015 and 5.9% in 2016. (Table 1). It is expected that the growth of import demand of the main trading partners Euro Zone would be slower than demand from the rest of the world, causing a rise in external demand of Euro Zone weaker than the growth of world trade (WTO, 2015, www.gatt.org).

Table 1: International environment (changes in %) - June 2014

	2013.	2014.	2015.	2016.
The real World GDP (without Euro Zone)	3,4	3,6	4,0	4,1
The World trade (without Euro Zone)	3,5	4,3	5,7	5,9
External demand of Euro Zone	3,0	3,7	5,2	5,6

Source: WTO, (2015). www.gatt.org

According to the figures of foreign trade in 2013, China is the first time surpassed the United States, according to IMF forecasts, China is expected in four years to become quite close to America in the GDP, calculated on the basis of purchasing power parity. In the next four years China's share of global GDP will be also almost equated with participation of the US in GDP. In 2013 China realized trade with the rest of the world in amount of 4.2 billion dollars, which is 7.6% higher than the value in 2012. China's exports in 2013 amounted to 2.2 billion US dollars, 8 % more than the previous year, while imports increased by 7.3% to approximately \$ 2 billion. For 11 months in 2013, the United States, the largest economy recorded a foreign trade turnover of 3.5 billion dollars. In 2013, China has participated in world GDP in 15.4% and America in 18.6%. China's GDP in 2018 will be worth 20.7 billion dollars and US' 21.7 billion, based on

this very important economic indicator, the difference between the two countries would significantly reduce. The rapid growth of China's GDP would allow China to realize share in global GDP in 2018 in amount of 17.9%, comparing to US' 18.6% GDP (IMF, 2015, www.imf.org)

In longer term perspective, assuming that there will not be a further tightening of tensions at the global level, gradual acceleration of growth in real GDP is anticipated during the next period. It is expected that the growth rate of world real GDP (excluding the Euro zone) would raise from 4.0% in 2015 and 4.1% in 2016. The growth of real GDP should accelerate in 2015 and 2016, provided that the differences in growth between countries should reduce (IMF, 2015, www.imf.org).

Speaking about the European economy, its recovery started in the second quarter of 2013, but that growth is still unstable, while the economic dynamics in many members of Euro Zone remains weak. Despite the favorable financial conditions, economic recovery in 2015 will be slow, reflecting a gradual easing the consequences of the crisis with still high unemployment, high debt and low capacity utilization.

In 2014, the range of growth rates of the members of Euro Zone was very broad, from -0.7% (Balkan countries with traditionally low economic growth) to 4.6% (Ireland, the most promising European economy). However, the difference in growth is likely to shrink over the next two years. In 2015 and 2016 all Member States should record positive growth (ECB, 2015, www.ecb.europa.eu).

Due to increased geopolitical risks and adverse global economic perspective, it is predicted that the EU and Euro Zone would have a fairly weak economic growth. It is expected that the growth of real GDP could be 1.5% in the EU and 1.1% in 2015 in the Euro Zone (ECB, 2015, www.ecb.europa.eu).

The tension between the EU and Russia certainly had some effects on Euro Zone's exports, while countries with relatively strong trade links with Russia were quite significantly affected. The European Union fears also from China. Chinese trade surplus with the EU hourly increase for \$ 20 million, and in 2015 will reach the sum of 170 billion Euros (227 billion dollars), while the deficit in EU trade with China is likely to be higher than the US' (which was in 2014, 232.5 billion US dollars) (ECB, 2015, www.ecb.europa.eu).

Exports within Euro Zone should grow somewhat more slowly than exports to countries outside the Euro Zone due to still fairly weak domestic demand in Euro Zone. Import from countries outside Euro Zone is expected to moderately grow in the next period. It is expected that net trade will contribute to a moderate growth of real GDP.

In 2016, increased domestic and foreign demand, as well as the further implementation of a very flexible monetary policy, related with the low cost of financing, should support further strengthening of economic growth.

3. The impact of the economic disintegration to trade in Serbia

International economic relations are characterized by strong regional processes of economic integration and economic cooperation between the countries. Very often, they

are conditioned by the political relations in a particular geographic area or are a result of specific cultural, ethnic, geographic and similar characteristics. Nevertheless, regional cooperation and integration are becoming part of the general development trends of the modern world in the sense of realization of economic and other goals and interests of countries and regions.

Unlike other areas in Europe, which have made significant progress in the field of regional cooperation and economic integration, the Balkan region continues still represent disjointed and economically disintegrated area. The result of it is deepening gap between the European Union and the Balkan countries. However, the Balkan countries in recent years have affected by the processes that besides major political changes, include the construction of new economic relations, which should enable the resolution of a number of economic problems of the region.

Balkan countries, including Serbia, are located on the historic crossroads, conditioning whether the Balkan region would have a future. Events in recent years indicate that regional cooperation in the Balkans has good perspective. The way to overcome many political, social and economic problems inherent in the Balkan countries is in the expansion of regional cooperation and their tighter integration with the European Union.

In 2015, the Balkans, as well as Serbia, from the standpoint of the economic environment, implemented market reforms and European integration processes, still has not even nearly reached the level of successful countries (EBRD, 2015, www.ebrd.com).

The Serbian economic growth from 2001 was based less on reforms and more on a “consumer model”, which was only possible due to large privatization revenues and significant borrowing abroad.

In the previous decade, the economic growth and development was carried out in an attempt to achieve growth in both private and public consumption and, on the other hand, through market reforms, privatization and the influx of foreign investments to create the institutional and material conditions for stable development. The second major problem was the unfavorable structure of creation and use of the growing GDP, which led to increasing exports imbalance due to growing trade and current account deficits.

The current model of economic growth and development of Serbia is not sustainable and must be changed fundamentally in order to avoid the fate of undeveloped and heavily indebted countries. The model which involves considerably faster growth of domestic demand than GDP growth due to the growing share of the current account deficit to GDP ratio is unsustainable. Given the over-drying privatization revenues and limited possibilities for further excessive borrowing abroad, Serbia has to turn to a new model of economic growth and development that is pro-investment and export-oriented (Government of Serbia, 2015, www.srbija.gov.rs).

In 2013, real GDP growth in Serbia was 2.6%. The fall in GDP of Serbia in 2014 was 1.8%. Observed by quarters, in 2014 real GDP fall compared to the same period last year was 0.2% in the first quarter, 1.2% in the second quarter, 3.8% in the third quarter and 1.8% in the fourth quarter. In the fourth quarter of 2014, the decline in GDP continued but in lower intensity than in the previous quarter. Gross domestic product in real terms decreased by 1.6% compared to the fourth quarter of 2013 (NBS, 2015, www.nbs.rs).

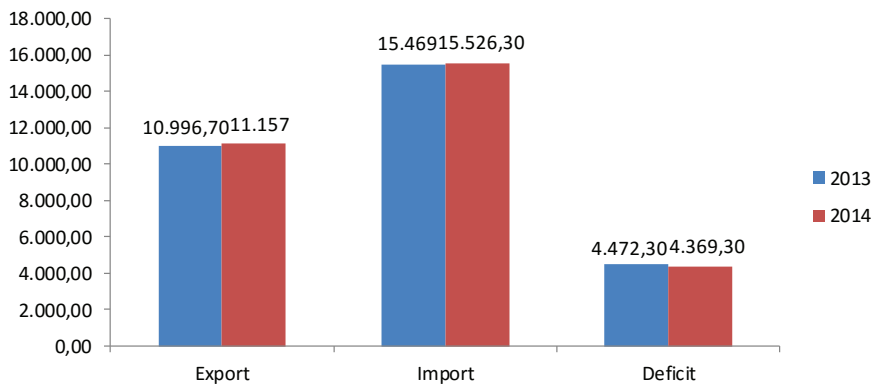
In December 2014 downward trend in exports was interrupted. Exported goods amounted to 957.1 million euro which is 6.5% more than in December 2013. The value

of imported goods was 1.4 billion euro, representing a decline of 1%. Foreign trade deficit of 13.7% was lower than in December 2013, while 67.6% of imports were covered by exports (RZS, 2015, www.stat.gov.rs).

Looking regionally, the biggest share in Serbian exports was in Vojvodina region (33.3%), followed by Sumadija and Western Serbia (31.6%), the Belgrade region (21.3%), Southern and Eastern Serbia (13.4 %), and about 0.3% of exports was unclassified by territories. The biggest share in imports had Belgrade region (42.6%), followed by Vojvodina region (29.4%) (RZS, 2015, www.stat.gov.rs).

In 2014, exports of goods amounted to 11.2 billion euro and 15.5 billion euro, which is an increase of 1.4% and 0.4% compared to 2013. (Chart 2). Trade deficit during the same period amounted to 4.4 billion euro and decreased by 2.3% compared to the same period last year. The biggest share in exports related to road vehicles (13.8%). A significant share in exports was related to electrical machinery and appliances, cereals, vegetables and fruits, metal products and clothing, which together with road vehicles makes 40.3% of total exports. Import of road vehicles, petroleum and petroleum products, electrical machinery and gas was 27% of total imports in 2014 (RZS, 2015, www.stat.gov.rs).

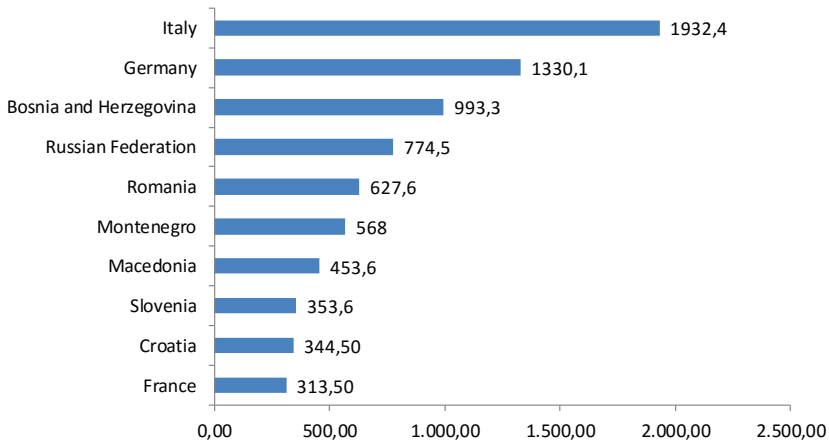
Chart 2: Structure of exports and imports in 2013 and 2014 in million of EUR



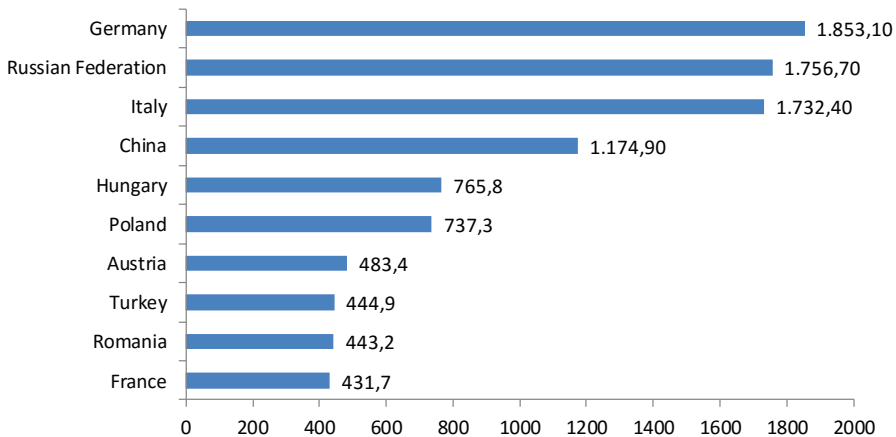
Source: Republic Statistical Office of Serbia, SORS, (2015). www.stat.gov.rs

The positive balance of foreign trade (1331.1 million Euro) was realized by sectors: food and live animals, beverages and tobacco, and miscellaneous manufactured articles (furniture, clothing and footwear) (RZS, 2015, www.stat.gov.rs).

The largest trade partner in 2014 was EU, which accounted for 64.6% of total exports and 63.1% of total imports. Half of the total export in this period was focused on the market of five countries: Italy, Germany, Bosnia, Russia and Romania (Chart 3). Imports from Germany, Russian Federation, Italy, China and Hungary accounted for 46.8% of total imports (Chart 4). Trade with Bosnia and Herzegovina, Montenegro, Macedonia, Italy, Romania, and the United States recorded a surplus of 1.8 billion euro.

Chart 3: Structure of exports by countries in 2014 (mil. EUR)

Source: Republic Statistical Office of Serbia, SORS, 2015. www.stat.gov.rs

Chart 4: Structure of imports by countries in 2014 (mil. EUR)

Source: Republic Statistical Office of Serbia, SORS, 2015. www.stat.gov.rs

Total external debt at end-November in 2014 amounted to 26.344 million euro, compared with the end of 2013 it was an increase of 580 million euro. The external debt of the public sector has increased by 776 million euro and amounted to 13.942 million euro, while private sector's external debt was reduced by 195 million euro and amounted 12.403 million euro. In the same period, the structure of the external debt of the private sector banks' debt was reduced by 649 million euro and amounted to 2,754 million euro, while corporate debt increased by 453 million euro to 9,647 million euro (NBS, 2015, www.nbs.rs).

Prospective for recovery of the real sector in Serbia are uncertain. It is necessary to create a favorable environment for business and achieve economic stability (Vukovic, & Pavicevic, 2015).

Incoming period requires a new model of economic growth and development, which requires a shift from consumerism to pro-investment and export-oriented economic growth. A shift is needed in the area of accelerating reforms and European integration and appropriate macroeconomic and structural policies.

Conclusion

The basic feature of the world economy last decade is the dynamic development of international trade. The share of national exports in total world exports is one of the most important indicators of economic expansion of the economy. Rampant globalization process of the world economy and liberalization of international trade led to numerous regional, both economic and political integration. Regional economic integration contributes to the development of trade between the countries in the region, and thus intensifies and develops their internal trade.

In the conditions of globalization that can increase global economic growth, but also could deepen the gap between rich and poor countries, and finally eliminate from the competition the least developed economies, it is essential to improving international trade relations. Removing obstacles to trade policy and the opening of the market to less developed countries, a stable trade policy lead to economic progress for all countries.

The concept of economic policy should consider several important changes in the environment. Incoming years, microeconomic and macroeconomic risks will be more pronounced, regulatory requirements at national and international level will be raised and the current fiscal relaxation of most countries in the world that has prevented the collapse in demand will take longer. Fighting the recession, the decline in exports, increased unemployment in the world, can encourage governments and central banks of some countries to depreciation of the national currency, which can lead to increased protectionism, trade wars and growing instability in international economic relations. Uncertainties and risks of impacts on economic developments are many and varied and can change diametrically planning projections of the global economy.

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COMPARING ABNORMAL RETURNS AND RANKING OF TECHNICAL ANALYSIS INDICATORS BASED ON TOPSIS TECHNIQUE

Abstract

This paper is about using TOPSIS technique for ranking of investment based on technical analysis indicators. Sample data Include; 10 listed Dow-Johns companies, Yahoo, Facebook, Google, Apple, Microsoft, General Electric, Coca Cola, Cisco, Boeing and Bank of America. "between beginnings of 2009 to the end of 2014". In addition, it presents a Technique for Order of profitability by Similarity to Ideal Solution to evaluate technical indicators. Consequently, by this ranking we can determine the relative importance of indicators to make the best investment decision. According to results, all the technical analysis indicators, which used in this research, can find profitable trading prices and all the returns are more than zero. The summary of results for this sub-period describe that in order, MACD with a mean of (1), RSI with a mean of (0.69), SMA with mean of (0.54), STO with a mean of (0.52), CCI with a mean of (0.36) and MFI with a mean of (0), everyone has an abnormal return greater than the average market return rate with a mean of 0.014.

Key words: *Technical Analysis Indicators; TOPSIS Technique; Profitability Ranking;*

JEL classification: *G11, G17, C02*

ПОРЕЂЕЊЕ АБНОРМАЛНОГ ВРАЋАЊА И РАНГИРАЊА ТЕХНИЧКЕ АНАЛИЗЕ ИНДИКАТОРА НА ОСНОВУ TOPSIS TECHNIQUE

Апстракт

У овом раду је коришћена Topsis Technique за рангирање инвестиције на основу индикатора техничке анализе. Узорак података укључује; 10 наведених Dow-Johns-компанија, Yahoo, Facebook, Google, Apple, Microsoft, General Electric, Coca Cola, Cisco, Boeing and Bank of America у периоду од

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почетка 2009. године до краја 2014. године. Поред тога, представља технику за одређивање профитабилности по сличности са идеалним решењем за процену техничких показатеља. Сходно томе, овој листи можемо одредити релативни значај показатеља која је најбоља инвестициона одлука. Према резултатима, код свих показатеља техничке анализе, који се користе у овом истраживању, могу се наћи профитабилне цене трговања и све што се враћа је више од нуле. Резиме резултата за овај под период описујемо следећим редом, MACD са средњом вредношћу (1), RSI са средњом вредношћу (0.69), SMA са средњом вредношћу (0.54), STO са средњом вредношћу (0.52), CCI са средњом вредношћу (0.36) и MFI са средњом вредношћу (0), сваки има абнормални повратак већи од просечне стопе на тржишту са средњом вредношћу 0.014.

Кључне речи: техничка анализа индикатора; TOPSIS Technique; Профитабилност Рангирање;

Introduction

The multi-criteria decision-making method is a common replication applied in Operations Management, which is then modified to be applied in Financial Management scope. The first research in Financial Management done by Tarmizi in Indonesia. Therefore, this method is relatively new in Financial Management. The modification is done by changing the criteria used in operations field into financial ratio criteria. The application of statistical factors in this multi-criteria decision-making method is still considered trial. Thus, there has been no established financial criterion applied for this method until nowadays. Simultaneous research can be expected to develop some useful criteria, which can be a fundamental in stock selection method, as well as a new method in the Financial Management scope. (Tarmizi, 2006).

The complexities are numerous, and overcoming these complexities to offer successful selections is a technical analyst's challenge. It is important that the limited amount of investing Portfolio should be efficiently allocated over many stocks. The technical analysts need to forecast future prices to reduce the average market return rates and find optimal combination of optimal indicators out of many technical indicators. The purpose of technical analysts is maximizing the returns in allocating indicators Importance to many indicators.

In a theories problem, the solution of the portfolio selection problem presented by H.Markowitz has a tendency to increase the number of stocks selected for investors. (Markowitz, 1952).

This paper explores which indicator, including the Relative Strength Index; Stochastic Oscillator; Simple Moving Average; Money Flow Index; Commodity Channel Index has optimal trading ability can lead to high financial performance. The financial performance is evaluated by TOPSIS multi-criteria decision-making (MCDM); this information could support technical analysts' decision-making. In real investment systems, the decision-making problems are very often uncertain or vague in a number of ways. This type of uncertainty has long been handled appropriately by probability

theory and statistics. However, in many areas of financial problems, such as investment management, market microstructure, financing and others decisions often employ natural language to express thinking and subjective perception.

Multi-criteria decision-making forms an important part of the decision process for both the small (an individual) and the large (an organization) investment. When available financial information is precise, many methods exist to evaluate the investment. The methods used to analyze securities and make investment decisions fall into two very broad categories: fundamental analysis and technical analysis. Fundamental analysis involves analyzing the characteristics of a company in order to estimate its value. Technical analysis takes a completely different approach; it does not care one bit about the “value” of a company or a commodity. Technicians are only interested in the price movements in the market. Technical analysis is a method of evaluating securities by analyzing the statistics generated by market activity, such as past prices and volume. Technical analysts do not care whether a stock is undervalued - the only thing that matters is a security’s past trading data and what information this data can provide about where the security might move in the future. These days by improvement in financial and computer Technology one of the ways that investors extensively use is technical analysis. One of advantage of Technical analysis is finding the best trading price. Finding these trading prices, help the investors that trade timely and consecutively in the markets by increasing and decreasing the prices speculation and in a period earn abnormal returns.

Theoretical and background research

Technical analysis

Fluctuations in stock markets has made imperative to understand the concept and application of Technical Analysis Indicator. Researcher hereby defined Technical Analysis Indicator as series of data points that are derived by applying a formula to the security’s price and/or volume fields.

So researchers need the price data that is the OHLC (Open-High-Low-Close). A series of data points over a period of time is required to create valid reference points to enable technical analysis. (Ghobadi, 2014).

Technical Analysis Indicators is sub-divided into Leading Indicators and Lagging Indicators. These indicators help in profit by predicting what prices will do next and thus provides greater rewards at the expense of increased risks. So such indicator precedes the price movements. They perform best in sideways or trading market. Such indicators typically work by measuring how overbought or oversold a security is because the security which is oversold will bounce back.

Technical Analysis: The Technical Analysis origins back to Charles Dow research in early twentieth on industrials Dow Jones Averages index. His research on the market caused him realize that market trends and speculations do not simply follow financial statements and information and there are some other factors that affect the market. Those researches made a great development on the markets price forecast methods. Dow Theory made by collection of his articles in Wall-street journals “between (1851) to (1902)”.

The Dow Theory on stock price movement is a form of technical analysis that includes some aspects of sector rotation and his theory mainly focused on market trends Dow Theory basis conclude that the fact prices are affected by all the information and

events in the markets. All the available knowledge to market participants, including investors or fund managers affects in the price. Early attempts in academic councils assess the effectiveness of technical analysis considered very simple rules called filter rules. These rules involve buying a security if it had increased by $x\%$ on the last period or selling it if its price has decreased by $x\%$ on the last period. (Ghobadi, 2014).

Frankel and Froot noted that market professionals tend to include Technical Analysis in forecasting the market (Frankel, Froot, 1990). Their article discussed that the helpful principle of Technical Analysis is to identify trends and then go with the trend whether it is occurring randomly or due to fundamental factors. They also discussed the techniques of moving averages and relative strength index (RSI) by applying it on Singapore stock exchanges. Their results showed that application of RSI is good if used in non-trending environment and the results indicate that using simple moving averages and 50 crossover method of RSI will provide good results excluding the transaction costs. Manuel Ammann, Matthias Rekaté and Rico Von Wyss The text of their article showed an outperformance of Technical Analysis. They argued that the extent of academic acceptance of using Technical Analysis is not so good as compared to its practical application and it has been said that Technical Analysis is combination of separate methods than a full proper system or method. The article also discussed that Technical Analysis is connected with the forces of demand and supply and sentiments in markets so it is very useful in short term also because Technical Indicators can be calculated and applied quickly whereas fundamental techniques may take days to apply (Wong, Manzur, Chew, 2002). They also discussed simple moving average techniques, RSI and advance/decline ratios technique and applied it onto 18 stocks out of the Swiss Stock market and concluded that application of Technical Analysis including transaction costs provides results not more than a buy or hold strategy but advance/decline ratios are more helpful and successful even when transaction costs are taken into account. They show that support and resistance levels coincide with peaks in depth on the limit order book 1 and moving average forecasts reveal information about the relative position of depth on the book (Kavajecz, White, 2004).

Treynor and Ferguson established the first theoretical model to apply Technical Analysis and model described that investors choose strategies to hold a security for a particular time period either long or short in order to get benefit from it later after they receive private information at particular point of time. The model concluded that this private information is helpful only with the combination of some additional or further information. (Treynor, Ferguson, 1985).

Brown and Jennings in the article on outperformance of Technical Analysis said that portfolio strategies works so well when the market does not contain all relevant information and there are only few investors who are well aware of that information. (Brown, Jennings, 1989).

William Brock, Josef Lakonishok and Blake LeBaron (1992) their article explored moving averages and support and resistance levels in order to find out generation of signals for the long and short time period and then to check high and low hits of prices. They argued that we cannot allow to leave those false patterns which are not covered by Technical Analysis tools and Techniques because it is very difficult to enquire too much about data but we can be able to reduce this problem either by providing full reporting of techniques used or by using a very long data and information. (Brock, Lakonishok, LeBaron, 1992).

Dunham the text of their article explained the theoretical and empirical examination of price trends and patterns in Technical Analysis. Technical Analysis has been defined in the Article as to use information from the past price trends and movements which are

then summarized into charts which then helps investors to predict price movements in future. (Dunham, 2007).

Kadida Ramadhani & Shagilla Mashaushi the text of their article showed the analysis of technical trading strategies. In the 1980s, technical strategies have made a significant “come back” for predictions and it motivated researchers to reconsider Technical Analysis as well. Louis B. Mendelsohn argued that the technique used in trend forecasting is moving averages. It has its own strengths and weaknesses at smoothing the data and reducing the lag (when mathematical structure or in simple words averaging prices over a number of prior periods), have a tendency to follow the current market price) and this lag effect can become very prominent and costly in very fast moving markets where prices are rising and falling sharply, If this deficiency can be overcome in some way then this tool of moving averages could be ranked as the most effective trend identification indicator in the analysis of market but still despite of all its limitations Moving Average technique has still been used broadly because it has been recognized as an important quantitative trend reorganization technique and if investors are creating such strategies for forecasting trends that compares actual moving averages with predicted moving averages, then definitely investors will be able to get an early warning that there is an approaching change in trend direction. (Ramadhani. Mashaushi, 2006).

Ghobadi in a his thesis about “Profitability of Technical Analysis Strategy to Earn Abnormal Returns in TSE (2007-2013)” report abnormal returns using technical trading strategy in the Tehran Stock Exchange by statistical tests. They note that Technical Analysis can signal optimal trading prices and give Abnormal returns more attractive than the Iran Average market return Rate. (Ghobadi, 2014).

Ghobadi test the Profitability of Technical Analysis Indicators to Earn Abnormal Returns in International Exchange Markets from 2008 through 2013. They conclude that the positive returns according to technical analysis indicator returns and these returns is significantly more than London Interbank Offered Rate. They observe that the Stochastic Oscillator, Relative Strength Index, Money Flow Index, Commodity Channel Index, Simple Moving Average indicators produces the best results, followed by the London Interbank Offered Rate. (Ghobadi, 2014).

Ben R Marshall and Jared M. Cahan evaluated the profitability of CRISMA technical trading system. They collect information of companies on CRSP database in the period of January 1, 1976 to December 31, 2003 including 200 days of past closing prices and 20 days of past volume. They examine both long and short CRISMA filter rules in this study and found that even the system generates some profit but not consistently. (Marshall. Cahan, 2006).

Topsis

The Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) is a multi-criteria decision analysis method, which was originally developed by Hwang and Yoon in 1981 with further developments by Yoon and Hwang, Lai and Liu. TOPSIS is based on the concept that the chosen alternative should have the shortest geometric distance from the positive ideal solution and the longest geometric distance from the negative ideal solution. It is a method of compensatory aggregation that compares a set of alternatives by identifying weights for each criterion. Normalizing scores for each

criterion and calculating the geometric distance between each alternative and the ideal alternative, which is the best score in each criterion. (Yoon, 1987 : Hwang. Lai. Liu, 1993).

An assumption of TOPSIS is that the criteria are monotonically increasing or decreasing. Normalization is usually required as the parameters or criteria are often of incongruous dimensions in multi-criteria problems.

Lehmann and Modest combined the APT performance evaluation method with the Treynor and Mazuy (1966) quadratic regression technique. They found statically significant measured abnormal timing and selectivity performance by mutual funds. They also examined the impact of alternative benchmarks on the performance of mutual funds finding that performance measures are quite sensitive to the benchmark chosen and finding that a large number of negative selectivity measures. In addition, Henriksson (1984) found a negative correlation between the measures of stock selection ability and market timing. (Lehmann. Modest, 1987).

Lee and Rahman empirically examine market timing and selectivity performance of mutual funds. It is important that fund managers be evaluated by both selection ability and market timing skill. (Lee. Rahman, 1990).

Sugeno introduced the concept of fuzzy measure and fuzzy integral, generalizing the usual definition of a measure by replacing the usual additive property with a weak requirement, i.e. the monotonic property with respect to set inclusion. In this section, we give a brief to some notions from the theory of fuzzy measure and fuzzy integral. (Sugeno, 1974).

Research Hypothesis

1. Technical analysis indicators can forecast profitable investment.

$$H_0: \mu > 0$$

$$H_1: \mu \leq 0$$

2. From TOPSIS technique point of view, which technical analysis indicator returns priority is higher?

$$H_0: \mu_1 = \mu_2 = \dots = \mu_k \text{ i.e., all indicator return means are equal.}$$

$$H_A: \text{At least two of the means differ.}$$

Variables

Relative Strength Index

$$100$$

$$1.RSI = 100 - \frac{\quad}{1 + RS}$$

$$2.RS = \text{Average Gain} / \text{Average Loss}$$

$$3.\text{Average Gain} = [(\text{previous Average Gain}) \times 13 + \text{current Gain}] / 14$$

$$4.\text{Average Loss} = [(\text{previous Average Loss}) \times 13 + \text{current Loss}] / 14$$

The Relative Strength Index (RSI) is a momentum oscillator that measures the speed and change of price movements. RSI oscillates between 0 and 100. Traditionally, and according to Wilder, RSI considered overbought when above 70 and oversold when below 30. Signals can also be generate by looking for divergences, failure swings and centerline crossovers. RSI can also use to identify the general trend. RSI considered overbought when above 70 and oversold when below 30. These traditional levels can also adjust to fit the security or analytical requirements. Rising overbought to 80 or lowering oversold to 20 will reduce the number of overbought/oversold readings. Short-term traders sometimes use 2-period RSI to look for overbought readings above 80 and oversold readings below 20.

Stochastic Oscillator (STO)

*1.%K = (Current Close - Lowest Low)/(Highest High - Lowest Low) * 100*

2.%D = 3 - day SMA of %K

3.Lowest Low = lowest low for the look - back period

4.Highest High = highest high for the look - back period

5.%K is multiplied by 100 to move the decimal point two places

Developed by George C. Lane in the late 1950s, the Stochastic Oscillator is a momentum indicator that shows the location of the close relative to the high-low range over a set number of periods. According to an interview with Lane, the Stochastic Oscillator “doesn’t follow price, it doesn’t follow volume or anything like that. It follows the speed or the momentum of price. As a rule, the momentum changes direction before price.” As such, bullish and bearish divergences in the Stochastic Oscillator can be used to foreshadow reversals. Lane identified this first, and most important, signal. Lane also used this oscillator to identify bull and bear set-ups to anticipate a future reversal. Because the Stochastic Oscillator is range bound, is also useful for identifying overbought and oversold levels. The Stochastic Oscillator measures the level of the close relative to the high-low range over a given period. Assume that the highest high equals 110, the lowest low equals 100 and the close equals 108. The high-low range is 10, which is the denominator in the %K formula. The close less the lowest low equals 8, which is the numerator. 8 divided by 10 equals .80 or 80%. Multiply this number by 100 to find %K %K would equal 80 if the close were at 108 (.80 x 100). The Stochastic Oscillator is above 50 when the close is in the upper half of the range and below 50 when the close is in the lower half. Low readings (below 20) indicate that price is near its low for the given time period. High readings (above 80) indicate that price is near its high for the given time period. The IBM example above shows three 14-day ranges (yellow areas) with the closing price at the end of the period (red dotted) line. The Stochastic Oscillator equals 91 when the close was at the top of the range. The Stochastic Oscillator equals 15 when the close was near the bottom of the range. The close equals 57 when the close was in the middle of the range.

Simple Moving Average (SMA)

1. *Daily Closing Prices* : 11,12,13,14,15,16,17

2. *First day of 5 - day SMA* : $(11 + 12 + 13 + 14 + 15) / 5 = 13$

3. *Second day of 5 - day SMA* : $(12 + 13 + 14 + 15 + 16) / 5 = 14$

4. *Third day of 5 - day SMA* : $(13 + 14 + 15 + 16 + 17) / 5 = 15$

A simple moving average is formed by computing the average price of a security over a specific number of periods. Most moving averages are based on closing prices. A 5-day simple moving average is the five-day sum of closing prices divided by five. As its name implies, a moving average is an average that moves. Old data is dropped as new data comes available. This causes the average to move along the time scale. Below is an example of a 5-day moving average evolving over three days. The first day of the moving average simply covers the last five days. The second day of the moving average drops the first data point and adds the new data point. The third day of the moving average continues by dropping the first data point and adding the new data point. In the example above, prices gradually increase from 22.2 to 24 over a total of seven days. Notice that the moving average also rises from 22.4 to 23.6 over a three-day calculation period. Also, notice that each moving average value is just below the last price.

Money Flow Index

1. *Typical Price* = $(High + Low + Close) / 3$

2. *Raw Money Flow* = $Typical Price \times Volume$

3. *Positive Money Flow* = *Sum of positive Raw Money Flow over 14 periods.*

4. *Negative Money Flow* = *Sum of negative Raw Money Flow over 14 periods.*

5. *Money Flow Ratio* = $(Positive Money Flow) / (Negative Money Flow)$

6. *Money Flow Index* = $100 - 100 / (1 + Money Flow Ratio)$

The Money Flow Index (MFI) is an oscillator that uses both price and volume to measure buying and selling pressure. Created by Gene Quong and Avrum Soudack, MFI is also known as volume-weighted RSI. MFI starts with the typical price for each period. Money flow is positive when the typical price rises (buying pressure) and negative when the typical price declines (selling pressure). Typically, MFI above 80 is considered overbought and MFI below 20 is considered oversold. Strong trends can present a problem for these classic overbought and oversold levels. MFI can become overbought (>80) and prices can simply continue higher when the uptrend is strong. Conversely, MFI can become oversold (<20) and prices can simply continue lower when the downtrend is strong. Quong and Soudack recommended expanding these extremes further qualify signals. A move above 90 is truly overbought and a move below 10 is

truly oversold. Moves above 90 and below 10 are rare occurrences that suggest a price move is unsustainable.

Commodity Channel Index

1. $CCI = (Typical\ Price - 20 - period\ SMA\ of\ TP) / (.015 \times Mean\ Deviation)$

2. $Typical\ Price\ (TP) = (High + Low + Close) / 3$

3. $Constant = .015$

Developed by Donald Lambert and featured in Commodities magazine in 1980, the Commodity Channel Index (CCI) is a versatile indicator that can use to identify a new trend or warn of extreme conditions. Lambert originally developed CCI to identify cyclical turns in commodities, but the indicator can successfully applied to indices, ETFs and other securities. In general, CCI measures the current price level relative to average price level over a given period. CCI is relatively high when prices are far above their average. CCI is relatively low when prices are far below their average. In this manner, CCI can use to identify overbought and oversold levels. As noted above, the majority of CCI movement occurs between -100 and +100. A move that exceeds this range shows unusual strength or weakness that can foreshadow an extended move. Think of these levels as bullish or bearish filters. Technically, CCI favors the bulls when positive and the bears when negative. However, using a simple zero line crossovers can result in many whipsaws. Although entry points will lag more, requiring a move above +100 for a bullish signal and a move below -100 for a bearish signal reduces whipsaws.

Data

This paper applies this process to 10 listed Dowjohns companies for evaluation, namely, Yahoo, Facebook, Google, Apple, Microsoft, General Electric, Coca Cola, Cisco, Boeing and Bank of America. Data include 13200 daily prices “between (2009) to (2014)”.

Research Methodology

1. **T-Test:** It can use to determine if two sets of data are significantly different from each other, and is most commonly apply when the test statistic would follow a normal distribution if the value of a scaling term in the test statistic known.

$$t = \frac{\bar{y}_1 - \bar{y}_2}{\sqrt{s_y^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

2. **TOPSIS:** TOPSIS based on the concept that the chosen alternative should have the shortest geometric distance from the positive ideal solution and the longest geometric distance from the negative ideal solution

Step 1: Calculate the normalized decision matrix. The normalized value r_j is calculated as follows:

$$r_j = x_j \sqrt{\sum_{i=1}^m x_i^2} \quad i=1, 2, \dots, m \text{ and } j = 1, 2, \dots, n.$$

Step 2: Calculate the weighted normalized decision matrix. The weighted normalized value v_j is calculated as follows:

$$v_j = r_j \times w_j \quad i=1, 2, \dots, m \text{ and } j = 1, 2, \dots, n. \quad (1)$$

Where w_j is the weight of the j^{th} criterion or attribute and $\sum_{j=1}^n w_j = 1$.

Step 3: Determine the ideal (A^*) and negative ideal (A^-) solutions.

$$A^* = \{(\max_i v_{ij} | j \in C_b), (\min_i v_{ij} | j \in C_c)\} = \{v_j^* | j=1, 2, \dots, m\} \quad (2)$$

$$A^- = \{(\min_i v_{ij} | j \in C_b), (\max_i v_{ij} | j \in C_c)\} = \{v_j^- | j=1, 2, \dots, m\} \quad (3)$$

Step 4: Calculate the separation measures using the m-dimensional Euclidean distance. The separation measures of each alternative from the positive ideal solution and the negative ideal solution, respectively, are as follows:

$$S_i^* = \sqrt{\sum_{j=1}^m (v_j - v_j^*)^2}, j = 1, 2, \dots, m \quad (4)$$

$$S_i^- = \sqrt{\sum_{j=1}^m (v_j - v_j^-)^2}, j = 1, 2, \dots, m \quad (5)$$

Step 5: Calculate the relative closeness to the ideal solution. The relative closeness of the alternative A_i with respect to A^* is defined as follows:

$$RC_i^* = \frac{S_i^-}{S_i^* + S_i^-}, i = 1, 2, \dots, m \quad (6)$$

Step 6: Rank the preference order.

	ST.D	NT	NF	MIN	MAX	MEAN
RSI	0.0045	357	142	-0.042	0.797	0.55
CCI	0.0041	400	306	-0.033	1.19	0.52
MFI	0.0057	277	159	-0.031	0.854	0.46
SMA	0.0048	320	135	-0.036	0.601	0.47
MACD	0.0047	223	120	-0.031	0.549	0.48
STO	0.0039	418	203	-0.029	1.28	0.59
	MIN	MAX	MIN	MAX	MAX	MAX
WEIGHTS	1	1	1	1	1	1
IDEAL	0.0039	418	120	-0.029	1.28	0.59
THE WORST	0.0057	223	306	-0.042	0.549	0.46

We use T-Test statistical criteria for ranking and comparing Indicators

- **ST.D** : Standard Division
- **NT** : Number of True and Profitable Investment Signals
- **NF** : Number of False and Unprofitable Investment Signals
- **MIN** : Minimum Rate of Return
- **MAX** : Maximum Rate of Return
- **MEAN** : Average Rate of Return

	ST.D	NT	NF	MIN	MAX	MEAN
RSI	0.0012	-134	164	0	-0.248	-0.09
CCI	0.0016	-177	0	-0.009	-0.641	-0.06
MFI	0	-54	147	-0.011	-0.305	0
SMA	0.0009	-97	135	-0.006	-0.052	-0.01
MACD	0.001	0	186	-0.011	0	-0.02
STO	0.0018	-195	103	-0.013	-0.731	-0.13
NORMA	0.0030083	315.65012	334.56688	0.0229783	1.0499881	0.1705872

NORMED MATRIX						
	ST.D	NT	NF	MIN	MAX	MEAN
RSI	0.3988935	-0.4245207	0.490186	0	-0.2361932	-0.5275893
CCI	0.531858	-0.5607474	0	-0.3916747	-0.6104831	-0.3517262
MFI	0	-0.1710755	0.439374	-0.4787136	-0.2904795	0
SMA	0.2991701	-0.3073023	0.4035068	-0.2611165	-0.0495244	-0.058621
MACD	0.3324112	0	0.5559426	-0.4787136	0	-0.1172421
STO	0.5983402	-0.6177726	0.3078607	-0.5657524	-0.6961984	-0.7620735

WEIGHTED NORMED MATRIX								
	ST.D	NT	NF	MIN	MAX	MEAN	TOTAL	RESULT - RANK
RSI	0.39889	-0.42452	0.49018	0	-0.236193	-0.5275893	0.6907586	2
CCI	0.531858	-0.56074	0	-0.391674	-0.610483	-0.3517262	0.3655402	5
MFI	0	-0.17107	0.43937	-0.478713	-0.290479	0	0	6
SMA	0.299170	-0.30730	0.40350	-0.261116	-0.049524	-0.058621	0.5420576	3
MACD	0.332411	0	0.55594	-0.478713	0	-0.1172421	1	1
STO	0.598340	-0.61777	0.30786	-0.565752	-0.696198	-0.7620735	0.5225867	4
IDEAL	0.598340	0	0.55594	0	0	0		
THE WORST		-0.61777	0	-0.565752	-0.696198	-0.7620735		

Results and Conclusions

In this paper, the aim is to rank Technical analysis indicators while considering advantages of some of the important ranking methods, existing in literature. As each of existing ranking methods have some major benefits that other do not have and the Fact that it is not possible to gather all these advantages in a united model, thus is seems significant to provide a new ranking method which considered all the good aspects of these models. In doing so, MCDM method is considered. As regards of the obtained ranking orders form deferent ranking models and a matrix of weights, corresponds to the deferent property of these methods, TOPSIS is accounted for in order to consider deferent aspects of these methods and a new Method introduced. For further research on this subject, other aspect of MCDM technique can also be accounted for in order to obtain a new ranking order on basis of the existing ranking methods.

We have to compare the returns for all the filters of each stock and the return of “average market return rate”. The filter that generates the maximum return among all is calling the optimal filter for that stock. The summary of results for this sub-period is described that According to the results of the TOPSIS in order; MACD with a mean of (1), RSI with a mean of (0.69), SMA with mean of (0.54), STO with a mean of (0.52), CCI with a mean of (0.36) and MFI with a mean of (0) stand after each other’s in the list.

1. **MACD with a mean of (1.00)**
2. **RSI with a mean of (0.69)**
3. **SMA with a mean of (0.54)**
4. **STO with a mean of (0.52)**
5. **CCI with a mean of (0.36)**
6. **MFI with a mean of (0.00)**

The results provided strong support for the technical indicators. According to confidence level, %95 all the technical analysis indicators used in this research can find profitable trading prices and all the returns are more than zero.

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BOOK REVIEW

Gordana Đ. Radović

FINANCING AGRICULTURE IN THE REPUBLIC OF SERBIA

Andrejević Foundation, Belgrade, 2014
(Monograph) 2014

Gordana Đ. Radović

FINANSIRANJE POLJOPRIVREDE U REPUBLICI SRBIJI

Zadužbina Andrejević, Beogra, 2014
(Monografija) 2014

The monograph under the title „Financing Agriculture in the Republic of Serbia“ by Gordana Đ. Radović, represents a significant contribution to the local scientific and technical literature, which investigates the complex problem of financing the agriculture. The monograph is the result of further and advanced research initially conducted within the Master’s thesis: Modalities of financing agriculture in the transition period, which the author defended in 2009 at the University of Novi Sad Faculty of Economics, under the mentorship of Prof. Dr. Nenad Vunjak. The monograph gives an overview of the former, the current and the proposed potential method of financing the agriculture in the Republic of Serbia, which is based both on the European experience and the local specificities. The author points out that the issue of funding is the biggest, the most complex and ongoing problem of agriculture in the Republic of Serbia. The essence of this problem is the disproportion between the financial investment in agricultural development and its contribution to the gross domestic product for the entire (pre) transition period. By the term „agriculture“ the author implies the multifunctional agriculture, which in addition to primary agricultural production, includes all the accompanying activities. Solving the problem of financing the multifunctional agriculture would create opportunities for development, increase employment and stop the migration from rural to urban areas.

The first chapter of the monograph gives an overview of the biological and socio-economic specificities of agriculture, as well as its importance and the details of its financing in the Republic of Serbia. Based on the analysis, the author concludes that the primary agricultural production, i.e. agriculture in its essence, still makes the key activity of the local agricultural producers, while the micro-agribusiness sector along with the multifunctional agriculture remain underdeveloped. The author emphasizes that the economic position of agriculture, analyzed through the primary market distribution in the entire pre-transition period, was rather poor because of the depressed prices policy of the agricultural products, inconsistent agricultural policy, political reasons, hyperinflation, all of which had an effect on the complexity of the overall issue of financing the agriculture.

The second chapter deals with the experience from abroad which, as seen by the author, can be applied in the potential concept of financing the agriculture in the Republic of Serbia. These are the models of financing agriculture in the United States of America and in the European Union. The system of financing the agriculture in the USA is mainly based on agricultural loans, approved under favorable conditions by specialized financial institutions whose management is predominantly consisted of farmers. The model of financing the agriculture in the EU Member States is mainly based on incentive grants (subsidies).

Support of the state in financing the agriculture in the Republic of Serbia in the pre-transition and transition period is presented in the third chapter of the monograph. The analysis covers the financing from the primary issuing of the Central (National) Bank, from the state (agrarian) budget and the budget of the Autonomous Province of Vojvodina. This chapter also presents the normative framework for financing the agriculture from the agricultural budget. The current models of financing agriculture in the Republic of Serbia are presented in the fourth chapter. In addition to the commercial bank loans, they include the specific loan support of the Ministry of Agriculture. The author notes that investments in agriculture did not have a significant participation in the credit portfolios of the commercial banks in the early transition period, while their growing interest is noticed in the last decade. This is the result of the arrival of foreign banks to our banking market, whose business is significantly influenced by agricultural loans. The importance of the specialized state financial institutions is presented in the fifth chapter, while the sixth chapter deals with the role and importance of leasing in financing of the agriculture in the Republic of Serbia.

Feasible models of financing agriculture in the Republic of Serbia are presented in the last chapter and include: securities, derivative securities, EU pre-accession funds, as well as the specialized agricultural bank, whose foundation is strongly supported by the author. The author emphasizes the necessity of creating a normative framework, development of the financial markets, and a continual development and education of agricultural entities for the effective use of securities in financing of agriculture.

A specialized agricultural bank should incorporate all the existing methods of financing agriculture from the state budget. By analyzing the origin of the banking sector on a global scale, the author concludes that many of today's successful universal banks were founded as specialized agricultural banks. An example of a domestic specialized financial institution for financing agriculture is the Privileged Agrarian Bank, established in the Kingdom of Yugoslavia in 1929. The foundation and operating of a specialized agricultural bank need to be regulated by a special law. The initial capital of such a specialized financial institution could also be ensured through the means collected by leasing of state-owned agricultural land. These funds are potentially significant and yet untapped sources of agricultural funding. The authors states that it is only natural that the funds collected from exploiting the most important, state owned, agricultural production resources, „return“ as a source of funding for agriculture, which is undoubtedly an economic activity of national interest.

The author concludes that financing the agriculture in the Republic of Serbia, on its current (under)developed level, should be implemented with the strategic and financial support from the state. The conclusion is based on the importance of agriculture for the national economy and employment rate, availability of the production resources, but also on the fact that agriculture is financially supported in the developed economies. With this goal, the author proposes the establishment of a specialized agricultural bank, whose placements would, according to the concept proposed, facilitate implementation and pre-financing of the projects from the EU pre-accession funds. Introduction of the securities and financial derivatives into the agriculture financing system of the Republic of Serbia would provide better loan conditions, more equitable risk sharing agricultural production, stability of prices of the agricultural and food products, as well as profitability and accumulation of this important economic activity.

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BOOK REVIEW

Prof. dr Dragoslav Slović

A LOT OF PEOPLE WOULD LIKE TO DETERMINE OUR NATIONAL INTERESTS

(“Serbian national interests”, Plato-books and Kosmos, Belgrade 2010)

Проф. др Драгослав Словића

МНОГИ БИ ДА ОДРЕЂУЈУ НАШЕ НАЦИОНАЛНЕ ИНТЕРЕСЕ („Српски национални интереси“, Плато-боокс и Космос, Београд 2010)

In recently published paper “Serbian national interests” by prof. Dr. D. Slovic, the author is committed to finding answers to the question: Serbian national interests? and rightly points out that anyone who decides to create and publish any paper has owes to the reader, and to himself, to ask himself: Who is it intended for?

This question, it seems, was present at all stages of the writing of this paper, a profound belief that it is necessary for our people, but not the conviction that it is enough. The author stands for understanding that the national interests of all, including our people, are the field that needs to be contributed by the cleverest people, as a debt to their ethnicity, and for themselves.

At the same time, he did not for a moment doubt in whether the thinking under the above heading is necessary to our people at this time, but there is confusion since to this topic with us directly no scientific paper had been dedicated, at least not under this. Exceptions are headings, he says, “Nacertanije” by Elias Garasanin “Memorandum” of the Serbian Academy of Arts and Sciences, but their fate was to have remained unfinished and incomplete, and that our public and not so long ago (before our eyes) , suffered a shameful interpretation of people who are not worthy to deal with them. Namely, in the ideologized interpretation of fawning publicists turned out that both titles were political pamphlets with hostile content and to harm the Serbian people, and says that if this paper experiences similar fate, he will have the pleasure and honor to be among the people who deserve respect and admiration.

Concluded her elementary guiding idea, which motivated the author to write about this, is the fact that every normal human mind must notice: “For centuries, the evil specter hovering over the skies of Serbia” - the specter of division and discord. See this specter, and to stand still is an act of discouragement for every honorable man who belongs to this nation. And many ordinary people, even those with low education - drinking with their friends a bottle of beer in front of some rural grocery store, have a clear knowledge about it. Their reviews on this issue are clear and precise, but their power to fight this evil is too small. And these very people, without much reasoning, all see and recognize clearly, can and must be a landmark in the fight against this evil.

Otherwise, he says: “Serbia has languished whenever divided inside when the Ober-chiefs and mayors separated and wanted to be great when the small can in an

ambush, or poisons, destroying large. And always, after every nobles rank Dusan the Great came to the brotherhood of small lords who wanted big power and privilege that it brought, and those little lords have always been, and still are, the fate of the Serbian people and not to them is the evil that embodies the bloody specter. The only thing the small nobility in Serbia has always agreed upon is to destroy the one who has the biggest part and is the best of them. “That way ran our past, and such is the reality of Serbia today. This will be in the future if we do not have enough wisdom to eradicate this evil, to recognize and isolate effective remedy, and the most effective “vaccine” to combat this evil is the knowledge and ability of the nation to recognize it and until it does not recognize reason there is no possibility to isolate and expel the evil from our being.

It seems that the ultimate aim of the author’s study is to contribute to the clarification of our reality and the right direction on our ways - we must not allow ourselves to evil spirits water into a tailspin, without even recognizing. This problem is far greater than what we see today, so the paper should be understood as a kind of invitation to Serbian minds that this theme of their languor should be transferred into the focus of our interest.

The paper topic makes association that it could be a nationalist literature, but such ideas in it can only be seen malicious by man. Such ideas today may represent a darkened mind, unable to recognize the global processes and global flows in them. Time of nationalism is finally behind us, especially when it comes to small nations, and today there are few among all that have less than a hundred million people, with the exception of some who (like the English) imposed in the world as a great power, although objectively they are not. The author is not convinced that some of these nations who have far larger populations than this number feel great.

Globalization is a process that is as pandemic spreading around the world, which in its nature is unstoppable and does not follow the desire of individual nations. Small nations are the first beast that it will lawfully take, but the Issue is not whether this process is going and whether it is fair, but whether it gives everyone an equal chance

Nationalism is the worst collaborator and the largest burden of those who see the future of their nation, no matter how large. To small it reduces the already small “equal opportunities” and increases labor pains brought about and just enjoying the great flows. Thus, nationalists are in this time enemies of their people, but the loss of national consciousness even greater evil.

The solution, therefore, is in the articulation of national consciousness, but not to limit its overheating chauvinism. Because, true patriotism today is not the awakening of national feelings on the line negation of all the values of modern civilization, but within a reasonable awakening of national consciousness or, more precisely, the national conscience. On this issue could be developed and the opposite view, according to which acceptance of the decadence of the modern world is the evil that should be bravely resisted. It follows a logical conclusion to be resisted and all forms of mental decadence of humanity, which thus covers.

No matter how much it may pursuant to that, the car continues, we must understand a great truth, that every cultural plant less resistant weeds from those which are not cultivated. Similarly, only a little different, and high civilization carries diseases that only its own and there is no effective defense mechanisms against them. And we are, apparently, can not be avoided, and we will overcome the - even if you do not want to, because by joining these processes we can not Between one the pandemic precisely

because the modern world is not built defense mechanisms of the evils that are turned against the man. And, if we are powerless to fight such evil, then at least we have to accept, but the way to us what is possible from brushes. But unless we gathered around unique national targets will disappear in globalization as wisps of fog disappeared on the mountain peaks after heavy rains.

The question therefore, according to the author, does not arise in the form of “if” but in a far more complex form - “how?”. For these reasons, this paper is an attempt to take on the great heap of our wisdom on this issue added even one pebble that could be of use. Scholars have long been known attitude that sometimes good question is a major contribution for obtaining a valid response. The only thing is the author of this part safe, it has to set a good and pertinent question, and at the right time, perhaps at the last minute.

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IN MEMORIAN

ON THE TENTH DEATH ANNIVERSARY OF ŽIVORAD ZLATKOVIĆ, PHD

Professor Zlatkovic proved himself an outstanding representative of economics studies on many occasions taking part in numerous debates. He would shine after tough debates on the amendments on the 1974 FRY Constitution. He clearly stated what was wrong with these amendments at the counselling meeting of the Yugoslav marketing association in Dubrovnik. This meeting was the top performance of his impossible to be repeated in any similar form. Although there were other meetings held following this Dubrovnik one, they were impossible to be even compared with it. Unlike other professional associations, economists gathered together many times to discuss the 1974 FRY Constitution amendments.

Young professionals who unfortunately did not have an opportunity to meet professor Zlatkovic can get to know him through the new wave economics papers. He could easily take part in tough debates on our economic reality now as he used to. He frequently met and had discussions with the following contemporaries in the field of economics: Vezjak, Milanovic, Milisavljevic, Obraz, Petkovski, Roko, Vucenovic, Radunovic ect. His inner personal strength in communication free of any problem ignoring was always expressed through the rational view at the cosmopolitan in modern economics.

Professor Zlatkovic never took sides; he was always lonely in his devotion to wise economics postulates. He was a high-caliber economist; you can randomly open any of his books and find out the beauty of his economics expression. Professor Zlatkovic was paradoxically immersed in the tradition of the FRY marketing modernism being at the same time the citizen of the world. He realized the significance of the changes that were to occur in the existing system.

At the time of forming the multi-party system, before political parties become tools for coming to power, a lot of gifted people excellent in their field of expertise were lured into politics. It was honourable to put your skills and knowledge at the service of the people and the country and help build a new society and different country. One of these people was professor Zlatkovic. His confirmed and proved knowledge and expertise did not need any politics but the politics needed his knowledge and expertise.

This professor, well-known to the Yugoslav public, is a unique person in the history of economics. He devoted his entire life to the scientific, research and pedagogical work, setting the milestones of the economics mission in our country. He was a careful analyst of all important events putting his observations in a few extremely significant books without which the history of Yugoslav economics would have remained in the total oblivion. He was devoted to developing the theory of trade and marketing economies taking part in numerous international and national debates on these issues. Apart from other titles, he managed to publish his tenth book Trade Economy.

Writing about franchise became the reason for our intensive work. Everything started in Brzece at the foot of Kopaonik more than twenty years ago when we were supposed to put a new attire on our profession after a number of law propositions for the transformation of the public property in Serbia. This cooperation gave us the book *The Franchise*. It was appreciated and supported by people who could use it.

In the process of the transformation of public property into its other forms, professor Zlatkovic was a sheer perfectionist. He wanted a short, clear, extra words free formulation. He wanted a sharp, filled with meaning form for which he would say - I have heard this expression somewhere. It is supposed to ‘ring’.

In our joint work and professional debates we spent a lot of time in search for the right word. That search meant the real word hunting. So while I was trying to produce a piece of writing in memory of my dear colleague Zlatkovic, I was almost sure to have heard his sharp almost angry voice: ‘It’s not good, you got carried away talking. Make it shorter, make it clear.’ It seems as though Zlatkovic planned his life not to be too long, thinking that a long life is like a long text on economics – prolix and empty, monotonous and boring. I owe it to my dear colleague Zlatkovic that every lengthy sentence or wordy writing and speaking strike me as a warning. I learned from Zlatkovic to be short with words as a virtue of a good author as well as to drink good red wine. I am just putting down a glass of wine on my desk – let his late soul be serene. Rest in peace, my dear colleague Zivorad Zlatkovic.

Prof. dr Borivoje B. Prokopović

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Име аутора (Font size 10 Normal) Times New Roman (SR-Cyrilic)
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Abstract

Tekst apstrakta na engleskom ili na nekom drugom jeziku...

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