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Editorial

Dear readers.

That's a great pleasure for me to introduce you new issue on International Journal of Entrepreneurial Knowledge, which includes the four interesting research papers. In last months we have indicated the increasing interest for publication in our journal from different countries of the world. We are very pleased that we have succeeded in establishing the high quality journal, which covers the different fields of entrepreneurship, which is one of the most developing fields of scientific research. Our journal tries, from its first issue to contribute to the discussion in this field. In present conditions it is very hard to succeed in competition of thousands different research journals all over the world and get attention of the authors.

Current issue includes nine interesting research studies, which I hope, will contribute to the extension of the knowledge in the field of entrepreneurship. I would especially like to thank to our editorial board members, prof. Zelený and prof. Rubinstein, for their comprehensive articles. We have also decided to include interesting paper which focuses on the comparison in two rugby leagues, which in fact doesn't accurately fit to the journal scope, but brings the untraditional focus on specific sport field.

To conclude, let me state, that we work on increasing quality of the journal, and expect the soon indexing of our journal in SCOPUS database, which could dramatically extend the impact of the journal.

Your Editorial Board

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THEORY OF PATRONIZED GOODS. LIBERAL EVOLUTION OF PATERNALISM

Aleksandr Yakovlevich RUBINSTEIN¹

ABSTRACT

The neo-classical principles of rational behavior are considered in the context of the nature of paternalism as the basis of the Theory of patronized goods. The formation of society's normative interests is discussed in concern of political aspects. The article illustrates the theoretical and the practical aspects of the concept of consociation democracy, providing liberalization of the institutions for making political and economic decisions. The results of analysis reveal a pattern of paternalism drifting towards institutional liberalization. Proposed a hypothesis explaining why the economic policy in modern Russia still remains somewhere between archaic and merit paternalism.

KEYWORDS

patronized goods, rational behavior, merit paternalism, consociational democracy

JEL

C70, C72, D5, D6, D7, H41, Z28.

INTRODUCTION

Let me start from a preliminary note. In the present article the author attempts to combine a number of issues being the author's fields of research for the last 10–15 years to work out a common approach to create economic methodology of social liberalism. The idea is to further develop a concept of economic sociodynamics based on the complementary utility principle, postulating the social needs *per se* (Grinberg, Rubinstein (2005)), the Theory of patronized goods (Рубинштейн (2008, 2009a, 2009б)), giving reasons for normative component of the social needs, and the institutions of market and political branches in making decisions concerning the social interest ((Рубинштейн (2011, 2012); Rubinstein (2013b); Гринберг, Рубинштейн (2013)).

Considering the development of the theory of patronized goods – from the principles of economic sociodynamic to the methodology of social liberalism – it is necessary to consider its basis, pointing out its special features and position in the economic theory. It is important to remind its key theses, and to show the positions it is ready to accept, as well as to give up (as opposed to the previous research) the following premises:

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- it gives up neo-classical principle of rational behavior and accept the Austrian methodological subjectivism (*Machlup (1982)*);
- it gives up individualistic individual irrationality principle and accept individual behavior outside estimation having its own system of preferences (*Grinberg, Rubinstein (2005)*);
- it gives up the idea of philanthropic state and accept the standards of the ruling party ideas (*Laffont (2000)*).

➤
The present work continues the theoretical discussion about the theory of patronized goods, and it continues the discussion of theoretical issues in the articles «The theory of patronized goods in the optics of comparative methodology» (*Rubinstein (2013b)*) and «Social Liberalism: the problem of economic methodology» (*Рубинштейн (2012)*), which opened the discussion in the Russian-language journal «*Social Sciences and Modernity*» («*Obshchestvennye Nauki I Sovremennost'*»). This subject was the main topic at the XIVth International Annual Conference «Leontieff Readings» (St. Petersburg, February 2015), where the author made a plenary report: «The theory of patronized goods and paternalism in economic theories: general and the specialties» (*Рубинштейн (2015a)*).

The debate, which took place in the «*Social Sciences and Modernity*» turned into a discussion of the state activities' motives that touched different aspects of theoretical economics. I emphasize that from the point of view of philosophy and methodology of economics, the discussion had again put forward the ideas of economic freedom and paternalism² and its normative content. If you narrow paternalism to the boundaries of patronized goods, leaving aside the traditional (for this category) patriarchal aspects of state "paternal care" for its citizens, while avoiding both the negative connotation of the given concept and its social interpretation in the context of "social protection" or "support to the social sphere", the state activities *per se* remain in the center of research.

At the same time in contrast to the followers of classical liberalism, the supporters of its social variant, keeping their market economy positions, rightly state that it is not enough for the citizens to take their own effort to get their rights respected.

The economic philosophy of social liberalism is based on the very same notions about the economic systems as the concept of economic sociodynamics and the theory of patronized goods. According to these theories individuals willing to have their interests respected have to cooperate with each other and with the government, the late being responsible for realizing the interests of individuals and of a society as a community.

Here we find the *generic features* of the economic methodology of social liberalism supporting the individual initiative and the state activities with the aim to have the interests of an individual and a society implemented (or respected).

One should pay attention to the very special question, that clarifies the connection between state activities and paternalism: are there any state activities not connected with paternalism? From the point of the theory of patronized goods, this issue has no sense at all, as any state intervention in market relations, including the implementation of its economic, social or other policies basically has always certain normative "pater" settings. And in the context of this article, it does not matter what they are due to: the outcomes from the macroeconomic models, the pure political decisions, caused

² See the critical analysis of John Locke (*Locke J. Works in 3 vol. Vol. 3. Moscow, 1988*). Note that the term "paternalism" appeared at the close of the XIX century (*Pique de Bry (1980)*). It appeared again when the concept of paternalism was observed at the close of the XX century for the description of a special type of social and labor relations (*Debouzy (1988)*, *Noiriel (1988)*, *Темницкий (2015)*) and in the framework of behavioral economics, that proposed the concept of a libertarian or a new paternalism (*Sunstein, Thaler (2003, 2008)*; *Camerer et al. (2003)*). See also (*Лефевр (2008)*, *Капелюшников (2013)*).

by the corresponding value preferences or the other reasons, including the tasks to liberalize economy.

The theory of patronized goods examines various aspects of the state economic activities concerning the market failures, public and merit goods, including the "Baumol disease" argument, etc. (Рубинштейн (2009), Rubinstein (2012, 2013a)). Concerning the repeating market failures and regular state failures, there are no conditions in the world for the self-regulatory mechanisms to work without failures, as well as there are no right state decisions that would eliminate the market failures and realize public interests. I will add that public goods always remain a motive for the state activities. Apparently, "the educational" state drive to bring the behavior of individuals to the certain socially desirable norms, will also never disappear (Якобсон (2016)), that the empirical studies of the merit goods and libertarian paternalism repeatedly confirm.

There is no appeal to paternalism in my reasoning (Тамбовцев (2014, с. 33)). These are the theories that explain the state activities, understanding that they always have a normative character, but these activities are not always aimed at the increase of a wealth of society (public welfare) and aggregated welfares of individuals. The situation is unlikely to change with a particular development scenario as well, when the individual, the state and the market will evolve according to the "collaborativism" (Полтерович (2015, с. 45–47)). Even in this optimistic case, it is probably impossible to do without the state activities that would take some other forms as well.

In other words the state activities, having a paternalistic content by its very nature, will forever remain the element of economic relations, and will never disappear, except, perhaps, in the dreams of anarcho-syndicalists and the followers of political individualism (Шумпетер (1954)) or in the abstract models, where a set of certain *ideal* conditions is accomplished. At the same time, neoclassical theory, and its rigid basic conditions, does not give a satisfactory description of such state behavior. The search for an adequate explanation is directing us to a revision of its certain basic premises and to modification of the theory itself.

1. IRRATIONALITY AND PATERNALISM

Let me start with a fundamental condition of rational behavior, which combined the Austrian methodological subjectivism, according to which individual preferences are taken for granted, with the non-neoclassical assumption that each individual chooses the best option that optimizes his or her welfare. The rest is done by an "invisible hand", providing the welfare of society, that is by definition presented as an aggregate of individual wealth. If the losses in social wealth happen, they are explained by "market failures" and they account for government interventions to eliminate these losses. I'll not develop this well-known plot, but emphasize the main idea: a fundamental assumption of this theory is a strongly rational behavior of the individuals who maximize their welfare.

Regular critics of this "ideal condition" (*simplifying abstraction*) initiated probably by Thorstein Veblen, have accompanied the present ontological principle throughout its history. The first significant revision of this idea is associated, probably, with the works of John Katona (Katona (1951)), and Herbert Simon (Simon (1955)). H. Simon questioned the ability of people to correctly evaluate their choices (Simon (1955), Саймон (1993)). He also introduced a category "limited rationality" that has been rooted down in the economic literature (Simon (1955, 1957)). Skeptical attitude to "rationality" postulate appeared after Simon's works.

The weakening of this “ideal condition” was found in the theories of public goods and merit goods, and a “taboo” on irrational individual behavior was lifted. The theory of public goods acknowledged these “wrong” decisions only indirectly; that is why Paul Samuelson introduced a term “a false signal about the lack of demand for public good” to explain “free riding” (*Samuelson (1954)*). Richard Musgrave later described the standard cases of irrational behavior in meritotics (*Musgrave (1959)*; *Musgrave, Musgrave, Kullmer (1994)*).

Because of the special properties of public goods, individuals consciously conceal their preferences. As far as meritorious environment is concerned, the distorted signal of the demand (or about the demand) arises from the unrealized irrationality. Skeptical attitude towards the optimizing people behavior, no matter how to determine their interests, will actually bring to meritotics with the clearly expressed *merit paternalism* and interference into consumer preferences (*Musgrave (1959, p.13)*, *D’Amico (2009)*).

In other words, in the theory of public goods and in meritotics, that both allow irrational behavior of individuals, one has to abandon Austrian subjectivism. Accepting the fact of irrational behavior, a researcher has to keep in mind the kind of behavior that could be called rational³. Such dichotomy inevitably leads to the two “valuation standards” and raises insolvable questions within the framework of the initial assumptions: what individual behavior should be considered a “true” preference, and is the actual behavior correlated to the one recognized as rational?

The well-known R. Thaler and H. Shefrin model adds nothing new here; the model postulates “split personality” which means that individual is simultaneously acting the two roles – of a weak-will tempter’s victim (me-executor) and of his or her rational antipode – role of “a Creator’s pride” (me-programmer). If the executor tends to act egoistically and shortsightedly, the “programmer” aspires to implement the long-term and enlightened interests (*Thaler, Shefrin (1981, p. 392–406)*)⁴. No matter how we explain this duality, I emphasize the main idea – the mere fact of lifting the taboos on irrational behavior, means neglecting the principle of methodological subjectivism, and a transition to a multiplicity of “I”, that means actual legitimacy of paternalism aimed at support of that “I” which insures compliance with the normative settings of “pater”.

It is quite natural that the theory of welfare, based on the individual rationality, believes that paternalism undermines the liberal doctrine. This is true to some extent, but only to the extent to which the principle of rational behavior are considered universal. Herewith, at the same time during the last 30–40 years the analytics in behavioral and experimental economy appeared, who (although in the laboratory) got a lot of empirical confirmations of irrational behavior of individuals. As a result by the beginning of XXI century there was quite a collection of behavior “anomalies”, demonstrating individuals, who has occasionally made a mistake, but are also regularly making mistakes (*Kahneman, Tversky (2000)*, *Thaler (2000)*, *Канеман, Тверски (2003)*, *Павлов (2007, 2011)*, *Капелюшников (2013)*).

³ Giovanni Dosi paid attention to the same point in a somewhat different context: I do not like the term “bounded rationality”, it contains an allusion to a kind of “Olympic rationality”, from the heights of which we can judge how “limited is “what is limited” (*Dosi (2012, p. 40)*). It should be noted that the Austrian subjectivism rejects the notions of rationality and irrationality. “Human activities are always necessary to be rational. The concept of “rational action” is redundant and as such should be discarded” (*Музес (2005, с. 22)*).

⁴ Published in “workbooks” (*Shefrin, Thaler (1978)*), this model dates back to an earlier study, where Richard Shiffrin and Walter Schneider, considering the hypothesis about the availability of two cognitive systems in humans, discovered “the struggle of mind with intuition”, which is a prototype of the future models with multiplicity “ME”» (*Schneider, Shiffrin (1977)*).

The new situation required an explanation of empirical facts that did not fit within the boundaries of the standard theory. It should be noted however that in this area behavioral economists merely continued the meritorious argumentation (*Лубман (2013, с. 32, 38)*), based on the multiplicity of "I" reinforcing these arguments and turning them into their main methodological technic (*Thaler, Shefrin (1981), Sunstein, Thaler (2003)*). In other words, they also followed the track of rejecting the principle of "methodological subjectivism", thereby retaining and developing paternalistic trend in attempts to settle the contradiction between the theoretical assumption of rationality and the realities of irrational behavior.

I do not want to overestimate the scale of changes in the methodology of economic science. Some economists still quite reluctant towards revision of the assumption of individuals' rational behavior. The criticism of rationality on the part of meritorics and behavioral economics indicates some exceptions in the models of rational choice that, in terms of these theories, still need a deeper analysis and a new theoretical generalization.

But the main problem here is different, whether it is necessary to abandon the two components of *rationality* in explaining individual *irrational* behavior or not. I think it is not. Remaining within the frames of methodological subjectivism with a requirement to take the individual preferences for granted, it is still possible to seek a solution in a *different interpretation* of optimizing behavior. The case is that, from the perspective of methodological subjectivism, an individual is always based on his personal values and tastes, demonstrates the best behavior in specific circumstances. And if such behavior is regarded as irrational or limited rational, it means that an explanation comes from *an external source, on the basis of its inherent standard*. From the point of this source the people may not choose the best option, because of deficiency in knowledge, willpower and resources in meritorics.⁵

At the same time, both meritorics and behavioral economics, and *libertarian paternalism*, that was produced by them (*Sunstein, Thaler (2003, 2008)*), as well as *asymmetric paternalism* (*Camerer et al. (2003)*) proceed from the assumption that the state, aimed at changing the developed circumstances, is able to improve, from the point of "pater", the quality of people's behavior, and to help them realize "the rightly understood interests" as well as to bring their preferences more in line with a certain normative standard. The leading figures of this trend see the main advantage of such a "push" policy («*nudge*») in the fact that it resolves the contradiction between paternalism and the freedom of choice (*Sunstein, Thaler (2003, p. 1188)*). Not completely supporting this statement, I

⁵ I'll digress here for a short comment and I will note that, despite the Austrian verdict, de jure: "In the annex to the ultimate goals of the activities, the concepts "rational" and "irrational" are irrelevant and meaningless "*(Muzec (2005, с. 22))*, de facto Ludwig von Mises confirms the meritorious arguments of irrational behavior "Of course, needless to say, there will always be individuals or groups of individuals, whose intellect is so limited, that they are unable to realize the benefits, that social cooperation provides them with. Moral norms and will-power of the others are so weak, that they cannot resist the temptation to achieve the ephemeral advantages through the actions that are harmful to the smooth functioning of the social system. For individual adaptation to the requirements of social cooperation requires sacrifices. Of course, these sacrifices are temporary and imaginary, since, over and above, they are more than compensated by an incomparably greater benefits of a social life, or benefits, with which life provides in society. However, at a given moment, during the very act of rejection of the expected pleasure, they are painful, and not everyone can realize their future expediency and behave accordingly" (*Muzec (2005, с. 140)*). In the page before Mises writes: "Utilitarian ... does not require from a person to give up his or her own well-being for the sake of society. He recommends him or her to realize what are his or her rightly understood interests" (*Muzec (2005, с.139)*). But still, how to be with those, who cannot realize the rightly understood interests and their future expediency? In this case, shouldn't it be the society that creates the conditions for the individuals to "behave appropriately"?

would like to note that push policy itself (being a tool of meritocracies) creates the conditions, under which an individual, by choosing the best option for himself or herself, implements normative standard, or is at least approaching to it.⁶

These considerations are to be continued and estimated from the point of game theory, which also considers the rationality principle. It is well known, that non-cooperative actions of individuals can bring them to a position that contradicts their individual objectives. However due to the "imperfect" game rules (institutional environment), rational behavior of individuals can lead to welfare losses (*Майерсон (2010, с. 29)*), i.e. to the empirically observed irrationality (Nash equilibrium). Herewith, changes in rules of the game, in accordance with the same paternalistic understanding of "as it should be", will push individuals to choosing such a dominant strategy, which would put their preferences in compliance with normative standard, provided by Pareto efficiency equilibrium.

In other words, Nash's methodology makes it possible with the basic premise of subjective rationality of individuals (as well as the same bases of paternalistic activity), replacing the idea of multiple "I" (inherent to meritocracies and behavioral economics), with a provision about "inefficient institutional environment". Using Nash's methodology allows incorporating of all types of paternalism into the instruments of modernization of the institutional environment. At the same time the question of normative standard definition still remains unsolved, (how to generate "as it should be" knowledge) – the standard which, in fact, defines the character and specific directions of institutional modernization, that pushes individuals towards choosing the "right" strategy.

Let us discuss the initial assumptions of the theory of patronized goods, which claims to generalize the concept of market failures, theory of public goods and merit goods, including libertarian and asymmetric paternalism, including even some aspects of non-cooperative game theory – these are the theoretical constructs directly connected with paternalistic activities of state (*Рубинштейн (2011)*). We need to repeat the basic definition of patronized goods – these are the goods and services, in which the state has a normative interest.⁷ Here, in fact, we can see the relations between the theory of patronized goods and the specified concepts.

Note that, besides the general, there is something special in these theoretical constructions. Following methodological subjectivism in the theory of patronized goods, and considering the individual behavior "as given", I assume that individuals act subjectively rationally, including the situations, described by Musgrave and later by behavioral economists. Thus, at the same time, that in order to explain their behavior, there is no need to resort to an artificial hypothesis of doublethink.

The specific of the patronized goods' theory lies not in denying the preferences duality, but in a different interpretation of its nature. In my view, such a duality comes from the two different subjects with in their preferences, but does not include double thinking of an individual. The situation, described in meritocracies and repeated in behavioral economics: when the individual often is unaware of his or her second thought, but the third party knows about it, – and this party, for the

⁶ In a standard example of behavioral economists, a consumer has a choice between a comprehensive lunch and à la carte menu, (order from the menu). One is silent about the basis a comprehensive lunch is formed (regulatory standard), to which consumer is pushed. Here in the mild form the preferences are imposed on an individual.

⁷ The theory of patronized goods, following meritocracies, analyses such goods as drugs or alcohol an individual demand for which is limited by the state. I will also note that state normative settings not always provide the public welfare. There are too many evidences of that in history. My focus is on the other point. At this point the theory of patronized goods (*Rubinstein (2013b, p. 22–23)*) is virtually the same as the positions of the Austrian school: "The evil from bad ideology, needless to say, is much more destructive for the individual and for the society as a whole, than the drugs" (*Музек (2005, с. 687)*).

sake of individual happiness, stimulates this very idea, suffers a fundamental fail. One principle of the Roman private law states: the wish cannot be claimed unfair – «*volenti non fit iniuria*».

Based on this assumption the theory of patronized goods gave a different interpretation of preferences duality. The basis of this theory is methodological subjectivism, according to which the individual behavior should be interpreted "from an individual point of view – as something what a person craves for, because in his eyes it is desirable" (*Muzec (2005, c. 24)*). At this point the theory of patronized goods allows for an external source of evaluation, an autonomous source of normative standard.

Concluding the discussion of theoretical aspects of paternalism, we return to the famous formula: paternalism appears there, then, and insofar, where, when and since individual behavior is treated as irrational, or the institutional environment in which an individual operates, turns to be inefficient. But the question remains: what is an external source of evaluation, that defines this irrationality and inefficiency; and how the institutions provide for the normative "pater" settings, acting on behalf of society and declaring the preferences as the public interest?

The economic theory examines the two main versions of the public interest. First, it is the market coordination of individual behavior, and the formation of the cumulative (social) interest. Second, it is the autonomous social preference, which is not reduced to the preferences of individuals (*Grinberg, Rubinstein (2005)*). The theory of patronized goods accepts two sources of social preference, – market and polity. So, there are normative settings, that determine the nature and the essence of paternalism (*Rubinstein (2013b, p. 18–19)*).

Considering the state as a "politically aggregated individual" (*Автономов (2014, c. 55)*), implementing normative interest of the society, one should not forget R. Boudon's verdict, who emphasized that these assumptions are valid only in case, if the individual is "... endowed with institutional forms enabling collective decision making» (*Boudon (1979)*). Thus, the obvious factor of a utility function for a "politically aggregated individual" is a certain institutional system, allowing him to take decisions on behalf of the society.

2. DON'T DODGE BEHIND THE MAJORITY

Starting with Aristotle, social and political philosophers were looking for a solution to this problem in the institutions of representative democracy. According to Aristotle, such an institution was "republic"; there the ruling was carried through decisions, the right to make them was delegated to the special people (*Аристотель (1983)*). Those were the ones whom Plato, Aristotle's teacher, called "philosophers" (*Платон (1971, c. 275)*). Much later in the other epoch, Musgrave called those "philosophers" "an informed group of people" (*Musgrave (1969, p. 16)*), and still later Schmidt called them "politicians" (*Schmidt (1988, p. 384)*). Those were individuals who had ideas of "as it should be", and who were able to articulate their views on behalf of the society. Characterizing such people, Aristotle stressed that "participation in the political life – is a privilege of the few are who were equal to each other, but unequal to the other residents of the polis, those were free citizens. «These people, unequal to the other individuals, we shall call the politicians. They as the subjects of collective decisions, will form normative interests for the whole society, later addressed to all "the citizens"».

Considering the normative interests of a society, it is necessary to answer the main question. If a particular interest cannot be represented in the form of aggregate of individuals' preferences in the market branch, what are the mechanisms of its creation in the political environment? Trying to answer this question in discussing the interests of social integrity, I precede from an already

indicated problem – determining factors of the formation of the utility function for a politically aggregated individual. It is quite likely that the understatement of this issue in my previous articles, led to misunderstanding of the concept of economic sociodynamics (the CES) and so misunderstanding of the theory of patronized goods in the economists, attributing almost metaphysical nature to these theories.

The point is that if we consider political branch of the formation of normative interests for a society (justifying their autonomy and not reducing them to the individual interests) as a participant in generation of public interest, revealed by a market mechanism, it all does not mean that the normative preferences of a society are defined by some mystical body. Of course, not. As in case with the market branch, and also in the society's interest *sui generis*, special people are involved, – the politicians – in cooperation between themselves and the current institutions.

Moreover, if in the market environment, an individual is able to evaluate the available alternatives from the point of his or her own benefit, the political branch generates alternatives, associated with the normative understanding of the social welfare. So it is about the "other events". For example, if in the market environment, an individual decides, whether he (or she) would go to the theater or buy apples, in the political environment the politicians face another alternative: what is more important – whether to support familiarizing the population with the theater, or to promote the consumption of fruits. In other words, in the political process of shaping the public interests, in contrast to the market branch, one needs to consider the "other events".

It is necessary to consider the "other behavior" as well, because, unlike individuals, preferences of "politicians",⁸ who are not equal to the individuals, acting on behalf of the society, are caused basically not by the personal, but by the public funds. Many facts⁹ point to the possibility of lower evaluation of the public resources' utility for the people, making decisions about the directions of public expenditures as compared to their own funds. Taking this notion into account, and quite agreeing to the actual state of things, the activity of a state is to implement the normative interests of a society. And this interest is determined by collective decisions of the politicians concerning the features of their individual behavior.

The theory of patronized goods confirms a widespread outcome that any form of paternalism strengthens the state, which, as a rule, is drifting towards "Leviathan" state. Here the state activity may impose losses on individuals and their groups and cause a loss to an aggregate welfare. This situation raises the question about liberalization of the processes of making collective political and economic decisions, and about the redistribution of powers in favor of institutions of civil society. In this article, we consider the institutions, that would weaken the monopoly power of the ruling majority or would not allow its manifestation.

It should be emphasized that collective solutions, generated by the political branch, in contrast to the market mechanisms of self-regulation, should be considered as the result of a discourse, determined by the established institutions and the interests of the power elites, capable of both – bringing closer and move away the public option from the real needs of society (*Тихонова (2013, с. 41–43), Уронов (2014, с.26)*).

⁸ I quote Yacobson, who emphasized "the difference of social policy, which a small circle of property and power resources owners, implements to the majority, – the people deprived of these [resources], as compared to the policy that is carried on the basis of the representation of interests and preferences of the majority, possessing all the resources," *Якобсон (2016, с. 5)*

⁹ This genetic fail in public funds often distorts the politicians' motivation. Many authors write about it, concerning the allocation of the budgetary funds to financing the public goods and the rent, assumed by political and economic elites, both seeking to preserve and even to increase the rent.

The remark, that the "political process has its own logic, in many cases, this logic in many cases does not coincide with the usual logic of optimizing economic mechanisms", is also true (*Радыгин, Энтов (2012, с. 26)*). It should be also noted that in the recent past there dominated the concept of "benevolent (or "beneficent") state", whose activity was aimed exclusively at implementing the actual public interests. But in the second half of the 20th century, a thesis of a displacement of public choice and the associated political decisions in favor of the ruling elites has started playing an increasingly important part (*Stigler (1971)*).

The given conclusion corresponds with another thesis of the theory of patronized goods, associated with a widespread point of view, according to which the true ("authentic") interest of a society always differs from the public choice, realized through the parliamentary procedure (*Лаффон (2007, с. 23)*). In other words, the political elite offers "the action program" correlating with the interests, recognized by the political system, – that is the functioning institutions and individuals, including political and economic elites, as well as the parliament and its powers. These interests are becoming normative interests of the whole society as a result of the relevant collective decisions.

The authors of lots of the articles were examining various aspects of a collective decision-making, including the public choice theory and the new political economy. Their common idea is a parliament as a totality of politicians – as the individuals, participating in decision-making and finding solutions, through various voting procedures (the principle of unanimous voting; the principle of qualified or simple majority). Thus, the parliament with its different factions (groups), formed by the opposition parties, influences only on the process of discussion that precedes the vote, but does not affect its results. So, the parliament is most often considered a totality of the groups of politicians, defining normative interests of the society, corresponding to the majority of deputies' votes.

Here it is necessary to pay attention to a fundamental contradiction, characteristic of the modern political process. On the one hand, every democratic system implies the supremacy of the majority, while on the other – the subordination to the majority is often transformed into "dodging behind the majority".¹⁰ In consent with a preference of "the many" and evading behind these "many", an individual risks to miss the correct choice. The whole of society is at risk: pushed by the democratic majority, it may be out of range of effective solutions. There are many examples to confirm this idea. Often, too often, our history shows an absolute failure to coincide the interests of the "many" to those who were "right".

Here I quote the words of Mises: "Today, even many of those, who support democratic institutions, ignore these ideas. ... They forward the arguments in favor of freedom and democracy, but these ideas are infected with collectivist errors; their doctrines are rather misinterpretations than a support to genuine liberalism. According to their ideas, the majority is always right simply because it is able to crush any opposition; the majority rule is the dictatorial power of the largest party, and the ruling majority should not limit itself, exercising its authority and implementing its policies. Such pseudo-liberalism is completely opposite to the liberal doctrine" (*Мизес (2005, с. 144)*). It is difficult to oppose this, but the problem of institutional liberalization is crucial for the theory of patronized goods, dealing with the paternalistic activities of the state.

¹⁰ "It is not difficult to resist the persuasions and influence of one villain, but when a crowd of them is rushing downhill with an irresistible impetuosity, then failure to appear in a stream is a sign of a noble soul and mind, brought up courageously» (*Philo. De spec. Leg. IV, 45–47 – quotation according to Ковельман (1996, с. 65)*). These words with modern content belong to Philo of Alexandria – a philosopher of 1st A.D. The meaning is important, interpreted by Philo in elliptic form.

Limiting the ruling majority and protection of the opposition minority are the initial guidelines of the theory. It deals with creating the institutional conditions for an individual to keep his voice, and not to «dodge behind the majority».¹¹ More than that: regardless of the mechanisms of forming the public interest, (it may be a private decision of a group leader or a vote of all the members of a group, or a compromise solution of several groups (a coalition)), the public interest is always determined in the form of normative settings. Thus, herewith, the normative interests (according to the level the society and its political system are developed) concern preferences, reflecting the values and ethics, and the other social and economic settings, found in the programs of political parties and public movements of different social groups.

In other words, normative interests, generated by a political branch, are considered the value judgments, generated by "expert on ethics" (Samuelson), or "true preferences» according to the representatives of meritocracy and new paternalism (*Musgrave (1957, 1994), Brennan, Lomasky (1983), Tietzel, Muller (1998), Thaler, Sunstein (2003, 2009)*). But I stress again: adequacy of these value judgements to the interests of society correlates to the level of the development of society and its political system. And most importantly, too often these interests involve the risk of making subjective (wrong) and not always positive (from the point of society) decisions (*Мельник, (2015, с.16)*).

The state activity is aimed at eliminating the market failures, but it will impact the political situation as well. Moreover, this effect, shown by Daron Açemoglu and James Robinson, may be destructive as well, contributing to inefficiency of economy (*Асемоглу, Робинсон (2013, с. 17–19)*). The general provision about insolvency of "the starry-eyed", "idealistic" and widespread thesis that "good economics is also good politics", is correct as well (*Норт, Уоллис, Вайнгаст (2011)*). Note that the parliamentary party (coalition), having the majority of votes, is able to carry through ballot practically any decision in its interests.¹² And it's not just. And it does not matter, whether a parliament is representative and whether its work is properly organized. An important component of electing ("a good parliament") is the decision-making procedure and the institutions, that are behind it (*Мельник, (2015, с. 18)*).

The alternative concepts appeared and later dominated at the end of the century. Among them were the studies by Jean-Jacques Laffont, who emphasizes that, "in spite a domineering of an idea that public interest is the decisive one when choosing a direction of development," there appeared and gained momentum a "theory of interest of groups", with a particular emphasis on their impact in shaping political decisions" (*Лаффон (2007, с. 23)*). Analyzing this trend, Laffont considers an "authentic adviser" to the ruling party, who offers an action program, that increases party's benefits in the current economic and political situation" (*Лаффон (2007, с. 22)*).

In post-communist Russia, and especially in the 2000nd years, this process became especially clear: "...a strong conflict of interests between the public and the elites remains; the consequence of such a

¹¹ According to N. Tikhonova, relying on the results of the study, conducted in 2012 by the Institute of Sociology of the RAS (the Russian Academy of Sciences), "What do the residents of Russia dream about?", – the norm that "every person should have the right to defend his or her opinion, even in the case, if the majority has a different opinion". This notion is currently shared by more than three-quarters of the representatives of any age, income, education, profession or other social group" (*Тихонова (2013, с. 38)*). Unfortunately, the Russian people in reality seem to agree to the reverse proportion.

¹² This phenomenon is characteristic of the countries with low level of development of civil society, democratic institutions and political culture (*Полтерович (2002); Полтерович, Попов (2007); Полтерович, Попов, Тонис (2008); Хиллман (2009)*).

conflict is a shortage of institutions, observed at the present, and these are the public goods, serving the whole of society, and not only its privileged part (*Полещук (2013, с. 41)*).

At the same time, however, it is wrong to assume the idea of "the only possible choice". This choice always lies in the field of normative decisions, where social and economic settings are domineering, as well as the target references of the parliamentary majority. One way or another, but the society always faces a political arbitrary in defining normative interests, misinterpreting the real needs and current priorities of a society.

And if the theories of public and merit goods, as well as libertarian concept or asymmetric paternalism, do not deal with the problem of creating "pater" settings, or aim to increase the wealth (well-being) of a society, on the contrary – the theory of patronized goods places the last issue in the center of a discussion and is the main subject of analysis through the prism of the parliament collective decisions. Thus, at the same time, the parliament itself is considered a group of "authentic advisers" to various political parties, representing the interests of different groups of voters.

This approach makes possible to apply K. Arrow's theorem of "impossible" (Arrow paradox) to a group of "authentic advisers" and to make a conclusion that it is impossible to agree on the preferences of parliamentary parties, except for the case of a dictator when everybody would vote just as he does. Real political practices in the democratic states show an important regularity: *any parliament evolves towards a "collective dictator" in form of the ruling party or party coalition*, possessing the necessary majority of votes for the collective decision-making. In this case, the votes of the opposition parties virtually have no effect on collective decisions, and therefore, with a certain degree of convention, can be considered following the position of a "dictator".

A consequence of such an interpretation is a conclusion about *inadequacy of parliamentary vote*, the result of which (simple and, in some cases, a qualified majority as well) may generate solutions that are irrelevant to the real needs and priorities of society, and ignore the preferences of small parties, and the interests of many millions of their electors. This conclusion may be applied to any procedures of "collective decisions" described by Boudon and against which Mises warned. These decisions led to a general distrust in paternalism and state activity in the majority of economists and political scientists. There are no doubts that the doctrine of beneficent state should be indeed rejected. Another question is as follows: what to do about it and in what way to develop the theory and practice?

There are two possibilities. First, one can search for illusory paths of getting free from state interference. On a theoretical level, it is connected with the old and new conceptions of anarchism, as well as with a construction of such models, in which individuals and market coordination of their activities ensure a growth of welfare of each individual and a society as a community. So a number of initial conditions have to be introduced into these models, abstracting from their reality. It is clear that, within the framework of such models, there cannot be any damage from state interference, by definition. This approach is consistent with the political individualism or the radical liberalism, but, for natural reasons, and it is rejected by the doctrine of social liberalism.

Social liberalism, close to the reality, provides for the second opportunity. The recognition of the inevitability of state activity and paternalism, keeping both positive and negative impacts of the regulatory systems "pater", virtually underlies any system of their formation. Thus, the emphasis on the consequences of state interference makes sense only if the analysis is searching the mechanisms to eliminate or reduce its negative effects.

In a society these tasks may be performed by institutions that allow "not to dodge behind the majority", providing the participation of the opposition parties, the non-systemic opposition and the individual citizens in shaping and implementing regulatory interests, at least partially neutralizing

"the arbitrariness" of power and drifting the public option to the real social needs. In the theory of patronized goods, this provision of liberal democracy is formulated as a general principle of fair political competition in the collective decision-making, that does not allow "tyranny of the majority" happen.

Perhaps, V. Polterovich is right, and it makes sense to consider not a competition, but a cooperation (Полтерович (2015)). In fact, institutional-provision of fair competition of the parliamentary parties, representing various social groups in the society with different interests, may be considered a cooperation. The same position is shared by L. Yakobson, who is examining an increasing role of institutions in civil society (Якобсон (2016, с. 18)).

3. INSTITUTIONS OF CONSOCIATIONAL DEMOCRACY¹³

Let me quote words of the young Russian political scientists Mark Simon and Ekaterina Furman: "The traditional theories of liberal democracy are based on the fact that people, who are affected by these or those political decisions, must be able to participate in making these decisions ..." (Симон, Фурман (2015, с. 2)). This important remark points to a known contradiction between the liberal doctrine and the representative democracy, for only the "elected people" are involved in collective decision-making, possessing "the property and power resources", regardless of whether or not their decisions affect those who are not in the group.

Considering that modern society is composed of many strata with a broad spectrum of social groups and of inhomogeneous deputies' corps, representing their interests, it is difficult to assume a consensus between the "authentic advisers" in an interpretation of public good and a proper direction of state activity. A possible solution here, that would allow at least easing this contradiction, is the creation of institutions, defining the rules of interaction of the elites and of the relevant politicians, on the basis of the agreed compromise, proceeding from their goals and interests. This point is shared by many contemporary politicians (Ferejohn (2000, p. 79), Симон, Фурман (2015, с. 14)).

At the same time, it is rather difficult to reach such a compromise. A remark of A. Heywood is fundamental in this context, and it goes as follows: an inaccessibility of an essential consensus does not mean that there cannot be a consensus on the procedure – and that is a willingness to resolve contradictions through a conclusion of an agreement, in accordance with certain conventional rules (Heywood (2002, p. 10)). Actually, finding procedural consensus is exactly the task, facing researchers, working in the field of political institutions. There are many articles on the subject, describing different types of decisions. The same is with the other trends of research the aim of which was formulated in the known question by Vincent Ostrom: "Are we able to develop an operational version of self-controlling society instead of being content that we are ruled by a "state", and empowered by the government? (Ostrom (1991, p. 4)). A number of politicians, sociologists and economists are proposing their receipts (for example, Buchanan, Tullock (1962); Tsebelis (1990, 1995); Bueno de Mesquita, Smith (2012)).

Thus, at the same time, one of the leading British political scientists, B. Crick, noted that the conflict of interests between the participants of political process is ineradicable and "power sharing", or "disperse of power", becomes the only possible solution. (Crick (2000, p. 30)).

¹³ Consociationalism (lat. *consociation* – community) are institutions of consociational democracy – and that is «*democracy of a community*». Sometimes the principle of "disperse of power" (*power sharing*) is understood as the consociationalism.

This important remark reflects a general approach, developed by the political science of the second half of the 20th century, according to which, attempts to create institutions, that implement the principles consociationalism, became a dominant field of researches. A special place here belongs to the fundamental theory of "the consociational democracy", developed by the American political scientist of a Dutch origin, Arend Lijphart; he proposed a system of political institutions for multi-compound, multi-ethnic and sub-culturally divided societies (*Lijphart (1977, 1999), Лейнхарт (1997)*).¹⁴

"The theory of constitutionalism of Arend Lijphart – writes a Russian political scientist Joomart Ormonbekov, is a complete and sufficient concept, in the framework of which, a double phenomenon: vertical segmentation of society into separate groups of the population, according to certain common characteristics (religion, language, race, ethnicity, ideology) and the institutionalization of the negotiation process at the level of elite of the groups listed above (*Ормонбеков (2007, с. 92)*). To this I will add the following: in spite of the fact that the theory was created mainly to address issues of peaceful solution of conflicts in the multi-ethnic societies, history has shown that it possesses the potential to expand beyond the "multi compound, multiethnic and divided by sub-culture societies» (*Halpern (1986); Нджоку (1999); Бондаренко (2008); Симон, Фурман (2015)*). I will note, in this regard, it is also possible of apply the theory of "consociational democracy" to the inhomogeneous structure of the parliament, consisting of the representatives of various political parties, – the parliament reflecting the interests of the relevant social groups, that is, to the processes of formation of the settings of "politically aggregated individuals".

The main attention here should be paid to the institutional solutions proposed by Lijphart within his consociational theory, and which are, in fact, the basis of consensus on the procedure. We are talking about a big coalition, comprising the leaders of all the big parties; about the principle of proportional political representation in the appointment of officials and in the allocation of budget funds; about the right of mutual veto, which allows to reject the decisions, detrimental to the interests of relevant social groups; about the autonomy of segments, – situation most typical for countries with a federative structure, providing specific rights for the subjects of a federation (*Lijphart (1977, p. 153; 1999), Лейнхарт (1997, с. 60); Ормонбеков (2007, с. 95–99); Симон, Фурман (2015, с. 11)*).

To a certain degree, each of these institutions can be used for solving the problem of the normative settings of society. Thus, the creation of a grand coalition involving the representatives of political parties, that had lost the elections, for controlling the country, in most cases, allows to overcome "the tyranny of the majority." Thus, at the same time, coalition solutions, that take into account the interests of the most diverse groups of the population, acquire particular importance for patronized goods, for the allocation of budget funds, when, strictly speaking, their volume and structure are being set as well. However, if a certain party gets a sufficient number of votes (in Russia, so far, it is the current history), and a coalition does not appear, then the problem of protecting the interests of minority is of particular relevance.

¹⁴ In his classic book «*Democracy in Plural Societies*» (1977) [translated into Russian (*Демократия в многосоставных обществах (1997)*)] Lijphart introduced a concept of community or consociational democracy (democracy of a community). In his later works the author complements the category of "consociational democracy" with the notion of "consensual democracy", the analysis of which he outlined in his book «*Patterns of Democracy*» (1999). See also (*Симон, Фурман (2015, с. 20)*).

Let us now consider only the practical aspects of theory patronized goods, and, what is more, an example of that sphere, where there are few of those, who have objections to the activity of the state "for the sake of the positive liberties" or "freedoms for..." (Берлин (2001, с. 51–52)). We consider here the humanitarian sector of the economy (culture, science and education), suffering from the well-known 'Baumol's disease, "which are in need of financial support from the society".¹⁵ However, especially in this sector, where human capital is formed, the negative traits of paternalism, associated with the arbitrariness in the choice of the regulatory settings of the state, are manifested more often than in the other sectors of economy. The Russian practice is overfilled with such examples, while institutional liberalization is still a relevant task.

Thus, at the same time, the state, trying to reduce budget costs, had formed a common setting to the corresponding transformations in the humanitarian (science, culture, education) sector of economy. Unfortunately, the decisions and associated reforms were carried out unskillfully, as a rule, with poorly calculated consequences, and this had only complicated the position of manufacturers of the patronized goods. The result of these transformations was the deterioration of education, collapse of the Russian Academy of Sciences and "the sword of Damocles" of "optimization" hanging over the culture sector network, and the job cuts (Муzychuk, Rubinstein (2014)). All this makes us think about the need for institutional transformations, aimed at using the institutions of the consociational paternalism, in creating the normative settings.

First of all, I consider one of the key institutions of consociational democracy, based on the principle of proportional political representation. Besides, participation in executive power bodies of the representatives of various political parties, expressing the interests of the relevant social groups, the introduction of this institution can create very important and rather necessary mechanisms of influence of the expert community on the process of making political and economic decisions. The matter in question is a change in the rules of creating the already existing public councils at the ministries and departments.

In accordance with the principle of proportionality of political representation, politicians should be included in these councils, who belong to the opposition parties and to non-systemic opposition, as well as leading experts in the appropriate areas of the activities in a society. The empowerment of these public councils with real rights and media coverage of the results of their functioning, will allow to avoid many mistakes that had happened before and that continue to happen in the absence of civilian control over the activities of the executive power bodies.

Besides the principle of proportionality, the theory of consociationalism offers more stringent principles as well, ensuring a transfer of "collective decisions" from the sphere of vote to negotiations, preceding the vote, associated with the search of a compromise. We deal with institutionalization of the veto right – the one ensuring the rights of the parliamentary minority to participate in decision-making process and to protect the interests of their electorates.¹⁶ This institution also appears to be quite substantial for the patronized goods, because it enables to block decisions, leading to a loss of welfare of both individual groups of citizens and of the whole society. With such an institution in Russia, perhaps, a number of laws unfriendly to education, science, culture and health, would not have been passed.

¹⁵ For more details see: (Рубинштейн (2005, 2012); Rubinstein (2012, 2013)).

¹⁶ One can turn to the Tsebelis writings, where the author substantiates the concept of the "veto-voters" (Tsebelis (1990, 1995)). See also Pomiguyev: "The "veto-voters" are the collective or individual actors, whose consent is necessary to change status quo. So, status quo is nothing else but the "present policy", – it may be a legislation, the changes in which depend on the unanimous voting of all the "veto-voters" (Помигуев (2014, с. 200)).

Consociational proportionality principle also assumes the possibility of the budget funds' allocation, concerning the interests of various parties, including those that do not join the majority coalition and are in the opposition. A definite step in this direction could be a new procedure of "zero reading" (a stage preceding a standard procedure of taking budget decisions in the parliament), during which less than 85% of government expenditures are allocated, in which the representatives of all the parliamentary parties are participating. In the next readings, the opposition parties should be given an exclusive right to control the remaining 15% funds, directing the funds to fulfill requirements of social groups, represented in the programs of these parties (*Рубинштейн (2014, с. 509)*).¹⁷ This new institution will extend (broaden) the negotiation process towards a search for compromises and, at least partially, transfer a number of collective decisions to a stage, preceding parliamentary voting.

The appropriate procedures of budget funds' allocation should go along Lijphart's theory of "consociational democracy" and in addition be based on the institutions of "veto" and "zero reading", that are the basis of "procedure consensus" as well. This is an institution of budgetary normatives, characterizing the minimum shares of budget expenditures to support different kinds of patronized goods and an institution of individual budget allocations, ensuring the direct participation of the citizens in decision-making affecting the conditions of their lives.

Concerning the budgetary normatives, I emphasize that, in conditions of an objective inability of the most manufacturers of patronized goods in the humanitarian sector of the economy to ensure market self-sufficiency, budget expenditures in this sector should be considered as the guarantees of public support in the form of state obligations, involving three types of economic entities: employees, participating in creation, preservation, distribution and consumption of the patronized goods; their consumers – the citizens of the country; institutions of science, culture and education.

I emphasize, that the humanitarian sector of economy, that needs protection from the never disappearing in Russia "residual principle" and from the constant readiness of the authority to give up budgetary support (for science, culture and education), the institution of budgetary normatives reveals another principle of consociational democracy, the purpose of which includes a support of a status quo and creation of stabilizing mechanisms (*Ормонбеков (2007, с. 98)*). The introduction of this institution in the practice of funding the humanitarian sector means, in fact, means obtaining the status of "protected items of the budget". This measure will provide at least the minimum guaranteed level of subsidies to science, education and culture.¹⁸

The budget of these sectors should be connected to another institution of consociational democracy – the individual budget appropriations (IBA). The essence of this institution is transformation of the citizens into the subjects of budget policy. It defines their direct participation in the development of normative settings of "a politically aggregated individual" and is about a corresponding allocation of budget funds (*Рубинштейн (2014, с. 507–508)*). The predecessor of this institution is the practice of a number of European countries to use a mechanism of "percentage philanthropy". According to this mechanism, each taxpayer decides to direct 1–2% of his income tax to the social and cultural needs at his choice (*Fazekas (2000), Kuti, Vajda (2000), Кнац, Соборников, Тисленко (2010), Хаунина (2012, 2013)*).¹⁹

¹⁷ I would note that 15% is a ballpark figure. Its specific value depends on the share of votes of the opposition parties in parliament. Thus, at the same time, the indicated 15% can be distributed between the opposition parties in proportion to their "weight" in parliament.

¹⁸ This institution had already existed in the culture, as one of the norms of "Fundamentals of the Legislation of the Russian Federation on Culture" (article 45), adopted in 1992. Later the Ministry of Finance suspended this Article, and in 2005 it was totally removed from the Law.

¹⁹ We also remind about "the church tax" (*Хаунина (2014, с. 200–205)*) and the practice of "participatory budgeting" (*Keblowski (2013)*). At the same time the procedure of "participative

Of particular note is the fact that the institution of “individual budgetary appropriations”, and partially “participative budgeting” allow to smooth a mentioned above chronic contradiction between the liberal doctrine and the representative democracy. Moreover, in contrast to the “participative budgeting”, the choice of the citizens in the “individual budgetary appropriations” is final and does not depend on the decisions of the representative and executive powers. The procedure of “individual budgetary appropriations” provides managing a small part of the budgetary resources, thereby implementing the right of the citizens to decide independently, what kinds of patronized goods have the most value for them.

The introduction of this institution would create a regular source of support for cultural, scientific and educational activities. At the same time, its efficiency and amount of financial support to the humanitarian sector of the economy, would increase considerably, if one uses the strategy of “spend, without wasting, accumulate.” The implementation of this strategy, based on a combination of the institute of individual budgetary appropriations with the endowment funds, would become an important step towards formation of the development budget of the humanitarian sector of economy and lowering its dependence on momentary decisions of the authorities.

CONCLUSION

The discussion on the pages of a journal of many economists, sociologists and political scientists, representing different scientific schools and world outlooks provides for the general conclusion: social liberalism and its attribute (feature) – paternalism – should be perceived as an integral component of the economic reality. And, although some authors are discussing paternalism only with negative connotations, yet the modern trend of theoretical and applied researches is associated with the new forms of state activity determining its economic policy (Яновский, Жаворонков (2013, с. 69)). In this context Musgrave’s meritocracy was continued by the libertarian (Sunstein, Thaler (2003)) and the asymmetric paternalism (Camerer et al. (2003)).

The theoretical analysis started a new agenda, associated with the need to correct institutional provision of paternalism in favor of the civil society and the redistribution of powers. In focus are the new institutions of cooperation (Полтерович (2015)), the development of civil self-organization, institutionalization of community groups (Якобсон (2016)), and the institutions of “power disperse” (Lijphart (1999)). In the theory of patronized goods, this new agenda has found substantiation in the concept of consociational paternalism (Рубинштейн (2015)).

The past discussion revealed a strong research capacity that could not be totally covered in the articles, published in the journal “*Social Sciences and Modernity*.” I am sure this is not “the end of the story”. The reports on researches of the subject will be appearing in the new publications. In particular the article “*On what personal characteristics could economic liberalism rely on*” V. Avtonomov showed a special continuation to the discussion. A comparative study of theorists of liberalism with different world outlooks (F. Bastiat, L. von Mises, F. von Hayek, W. Eucken and M. Friedman), brought to a conclusion: there are two properties of man – the value of freedom and a reasonable strive for material benefits are determining liberal economic policy. At the same time, according to the author: “Liberalism, based on the material benefits only, will inevitably turn into paternalism” (Автономов (2015, с. 22)).

budgeting” is found only at a local level; the mechanism involves ascertaining the estimate of population about the *reasonable expenses* of the budget in question, in an approval of which only the “elected people” take part.

This conclusion has a general nature. One should not count on the "ideal type" of a person with an "absolute sense" of freedom, who does not conflict with the "material benefit" – that one should not escape the reality. Keeping this in mind we come to a conclusion that liberalism has a paternalist component. I also want to stress the opposite: in a society with a slave mentality, albeit a small doze of it, there is still a "natural disposition (tendency) to freedom". Like all extremes it is only a convenient metaphor. Perhaps, one should better think about the distribution of the "value of freedom" in space and in time. At the same time, this characteristic appears to be useful for social analysis. In particular, the scholars, involved in the study of reforms, should, apparently, take into account this characteristic. I even risk assuming, that many "institutional traps" can be explained by a lack of this "disposition (tendency) to freedom" in the institutions transplanted.

It also seems that the "value of freedom" allows us to take a different look at the varieties of paternalist policies as well, sorting them by this very special parameter.

I will not take into account the extreme position – *archaic paternalism*, but one can contend that *the meritor paternalism* (Musgrave (1969)) is present in a society with a great "sense of freedom". Within this concept, the subsidies, tax incentives for producers and transfers to the consumers provide people with a certain freedom of choice. In this sense, *libertarian paternalism* substantially widens the possibilities of a consumer choice. The authors optimistically claim that its "pushing policy" (so called «*nudging*»), "removes the contradiction between paternalism and freedom of choice» (Sunstein, Thaler (2003, p. 1188)).

The next step towards ensuring more freedom for the individual was made by another group of the authors for the "new paternalism". Those authors paid attention to the fact that state paternalist activities should not concern those who behave rationally: the "*asymmetric paternalism*" helps those whose rationality is bounded and does not harm more rational people" (Camerer et al. (2003, p. 1254)). On the basis of these discourses, and a parameter "value of freedom", we can make a summary table (Table 1) to put in order the varieties of paternalism.

Table 1. THE LIBERAL EVOLUTION OF PATERNALISM*

	Archaic Paternalism (<i>Pique de Bry</i> (1980))	Merit Paternalism (<i>Musgrave</i> (1959))	New Paternalism (<i>Капелюшников</i> (2013a, 2013б))		Consociational Paternalism (<i>Рубинштейн</i> (2015))
			Libertarian Paternalism (<i>Sunstein, Thaler</i> (2003))	Asymmetric Paternalism (<i>Camerer et al.</i> (2003))	
THE STATE AS “PATER CARE” OF THE CITIZENS					
CONCEPT OF MULTIPL "ME"					
FORMATION OF PATER SETTINGS THE RULING MAJORITY					
“SUBSIDIES AND TAXES” INSTITUTIONS					
“NUDGE” INSTITUTIONS					
THE CONCEPT OF “PATER” AUTONOMOUS PREFERENCES (NORNATIVE STANDARD)					
FORMATION OF “PATER” SETTINGS INSTITUTIONS OF CONSOCIATIONAL DEMOCRACY					

There is still another variety of paternalism, *consociational paternalism*, considered in the article (Рубинштейн (2015)). It differs from the meritorious and new paternalisms by its "connection" to the institutions of consociationalism (Lijphart (1977; 1999), Лејнхарм (1997)) ensuring the implementation of one of the fundamental principles of liberal democracy. The point is that "people, whom the political decisions are addressed to, are supposed to be able to participate in the process of decision-making" (Симои, Фурман (2015, с. 2)). In other words, the institutions of *consociational paternalism* provide liberalization of the formation of the normative settings, thereby widening the freedoms of people at a higher level, complementing their freedom of consumer choice.

If we also impose the proposed classification of the different types of paternalism, constructed according to the criterion of the "values of freedom" on the time axis, one may notice, that the development of different versions of paternalism turns out to be in order as well in time. This result allows us to formulate an important theoretical statement: paternalism, as part of the economic reality, is evolving in time and space, and is undergoing institutional evolution, in an evident liberal direction.

I emphasize again that we are observing only a certain theoretical trend. At the same time, real economic policy is not always based on the relevant institutional capacities. To compare this trend with the economic policy of a particular country, it is sufficient to use the same scale – "value of freedom." I once again quote Avtonomov: "... the possibilities of liberal policy vary depending on whether the "target" population has a stable and customary "value of freedom" (Автономов (2015, с. 22)).

If we consider the population of Russia, our country, I repeat the words of N. Tikhonova: «... in [his] mind, today in paradox unity coexist the values typical of liberalism, and a set of norms and values characteristic of "neo-etocratic societies"» (Тихонова (2013, с. 38)). The practice of the last 20 years shows that the Russian people have readily agreed to the total domination of the state in all the activities of society. It means the population of our country does not yet have a fully developed and sustained "disposition to freedom", and this disposition can be found in not more than 15–20% of the population (Аврамова (2015, с. 111)). This, of course, is a hypothesis, but it provides an explanation, why the economic policy in contemporary Russia is still somewhere between archaic and meritorious paternalism (Аврамова (2015)).

It is worth mentioning yet another Russian peculiarity, – a paradoxical relationship of liberal ideas with the methods of paternalism. This relationship is being manifesting in the economic policy for more than 20 years, often accompanied by many negative elements, characteristic of the archaic paternalism, when even the liberal ideas without a consociational selection, are transformed into the opposite ideas. Suffice it to recall voucher privatization or currency exchange regulation.

The positive expectations (and I believe it will turn out in reality) are well described by N. Tikhonova: "Assessing the prospects for mass conscious evolution in the direction of liberal values, one cannot ignore the fact (these are the results of all the main research groups,¹ involved in the analysis of the dynamics of norms and values) that... there is a general drift of the Russians from the normative and value systems, characteristic of the collectivist type cultures, to the individualistically oriented cultures" (Тихонова (2013, с. 39)). Perhaps, this drift, in not a too distant future, will create conditions for the institutional changes in the formation of the normative interests of society, and these changes will become a real driver of the transition from the archaic

¹ In particular, these are studies carried by N. Lapin and L. Belyaeva, V. Magun and M. Rudnev, N. Latova, N. Lebedeva and A. Tatarko, executed with the use of different techniques and various datasets.

paternalism to the consociational paternalism, which (to my consent) is the nuclear of social liberalism in the 21st century.

REFERENCES

- Аврамова Е.М.* (2015) Есть ли в современном российском обществе запрос на социальный либерализм? // *Общественные науки и современность*. № 3. С. 101–113.
- Автономов В.С.* (2014) Еще несколько слов о методологическом индивидуализме // *Общественные науки и современность*. № 3. С. 53–56
- Автономов В.С.* (2015) На какие свойства человека может опереться экономический либерализм // *Вопросы экономики*. № 8. С. 5–24.
- Аристотель* (1983) *Политика* // Аристотель. Соч. в 4 т. Т. 4. М.: Мысль. С. 376–644.
- Асемоглу Д., Робинсон Дж.* (2013) Политика или экономика? Ловушки стандартных решений // *Вопросы экономики*. № 12. С. 4–28.
- Берлин И.* (2001) *Философия свободы. Европа*. М.: Новое литературное обозрение.
- Бондаренко Т.Ю.* (2008) Принципы консociативной демократии в государственном строительстве за пределами Европы // *Политическая наука*. № 4. С. 213–223.
- Гринберг Р.С., Рубинштейн А.Я.* (2013) *Индивидуум & государство: экономическая дилемма*. М.: Весь мир.
- Гринберг Р., Рубинштейн А.* (1998) «Социальная рента» в контексте теории рационального поведения государства // *Российский экономический журнал*. № 3. С. 58–66.
- Дози Дж.* (2012) Экономическая координация и динамика: некоторые особенности альтернативной эволюционной парадигмы // *Вопросы экономики*. № 12. С. 31–60.
- Заостровцев А.П.* (2015) Социальный либерализм: анализ с позиций австрийской школы // *Общественные науки и современность*. № 1. С. 64–74.
- Канеман Д., Тверски А.* (2003) Рациональный выбор, ценности и фреймы // *Психологический журнал*. № 4. С. 31–42.
- Капелюшников Р.И.* (2013) Поведенческая экономика и "новый" патернализм // *Вопросы экономики*. № 9. С. 66–90; № 10. С. 28–46.
- Кнац Ю., Сборников И., Тисленко Д.* (2010) "Процентная филантропия": о возможности введения в России налога на содержание некоммерческих организации. (http://tmbv.info/index.php?option=com_content&view=article&id=7323:1-r-&catid=331:2010-08-03-08-28-12&Itemid=400).
- Ковельман А.Б.* (1996) *Толпа и мудрецы талмуда*. Москва–Иерусалим: Еврейский университет в Москве.
- Лаффон Ж.-Ж.* (2007) *Стимулы и политэкономия*. М.: ГУ–ВШЭ.
- Лейнхарт А.* (1997) *Демократия в многосоставных обществах*. М.: Аспект Пресс.
- Лефевр С.* (2008) Социальная роль предприятий в России: объяснительные возможности термина "патернализм" // *Мир России*. № 3. С. 149–170.
- Либман А.М.* (2013) Социальный либерализм, общественный интерес и поведенческая экономика // *Общественные науки и современность*. № 1. С. 27–38.
- Майерсон Р.* (2010) Равновесие по Нэшу и история экономической науки // *Вопросы экономики*. № 6. С. 26–43.
- Мельник Д.В.* (2015) Концепция социального либерализма на "рынке идей" современной России // *Общественные науки и современность*. № 2. С. 43–53.
- Мизес Л. фон.* (2005) *Человеческая деятельность: трактат по экономической теории*. Челябинск: Социум.
- Нджоку Р.* (1999) Что такое консociонализм? // *Практика федерализма. Поиски альтернатив для Грузии и Абхазии*. С. 300–312. (http://poli.vub.ac.be/publi/orderbooks/federal_r/12njoku.pdf).
- Норт Д., Уоллис Дж., Вайнгаст Б.* (2011) *Насилие и социальные порядки: Концептуальные рамки для интерпретации письменной истории человечества*. М.: Изд-во Ин-та Гайдара.

- Ормонбеков Ж. (2007) Теория консоционализма Аренда Лейпхарта // Казанский федералист. № 1–2. С. 98–108.
- Павлов И.А. (2007) Поведенческая экономическая теория – позитивный подход к исследованиям человеческого поведения. М.: Институт экономики РАН.
- Павлов И.А. (2011) Феномен "уклонения от двусмысленности" в теории рационального выбора. М.: Институт экономики РАН.
- Платон (1971) Государство // Платон. Соч. в 3 т. Т. 3. М.: Мысль.
- Полищук Л.И. (2013) Аутсорсинг институтов // Вопросы экономики. № 9. С. 40–65.
- Полтерович В.М. (2015) От социального либерализма к философии сотрудничества // Общественные науки и современность. № 4. С. 41–64.
- Полтерович В.М. (2002) Политическая культура и трансформационный спад // Экономика и математические методы. № 4. С. 95–103.
- Полтерович В.М., Попов В.В. (2007) Демократизация и экономический рост // Общественные науки и современность. № 2. С. 13–27.
- Полтерович В.М., Попов В.В., Тонис А.С. (2008) Нестабильность демократии в странах, богатых ресурсами // Экономический журнал ВШЭ. № 2. С. 176–200.
- Помигуев И.А. (2014) Концепция вето-игроков: новый подход в изучении форм правления // Политическая наука. № 1. С. 199–210.
- Радыгин А., Энтов Р. (2012) "Провалы государства": теория и политика // Вопросы экономики. № 12. С. 4–30.
- Рубинштейн А. (2011) К теории опекаемых благ. Неэффективные и эффективные равновесия // Вопросы экономики. № 3. С. 65–87.
- Рубинштейн А.Я. (2008) К теории рынков "опекаемых благ". М.: ИЭ РАН.
- Рубинштейн А.Я. (2009а) К теории рынков "опекаемых благ". Статья I. Опекаемые блага и их место в экономической теории // Общественные науки и современность. № 1. С. 139–152.
- Рубинштейн А.Я. (2009б) Мериторика и экономическая социодинамика: дискуссия с Р. Масгрейвом // Вопросы экономики. № 11. С. 98–109.
- Рубинштейн А.Я. (2014) Методологический анализ теории опекаемых благ // Urbi et Orbi: в 3 т. Т. 1 Теоретическая экономика. СПб: Алетейя. С. 461–522.
- Рубинштейн А.Я. (2005) Наука, культура и образование: препятствие или условие экономического роста? // Российский экономический журнал. № 4. С. 32–40.
- Рубинштейн А.Я. (2012) Социальный либерализм: к вопросу экономической методологии // Общественные науки и современность. № 6. С. 13–34.
- Рубинштейн А.Я. (2015а) Теория опекаемых благ и патернализм в экономических теориях: общее и особенное. М.: Институт экономики РАН.
- Рубинштейн А.Я. (2015б) Экономический кризис и новая парадигма общественной поддержки опекаемых благ // Журнал новой экономической ассоциации. № 2. С. 264–269.
- Саймон Г. (1993) Рациональность как процесс и продукт мышления // THESIS. Вып. 3. С. 16–38.
- Самуэль Г. (2010) Либерализм. Опыт изложения принципов и программы современного либерализма. М.: URSS.
- Симон М.Е., Фурман Е.Д. (2015) Проблема выработки политического компромисса: институциональное измерение. М.: ИЭ РАН.
- Тамбовцев В.Л. (2013) Методологический анализ и развитие экономической науки // Общественные науки и современность. № 4. С. 42–53.
- Тамбовцев В.Л. (2014) Общественные блага и общественные интересы: есть ли связь? // Вопросы экономики. № 11. С. 25–40.
- Темницкий А.Л. (2015) Патерналистские основы российской цивилизации в сфере труда // Социологическая наука и социальная практика. № 2. С. 51–69.
- Тихонова Н.Е. (2013) Социальный либерализм: есть ли альтернатива? // Общественные науки и современность. № 2. С. 32–44.
- Урнов М.Ю. (2014) Россия: виртуальные и реальные политические перспективы. М.: НИУ ВШЭ.

- Хаунина Е.А. (2014) От церковного налога к институту индивидуальных бюджетных назначений // Журнал Новой экономической ассоциации. № 4. С. 200–205.
- Хаунина Т.А. (2012) "Процентная филантропия" – дополнительный финансовый ресурс для организаций социально–культурной сферы // Журнал новой экономической ассоциации. № 2. С. 141–143.
- Хаунина Т.А. (2013) "Процентная филантропия" – проблемы трансплантации успешного института финансовой поддержки культурной деятельности / Культура и рынок. Опекаемые блага. СПб.: Алетейя. С. 127–132.
- Хиллман А.Л. (2009) Государство и экономическая политика. Возможности и ограничения управления. М.: ГУ ВШЭ.
- Шумпетер Й. (2001) История экономического анализа: в 3-х т. Т. 3. СПб.: Экономическая школа.
- Якобсон Л.И. (2016) Социальная политика ювенального общества // Социальный либерализм (под ред. А.Я. Рубинштейна, Н.М. Плискевича). СПб. Алетейя. С. 294–309.
- Яновский К.Э., Жаворонков С.В. (2013) Плоды социального либерализма и некоторые причины устойчивого выбора неэффективных стратегий // Общественные науки и современность. № 6. С. 61–74.
- Agassi J. (1960) Methodological individualism // The British Journal of Sociology, no 3, pp. 244–70.
- Bueno de Mesquita B., Smith A. (2012) The Dictator's Handbook: Why Bad Behavior is Almost Always Good Politics. N.Y.
- Buchanan J, Tullock G. (1962) The Calculus of Consent: Logical Foundations of Constitutional Democracy. Ann Arbor; University of Michigan Press.
- Boudon R. (1979) La logique du sociale: introduction a l'analyse sociologique. Paris: Hachette.
- Brennan G., Lomasky L. (1983) Institutional Aspects of "Merit Goods" Analysis // Finanzarchiv, vol. 41, pp. 183–206.
- Camerer C., Issacharoff S., Loewenstein G., O'Donoghue T., Rabin M. (2003) "Regulation for conservatives. Behavioral economics and the case for 'asymmetric paternalism'" // University of Pennsylvania Law Review, vol. 151, pp. 1211–1254.
- Crick B. (2000) In Defense of Politics. Harmondsworth, New-York: Penguin.
- D'Amico D. (2009) Merit Goods, Paternalism and Responsibility. Pavia. Universita.
- Debouzy M. (1988) In the shadow of the Statue of Liberty: Immigrants, workers and citizens in the American Republic (1880–1920). Paris: Universitaires de Vincennes.
- Fazekas E. (2000) The 1% Law in Hungary: Private Donation from Public Funds to the Civil Sphere. The Journal of East European Law, vol. 7. no. 3–4, Columbia University e.g. on p. 447.
- Grinberg R., Rubinstein A. (1999) Ökonomische Soziodynamik und rationales Verhalten des Staates. Köln.
- Grinberg R., Rubinstein A. (2005) Economic Sociodynamics. Berlin, Heidelberg, New-York: Springer-Verlag.
- Halpern Sue M. (1986) The Disorderly Universe of Consociational Democracy // Western European Politics, vol. 9, no. 2. pp. 181–182.
- Heywood A. (2002) Politics. L.: Palgrave Macmillan.
- Kahneman D., Tversky A. (eds.). (2000) Choices, values and frames. N.Y.: Cambridge University Press.
- Katona G. (1951) Psychological Analysis of Economic Behavior. N.Y.: McGraw-Hill.
- Keblowski W. (2013) Budżet Partycypacyjny: krótka instrukcja obsługi. Warszawa: Instytut Obywatelski.
- Kuti E., Vajda A. (2000) Citizen's Votes for Non–Profit Activities in Hungary. Nonprofit Information and Training Center – Non-Profit Research Group.
- Laffont J.-J. (2000) Incentives and Political Economy (Clarendon Lectures in Economics). Oxford (UK); N.Y.: Oxford University Press.

- Lijphart A.* (1977) *Democracy in Plural Societies: A Comparative Exploration*. New Haven: Yale University Press.
- Lijphart A.* (1999) *Patterns of Democracy. Government Forms and Performance in Thirty-Six Countries*. New Haven: Yale University Press.
- Machlup F.* (1982) *Austrian Economics // Encyclopedia of Economics*. N.Y.: McGraw-Hill.
- Musgrave R.A.* (1959) *The Theory of Public Finance*. N.Y.-L.
- Musgrave R.A.* (1969) *Provision for Social Goods // Public Economics*. London–Basingstoke: MacMillan, pp. 124–144.
- Musgrave R.A., Musgrave P.B., Kullmer L.* (1994) *Die öffentlichen Finanzen in Theorie und Praxis*. Band 1, auflage 6. Tübingen.
- Muzychuk V., Rubinstein A.* (2014) Optimization or Degradation? Russian Culture between the Past and the Future. *Social Sciences*. No. 6, p. 13–31.
- Noiriel G.* (1988) Du patronage au paternalisme: la restructuration des formes de domination de la main-d'oeuvre ouvrière dans l'industrie métallurgique française // *Le Mouvement social*. Paternalismes d'hier et d'aujourd'hui, no. 144.
- Ostrom V.* (1991) *The Meaning of American Federalism. Constituting a Self-Governing Society*. San Francisco: ICS PRESS.
- Perrot M.* (1979) *Le regard de l'Autre: les patrons français par les ouvriers (1880–1914) // Le patronat de la seconde industrialisation, études rassemblées par M. Levy-Leboyer*. Paris: Éditions Ouvrières.
- Pique de Bry F.* (1980) *Le paternalisme dans l'opinion des industriels français du XIX^{em} siècle*. These d'Etat en Sciences Economiques. Paris: Université de Paris I. *International Scientific Journal*, no. 3, p. 36–58.
- Rubinstein A.* (2012) Studying «sponsored goods» in Cultural Sector Symptoms and Consequences of Baumol's Cost Disease. *Creative and Knowledge Society / International Scientific Journal*, vol. 2, p. 35–57.
- Rubinstein A.* (2013a) Studying «patronized goods» in cultural sector. Econometric model of Baumol's disease. *Creative and Knowledge Society / International Scientific Journal*, vol. 1, p. 28–48.
- Rubinstein A.* (2013b) The theory of «patronized goods» in the optics of comparative methodology. *International Journal of Entrepreneurial Knowledge*, vol. 3.
- Samuelson P.A.* (1954) The pure theory of public expenditure // *Review of Economics and Statistics*, vol. 36, no. 4, pp. 387–399.
- Schmidt K.* (1988) Mehr zur Meritorik. Kritisches und Alternatives zu der Lehre von den öffentlichen Gütern // *Zeitschrift für Wirtschafts –und Sozialwissenschaften*. Vol. 108. Jahrgang. Helf 3. S. 383–403.
- Schneider W., Shiffrin R.M.* (1977). Controlled and Automatic Human Information Processing I. Detection, Search, and Attention Processing II. Perceptual Learning, Automatic Attending and a General Theory // *Psychological Review*, vol. 84, no. 1, pp. 1–66; no. 2, pp. 127–190
- Shefrin H.M., Thaler R.* (1978) *An Economic Theory of Self*. Center for Economic Analysis of Human Behavior and Social Institutions. Working Paper No. 208.
- Simon H.A.* (1957) *A Behavioral Model of Rational Choice*, in *Models of Man, Social and Rational: Mathematical Essays on Rational Human Behavior in a Social Setting*. N.Y.: Wiley.
- Simon H.A.* (1955) *A Behavioral Model of Rational Choice // Quarterly Journal of Economics*, vol. 69, no. 1, pp. 99–118.
- Stigler G.* (1971) *The Theory of Economic Regulation // Bell Journal of Economics*, vol. 2, pp. 3–21.
- Sunstein C., Thaler R.* (2003) *Libertarian paternalism is not an oxymoron // University of Chicago Law Review*, vol. 70, pp. 1159–1202.
- Sunstein C., Thaler R.* (2009) *Nudge: Improving Decisions about Health, Wealth, and Happiness*. New Haven: Yale University Press.
- Thaler R.H.* (2000) *From Homo Economicus to Homo sapiens // Journal of Economic Perspectives*, vol. 14, no. 1, pp. 133–141.

Thaler R.H., Shefrin H.M. (1981) On Economic Theory of Self-Control // *Journal of Political Economy*, no. 2, pp. 392–406.

Tietzel M., Muller C. (1998) Noch mehr zur Meritorik // *Zeitschrift für Wirtschafts – und Sozialwissenschaften*. Berlin: Duncker & Humblot.

Tsebelis G. (1990) *Nested games: rational choice in a comparative perspective*. Berkeley: University of California press.

Tsebelis G. (1995) Decision making in political systems: veto players in presidentialism, parliamentarism, multicameralism, and multipartyism // *British journal of political science*. Cambridge. No. 25. P. 289–326.

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INNOVATION WITHIN THE MORAVSKOSLEZSKÝ REGION – SMALL AND MEDIUM SIZED ENTERPRISES

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ABSTRACT

The paper focuses on innovation in the Moravian-Silesian Region in the sector of small and medium enterprises. The article presents the results of research which has dealt with innovations in the sector of small and medium-sized enterprises, in particular with types of innovations which have been implemented in this sector. Furthermore, it evaluates the impacts of their implementation on selected areas and how the size of a company influences the effects of implemented innovations within the selected areas. The greatest influences from the point of view of the effect of implemented innovation have been discovered in criteria focused on the observation of the market and a less significant influence in a criterion focused on social sector.

KEY WORDS

Innovation, competitiveness, knowledge economy

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INTRODUCTION

Current influences on business are represented by such characteristics as variability, turbulence, dynamics, intellectualization, informatization and increasing competition. Success is not guaranteed in such conditions.

The basic prerequisite for a successful operation of a company in a market and its maintaining a competitive edge is the active and systematic approach to promoting corporate innovation activities and the implementation of innovation itself.

The fundamental basis for the selected issue is a reflection based on the fact that the existence of each company, regardless of its size and scope of its business, is not isolated. Every business is,

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within its activities, a part of a business community and currently in an environment of strong market competition (Veber, Srpová 2005).

The aim of this paper is to present the results of research focused on innovation in small and medium enterprise - specifically to determine which innovations are implemented in this area, what the effects of their implementation are in selected areas and to determine whether the effects of implemented innovations have an impact on the size of an enterprise in selected areas.

The implementation has taken the form of research; data collection has been carried out with the use of the method of questioning, and the obtained primary data have been processed with the use of statistical analysis - dependence analysis using the Spearman correlation test.

1. CURRENT CONCEPT OF ECONOMY

Developed economies are currently characterized as societies that build their competitiveness primarily on knowledge. At present, these societies are generally perceived as knowledge societies. An interesting concept was put forth by (Vlk 2006) – it is a society where the process of creation plays the biggest role in the accumulation of wealth, or according to Fischel, our society has been society of knowledge and understanding since the beginning of our history. (Vlk 2006) further mentions that according to Ježek, the fundamental questions asked in a knowledge society are not only questions „what“ but „why“ and „how“. At present, it is an almost undeniable fact that the ability to innovate and capitalize on the results of knowledge and science is of extreme importance for companies or a society (Vlk 2006).

The competitive ability of enterprises or societies is defined as the ability to show steady growth in productivity; i.e. to achieve higher outputs with limited inputs of labour and capital.

In a broader sense, competitiveness can be perceived as a set of conditions for achieving long-term performance and growth. This is the basis for increased economic equilibrium in terms of internal and external balance. The competitive ability of a company is also manifested in the form of gaining and maintaining or increasing market share at the national and international market. (Kislingerová et al. 2008).

(Kislingerová 2011) also states that the basic competitive advantage of an economy in the concept of "knowledge economy" then becomes an "innovation potential" allowing a relevant business system to constantly come up with such changes in the societal cooperation that make the product more marketable than the product of other firms, corporations, regions and possibly countries.

It has been statistically proven that the level of education and knowledge in a society has a direct correlation with the ability to successfully develop innovation.

2. THE CONCEPT OF INNOVATION

The concept of innovation has its roots in Latin. It comes from the Latin word "innovare" which can be translated as "to restore". The Czech language offers more options to convey the meaning of the term e.g.: "change", "introduce something new". Upon closer reflection it might be possible to find other options. How are we, in reality, going to define: What is a "restoration or renewal"? What constitutes a "change"? What does "something new" look like?

Today, innovation is considered to be a factor which significantly affects the competitiveness of companies as well as countries or their regions.

Milan Zelený has defined innovation as follows: *"Innovation is such a quantitative and qualitative improvement of a product, process, or business model that it will significantly add value to the customer and enterprise, ideally both at the same time. If the added value is realized through a transaction; innovation itself arises in the market at the time of sale. Actually, it is realized by the customer. Therefore, innovation is fundamentally different from invention, patent or improvement proposal - these may remain unrealized, in a vault, hidden away in a warehouse or the patent office in the form of papers ."* (Košturiak, Chala 2008).

(Narayanan, Colarelli O'Connor 2010, p. 89) define innovation as a new idea, method, process or device that provides a higher degree of performance for the user. Change caused by the fact that innovation has been applied typically adds value for the customer or the manufacturer.

(Baldwin, Gellatly 2003, p. 2) hold that - innovation is the commercialization of knowledge in the form of new or improved products, processes or combinations thereof. Rasheed (2012) points out that innovation is a key factor in the ability to predict the revolutionary changes in development.

According to Jacobsen (2006) innovations do not constitute, as it is often assumed, only the development of completely new product or service; it is rather a modification of existing products and services; the securing of new markets or finding new uses for products already in existence. It is a new combination of already existing factors, more competitive production, other distribution or market determination of products or the transfer of business models from one area to another. This is essentially an activity characterized by transfer, transfer being essential aspect.

There exist different views for the definition of innovation. Is it just a question of technologies? Or is it the process of change? Innovation can be termed as the application of creativity in order to solve a problem and the taking advantage of opportunities. Innovation refers both to the final product, as well as its production process. In connection with innovation, creativity plays an important role. What is a mutual bond between them? Creativity is about "thinking" and innovation about "doing" (Kirby 2009).

It is obvious that innovation is closely related to creativity and creative thinking. Creative thinking can be seen as a process, which, however, does not take place without preparation. At the same time it has its structure and relation to critical thinking. In other words, the interaction of these components makes sense (Dytrt, Stříteský 2009). Innovation and creativity in the workplace have become increasingly important determinants of organizational performance, success, and longer-term survival. (Anderson, Potocnik, Kristina, Zhou 2014).

Innovation involves the conversion of new knowledge into new products, processes or services and then its real application of this new product, process or service. The standard viewing of innovation can be called "technological pressure", which means new knowledge defined by technologists and researchers. An alternative approach to innovation can be characterized as "pull of the market", which reflects a view of innovation beyond invention, and highlights the user, not the manufacturer as the representative of the source of major innovations (Johnson, Whittington, Scholes 2011).

The interpretation of innovation, especially by the public, still presents a number of inaccuracies. Innovations have been perceived for a number of years as a direct result of research and development activities. The actual design and implementation of innovation was associated with the so-called linear model (currently, innovation is associated mainly with the non-linear model), under which innovations are implemented through a sequence of several distinct phases. The initial phase presents basic research, followed by applied research, the development and research of a prototype;

the sequence is concluded by a commercialization phase and the introduction of innovation onto the market (Ministry of Education 2013).

The presented view on the identification and implementation of innovation has been subjected to increasing criticism since the 1980s. Discussions have mainly concerned two relatively opposing views on the level of motivation as the driving force towards the pursuit of innovation. The first view was based on the strong ties of innovation - research outputs, the second highlighted the fact that innovation was particularly influenced by the pressure of the market (demand, competition) or the mobilization of human resources in businesses. The result is a consensus that innovation does not occur only on the basis of a linear process, but that it is a model of interaction which includes the mutual cooperation of participating actors. Mutual cooperation significantly enhances the ability to create and shape new knowledge (Ministry of Education 2013).

The complexity of the innovation process and its complex divisibility into separate phases is illustrated by another approach to innovation. Innovations, as mentioned above, also include their own development of new products or processes as well as know-how which served as their source. Simply put - new products are the result of a combination of innovation on several levels, namely:

- at the level of basic general (technological) knowledge or knowledge of new materials, etc., the use of which may be implemented after several years, often indirectly
- with specific new technologies,
- and on concrete, practical motives and knowledge that may be the first or last, but certainly a key impulse.

The complex nature of the innovation process and the significance of different sources of innovation was recognized throughout the 90s not only by professionals and by the wider professional community during the first decade of this century. The evidence and output are new formulations of definitions in EU documents and other multinational organizations or changes in statistical investigations pursuing innovative activities (Ministry of Education 2013).

According to the new (wider) concept of innovations there are currently distinguished four main types of innovation (in accordance with the revised Oslo manual 2005):

Product innovation - represents the introduction of a new product or service possibly significantly improved with respect to their characteristics or intended use. This includes significant improvements in technical specifications, components and materials, software, user friendliness or other functional characteristics.

Process innovation - is the introduction of new or significantly improved production methods or supply methods. This includes significant changes in production techniques, equipment and / or software and distribution systems.

Marketing Innovation - is the implementation of a new marketing method which involves significant changes in product design or its packaging, product placement, product promotion or pricing.

Organizational innovation - is the implementation of new organizational practices in business activities, in the organization of a workplace or external relations within the organization in order to effectively use the innovation capacity of the company and increase its efficiency (ČSÚ 2013).

This classification maintains the highest possible degree of continuity (ensures the comparability of data) with the previous definition of the technical innovation of a product and a process, which was used in the previous edition of the Oslo Manual 1997.

The innovation of products and innovation of processes are closely related to the concept of the technical (technological) innovation of a product and technical innovation of a process. Marketing and organizational innovations extend the range of innovations covered by the manual and belong to non-technical (non-technological) innovations (ČSÚ 2013).

3. PRELIMINARY RESEARCH - INNOVATION ACTIVITIES IN THE CZECH REPUBLIC AND THE MORAVIAN-SILESIA REGION

According to research The innovative activities of enterprises in the Czech Republic between 2010 - 2012 on the territory of the Czech Republic in selected sectors of the economy, 43.9% of enterprises out of the total number of economically active enterprises engaged in innovative activities. 35.6% of businesses introduced technical innovation and 31.6% introduced non-technological innovation (CSO, 2014).

If we look at the structure of enterprises by size and ownership structure, the most innovative were large enterprises (78.7%), they were followed by medium-sized enterprises (57.6%) and the lowest share of innovations was achieved by small businesses (38.2%).

In terms of ownership structure, foreign-owned enterprises innovated more (54,1 %) than domestic companies (41 %).

Table 1: Share of innovative enterprises in the total number of enterprises by type of innovation activity

	ČR	Small enterprises	Medium-sized enterprises	Large enterprises	Domestic enterprises	Foreign affiliates
Innovative enterprises in total (%)	43,9	38,2	57,6	78,7	41,0	54,1
Technically innovative enterprises (%)	35,6	29,8	49,3	71,7	32,9	45,2
Non technically innovative enterprises (%)	31,6	27,3	42,1	58,4	29,2	40,4

Source: ČSÚ, 2014

In terms of regional breakdown, according to NUTS 2, the most innovate companies were in Central Moravia (47.4% share of innovative enterprises), followed by Prague (45.1%). Enterprises in Central Moravia also introduced the most technical innovations of all the regions.

In all the regions, enterprises were more dedicated to technical innovation rather than non-technical . In terms of businesses in the capital city of Prague, the proportion of those who introduced technical innovation (34.8%) was almost equal to the proportion of those that introduced non-technological innovation (34.5%).

The least amount of innovation was carried out in the Southwestern (38,7 %) and Moravia – Silesia (42,6 %) regions. The proportion of enterprises introducing technical innovations in Moravia – Silesia was 33,8 % and the share of non - technical innovations was 30,9 %.

Table 2: Share of innovative enterprises in the total number of enterprises according to type of innovation activities in the regions NUTS2, 2010-2012

Region	Innovative enterprises in total (%)	Technically innovative enterprises (%)	Non-technically innovative enterprises (%)
Central Moravia	47,4	38,6	32,9
Praha	45,1	34,8	34,5
Southeast	44,4	37,4	31,0
Northeast	43,3	36,5	30
Southwest	43,1	35,9	29,5
Central Bohemia	42,6	34,1	32,0
Morava - Silesia	42,6	33,8	30,9
Northwest	38,7	31,0	27,6

Source: ČSÚ, 2014

In the following research, we are going to have a closer look at the structure of innovation and the effects of implemented innovations in the Moravia – Silesia region.

4. METHODOLOGY OF RESEARCH

The research itself was preceded by the processing of research procedure, which included a selection of respondents, definition of the region, a selection of methods and techniques applied to the data collection and subsequent analysis.

The initial data for the basic sample of respondents represents the sectoral classification of economic activities - CZ-NACE (compliant with NACE rev.2 1. 1. 2009), section C – THE MANUFACTURING INDUSTRY. Said section includes production activities, but also activities related to the provision of services. The selected location was Moravskoslezský region.

A database of companies and institutions – the ALBERTINA database - was used to obtain basic data of businesses and institutions. This database provides basic and contact information of economic entities.

The research was carried out from June to August 2014 with the subsequent data and output analysis.

One of the requirements for statistical data processing is the representativeness of the sample; i.e. the representativeness of the selected set. Economic entities were selected based on the CZ-NACE classification, the principal criterion being their main activities.

Subsequently the division of the core set was carried out according to other criteria - namely the size of the company, legal status, ownership, region.

It is therefore a so-called. stratified sampling from an incomplete statistical survey because the survey has not been carried out within the selected set.

Random selection, which enables to observe the randomness in the selection of specific respondents, was used.

A questionnaire was used as a technique for the collection of data . The obtained primary data was processed through statistical analysis - in particular, analysis of dependence using the Spearman correlation test was selected.

5. RESULTS OF RESEARCH

The research in question was focused on innovation in small and medium business - specifically to determine which innovations are implemented in this area, what are the effects of their implementation on selected areas and to determine whether it affects the size of the enterprise by the effects of implemented innovations within the selected areas.

Moravskoslezský region was the region selected for the research and it was necessary to select at least 30 respondents in order to meet the requirement of distinction between a „small set“ and a „big set“ (Dorba 2010).

Based on the responses of respondents recorded within the pilot study, 1,100 respondents were interviewed.

Table 3: Returnability of questionnaire

Number of respondents	1 100
Number of undelivered questionnaires	45
Number of discarded questionnaires - reluctance to cooperate	12
Number of addresses respondents	1 043
Number of returned questionnaires	108
Real return	10,35%

Source: own processing

In terms of statistical processing of the results of the questionnaire, respondents were addressed according to selected criteria, among which the following were included: company size (number of employees) and the core business (production and / or service).

The classification of respondents according to a selected viewpoint - line of business, was based on a methodology which is commonly used by e.g. the Czech Statistical Office.

Of the 87 respondents, 69 (i.e.79,3%) of them said the main line of business was production and 18 (i.e.20,7%) of respondents said the main line of business was service delivery.

Enterprise size in terms of the number of employees was chosen as an additional criterion for the classification of respondents. The addressed respondents were, in accordance with the classification of the European Commission 1, broken down into micro, small and medium enterprises.

The following information was revealed based on the questionnaire - the majority of respondents represent enterprises with core business - manufacturing (79.3%) and in terms of company size it is the small company category (52.9%).

More than 50% of respondents pay attention to innovation activities (in this investigation innovative activity was not perceived as a final innovation).

Respondents (93%) who reported that they focused on innovative activities also stated that they had carried out a concrete innovation within a specified time period. The most reported type of an implemented innovation was *product* innovation, followed by *process* and *organizational* innovation and the least represented was *marketing* innovation. The largest group of respondents in terms of implemented innovations was represented by small businesses (11-50 employees).

In terms of the effects of implemented innovations to expand the product range, the majority of respondents stated a rather strong impact; with regards to the growth of market share, 86.42% of respondents said the influence was strong, rather strong and quite weak. In terms of sales growth, the majority of respondents (60.49%) stated a strong effect and a rather strong effect, which also corresponds with the indicated impact on profit growth area (59.26%). In terms of impact on the creation of new jobs, the majority of respondents stated that the influence was rather feeble (72.84%).

Another phase of the research was aimed at determining whether there is a correlation between the effects of implemented innovations within selected areas and business size. The following areas were selected:

- expansion of product range,
- market expansion or increase market share
- sales growth
- profit growth,
- creation of new jobs.

A separate test was carried out for each area.

Research question: Does the size of a business influence the effects of implemented innovations?

Hypothesis H0: Effects of implemented innovations do not depend on company size.

For each area a separate test carried out. Outputs for each area are given within the text below.

Table 4: The outputs of statistical analysis

<i>Hypothesis</i>	<i>Acceptance / rejection of the hypothesis</i>	<i>Dependence / independence between variables</i>
Effects of implemented innovations do not depend on company size.	Product range – not rejected Market share - rejected Revenue growth - rejected Growth in income - rejected Creation of new jobs - rejected	Correlation was established. in terms of the overall assessment.

Source: own processing

Based on the analysis of obtained outputs, the following can be stated: in terms of examining the impact of effects of implemented innovations on the development of the company in selected areas, very weak to moderately weak dependence was identified; very weak dependence was identified in the criteria - *expanding the product range*, weak dependence was identified in criteria - *market share growth and job creation*, moderately weak dependence was identified in economic indicators, namely *sales growth and profit growth*.

In summary, the most significant impact in terms of the effect of an implemented innovation was identified in the economic field; the least significant effect on criteria focusing on market monitoring and less significant effect on criteria focusing on the social area.

6. DISCUSSION

The above statistical data showed that Moravia - Silesia is one of the regions with the lowest innovation activity both in technical and non-technical innovations. It is clear from the following research that innovative activities of enterprises play a vital role in the further development and businesses that innovate record specific effects in the economic field.

It is evident that most innovation takes place in product innovation in all the regions and regardless of company size.

It would be interesting to extend the research of innovative activities in the Moravian-Silesian Region to other aspects e.g: how innovative activities of enterprises differ in terms of individual sectors, size of companies and how innovative activities are linked to the sector in which the company operates. The next step would be a deeper look at individual types of innovations and their importance not only in the economic, but also in the social sector.

Given the number of different definitions of innovation which are mentioned in e.g. chapter 3, it is of utmost importance to define terminology and standardize methodology. This is one of the conditions of relevant research results and their comparability. A significant help in this regard in particular is the methodology Manual OSLO (Oslo manual 2005).

CONCLUSION

The outcomes of the research show that the issue of innovation in small and medium enterprises is indispensable. It is undisputed that the area of small and medium-sized businesses has long-lasting dominance within society as a whole, not only in economic but also in social and societal issues.

Location selected for the implemented research (Moravian-Silesian region) was chosen because it is a region, which over the past twenty years has undergone extensive restructuring, which has significantly affected the overall development of the region itself. One of the major negative impacts of the afore-mentioned restructuring is high unemployment. Over the past five years this region has shown an increasing trend in the number of patent applications and has joined those regions where there is a relatively high number of such applications. It is also positive that this activity is mainly based on business practices and higher education environment. This fact corresponds to one of the outputs of the research i.e. - the highest number of implemented innovations is represented by product innovation. A significant impact in terms of the impact of an implemented innovation was identified in the economic area and less significant impact on the creation of new jobs. It follows that there is a significant potential for the realization of follow-up research activities, which may be focused on the importance of innovation in the social sphere.

REFERENCES

- [1] Anderson, N., Potocnik, K., Zhou, J. (2014). Innovation and Creativity in Organizations: A State-of-the-Science Review, Prospective Commentary, and Guiding Framework, *Journal of Management*, vol. 40, no.:5, pages 1297-1333.
- [2] Baldwin, J.R. – Gellatly, G. (2003). *Innovation Strategies and Performance in Small Firms*. Cheltenham, UK: Edward Elgar. ISBN 1-84376-370-2
- [3] Dytrt, Z. - Stříteská, M. (2009). *Efektivní inovace: odpovědnost v managementu*. Vyd.1. Brno: Computer Press, 150 s. Praxe manažera. Business books. ISBN 978-80-251-2771-1.
- [4] Jakobsen, L. K. (2006). *Erfolgsfaktoren Bei Der Unternehmensgründung: Entrepreneurship in Theorie und Praxis*. 1. Auf. Wiesbaden, ISBN – 10 3-8350-0379-8

- [5] Johnson, G. - Whittington R., - Scholes, K. (2011). Exploring strategy. Ninth edition. Edinburg: Pearson Education, 2011. ISBN 978-0-273-73202-0 101.
- [6] Kirby, D. A. (2009). Enterpreneuership. Glasgow: Bell Bain,Ltd. ISBN 0077098387
- [7] Kislingerová, E. a kol. (2008). Inovace nástrojů ekonomiky a managementu organizací. Vyd.1. V Praze: C. H. Beck, 293 s. C. H. Beck pro praxi. ISBN 978-80-7179-882-8.
- [8] Kislingerová, E. a kol. (2011). Nová ekonomika: nové příležitosti?. Vydání 1. V Praze: C. H. Beck, 322 s. Beckova edice ekonomie. ISBN 978-80-7400-403-2.
- [9] Košturiak, J. - Chal, J. (2008). Inovace vaše konkurenční výhoda!. Brno: Computer Press. ISBN 978-80-251-1929-7.
- [10] Narayana, V. K. - Colarelli O'Connor, G. (2010). Encyclopedia of Technology and Innovation Management. Wiley John&Sons. ISBN 978-1-405-16049-0.
- [11] Rasheed, H. (2012). Innovation Strategy: Seven Keys to Creative Leadership and a Sustainable business model. Bloomington: Rasheed Howard ISBN 978-14697-8044-3
- [12] Schüz, M. - Nový, I. - Kučera, D. (2015). Dlouhodobá podniková odpovědnost a etika v manažerském vzdělávání. Praha: Nakladatelství VŠE, OECONOMICA. ISBN 978-80-245-2121-3.
- [13] Veber, J. - Kotlasová, E. (1992). Management marketingu, inovací a kvality. Praha: Vysoká škola ekonomická. ISBN 8070799749, 9788070799741.
- [14] Veber, J. - Srpová, J. (2005). Podnikání malé a střední firmy. Praha: Grada Publishing. ISBN 80-247-1069-2.
- [15] Vlk, A. (2006). Jak dál v inovačním podnikání? In: Sborník příspěvků z mezinárodní vědecké konference Znalostní ekonomika. ISBN 80-86754-63-9.
- [16] Český statistický úřad, 2013 [online]. Praha: Český statistický úřad. Poslední změna 11. 4. 2013 [consulted: 11. 4. 2013]. Available from: <http://www.czso.cz>
- [17] Český statistický úřad, 2014 [online]. Praha: Inovační aktivity podniků v ČR v letech 2010 - 2012. [consulted: 8.12. 2015]. Available from: <http://www.czso.cz/csu/czso/inovacni-aktivity-podniku-v-cr-2010-az-2012-up1r9kkmj3>
- [18] Dorba, M. 2010 [online]. Zpracování náhodného výběru – popisná statistika [online]. Ostrava:VŠB: Technická univerzita v Ostravě, [consulted: 2014-01-9]. Available from: homet.vsb.cz/~dor028/KMORII_1.pdf.
- [19] Ministerstvo průmyslu a obchodu, 2013 [online]. Praha: Ministerstvo průmyslu a obchodu © 2005. [consulted: 25. 2. 2014]. Available from: <http://www.mpo.cz/>
- [20] OECD, 2005 [online]. Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data, 3rd Edition. [consulted: 5.12.2015]. Available from: www.oecd.org/sti/oslomannual

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REAL SILVER AND ITS INVESTMENT AND BUSINESS OPTIONS

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ABSTRACT

The article deals with investment and business opportunities offered by silver. Silver is the metal used in industry and for investing at financial markets. The main problem related to this real commodity is the issue of “the undervaluation” of its investment options, if compared to gold. If considering silver as the investment option, its investment potential is significantly enhanced by its industrial usage. The aim of this paper is to highlight business and investment opportunities for both professionals and non professional investors at the commodity markets. The price growth of this investment and industrial metal can generate profits for the investors. And on the other hand, industries which cannot do without silver in their production may efficiently utilize the knowledge of setting up its price at the markets.

KEY WORDS

Investment, silver, business, commodity, industrial metal.

INTRODUCTION

Due to significant instability of current global financial markets it is not easy for the investors and entrepreneurs to make decisions on their investments. It is hard to decide the right amount and the right timing for investing one's own or others' resources at the lowest risk and with highest yield. Investing itself and business environment are not risk-free. For the investments it is silver which could be the right option. Though silver is the investment metal and the industrial metal, surprisingly it has not been attracting the investors' attention like gold does.

The investment potential of silver is rather undervalued, if compared to gold, even despite the fact that the investment potential of silver is enhanced by its industrial use in production. Currently there exists no adequate substitute with the features corresponding to the production and physical properties of silver. The aim of the article is to draw attention to the investment and business opportunities offered by silver, the metal so widely utilized in a variety of industries. Most non professional investors associate value with gold; silver is still neglected even though the industrial use of silver, if compared to that of gold, is more complex.

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Another fact is that there is a lack of information among the business community, even though these communities do use this metal. There are industries, e.g. electronics, which could not do without the existence of silver. Restrictions or bad timing of silver production significantly affect the price of products; substitutes are rather expensive, and in some cases silver cannot be replaced at all.

The investor who makes the decision to invest in physical silver, e.g. in the form of investment ingots, has to purchase silver from entrepreneurs operating mostly at the secondary markets. Investors are well familiar with traded commodities, on a daily basis in business or everyday life. Most frequently they come across agricultural products traded at the world commodity markets: coffee, milk, soy, orange juice. The prices of raw material at commodity markets and in business environment are influenced by to a high extend by consumers, it means "inhabitants", non investors. It is the consumer who significantly affects the amount of purchases and trade at the markets worldwide, subsequently and directly reflected in the economic results of the companies involved. Quantification of such effects is interesting, but in no way easy; the process similar to the quantification of the GDP in current globalized world.

1. COMMODITY MARKETS

Trading in securities in the former Czechoslovak Socialist Republic started in late 1990s. The Czech Republic and other countries of Central and Eastern Europe changed the political structure and moved from a centrally planned economy to a market economy at that time. Nowadays, a wide range of investment products, domestic and foreign companies included, aimed at professional and non professional investors. Individuals can make decision on their investments: when, how and how much to invest. Investment opportunities arise from business activities, which result from the outcomes of sophisticated financial engineering.

The main attention is currently drawn to stock and bond markets mainly, while the commodity markets seem to be rather neglected. Nesnidal and Podhajský (2007, p. 13) believe that *the commodity market is one of the biggest markets in the world if considering the amount of purchased and sold commodities; the amount of purchased and sold commodities is absolutely higher than the daily amount of purchased and sold companies in the form of shares*. Also land devastation, population growth and climate changes, which stand for the three aspects significantly influencing the production, extraction and return of raw materials, must be considered, because these affect the prices at the world commodity markets, too.

Polách (2012, p. 129) emphasizes the urgent need for the transformation of financial investments into real investments, because the former can produce nothing. Products are traded at the commodity markets in the paper form and the real form. However some raw materials purchased at these markets can be maintained and purchased both in paper and real forms, thus offering the advantage if compared to equity and bond markets. The real or physical form is typical for the investments in gold and silver, and where appropriate, in products made of these precious metals: jewelry, coins.

If the investor decides to invest at the commodity market via the investment instruments in the paper form, he may decide for the shares. These securities relate, for instance, to electric energy, oil. Provided the price of the electric energy grows, the profit will be generated both for the joint-stock companies and investors. And otherwise, provided the electricity price falls, both the investors and businesses will lose (and the share price will be negatively affected as well). According to Syrový and Tyl (2014, p. 112), commodity shares represent 30% of the global stock markets. Commodity markets offer more products in paper or de materialized forms: commodity funds, ETF products, etc.

The advantage of the investment in commodities is mentioned by Shipman (2007, p. 78). *While the inflation has negative impacts on stocks and bonds, commodities are affected by the inflation in a positive way.* Properties of some commodities, especially those of precious metals, for instance gold, silver, make them resistant against the inflation, though we have to underline that in the real forms only.

Commodity markets offer advantages and risks. It is risky to make a decision not to conclude commercial contracts during the month the commodity has to be delivered, in order to eliminate the must to accept the commodity in its physical form. If the contract is to expire in September, the speculator will get rid of the commodity during August. And if the investor fails to leave the position in time, he will receive only the confirmation from the warehouse that the commodity was stored. Such business transactions increase the total costs (extra costs for storage), and thereby may decrease the profit, or increase the loss (Rogers, 2008). Additionally, commodity markets influence the yields, the only yield to be achieved in commodity trade is the capital yield. You cannot get any additional income, e.g. from the property renting. The issues of real estate markets are described by Squires, Heurkens (2016), Brueggeman, Fisher (1993), Zheng, Chau, Eddie (2015). And on the contrary to the stock market the commodity market cannot generate the dividend yield. The dividend policy for shares is described by Sejkora, Duspiva (2015), Jo, Pan (2009). Therefore the negatives of investments in commodities should be carefully considered by investors.

Commodity markets distinguish two large groups of traded raw materials. The first one consists of renewable commodities, represented by agricultural products especially: wheat, corn, coffee, soybeans. The second group includes non-renewable resources, represented by oil, energy, aluminum and silver. Some metals of the non-renewable resources, silver included, are used for the investment and for the production in industries.

Regardless of the market, the investor decides for, current conditions set up for individuals and businesses are generally the major aspects for investments. These may be supportive or discouraging; defined by the business environment, government, and current legislation. Purchasing power of investors and their willingness to invest accumulated funds in order to get gains indicate the transparency level of the investment environment within the current legislation context.

1.1 INVESTMENT SILVER

Due to significant current instability at stock and bond markets the investors' behavior has changed. Globalization and interdependence of world economies, financial markets included, are the major factors. Local crises expand to other countries as the consequence of the global development because most countries apply elements of the market economy and elements of global investing at world markets. Pavlát (2013) highlights specific elements within the globalization context.

However, investment plans can be realized even during the instability period. The real investments are the option especially during the economic and political instability, or at the times when the inflation is expected to grow. Such investments are represented by art collections, pieces of arts, properties, lands, real business and commodities; regardless of the age, education, social status, income, profession, etc, of potential investors. Investments in real activities are therefore considered a natural phenomenon, in terms of the economics, and a well founded phenomenon, in terms of the theory of cyclical economic development. Current demographic situation inspires young generation to be interested in and committed to their financial security in retirement.

Investments in real assets at commodity markets, silver mentioned, do offer the options. Each investor is the individual with his own economic background and attitude to risk. For each individual there exists the indifference curve, as described by "Markowitz", which can help set up

the optimal investment plan just for him. The theory applies to all investors, however, as the investors are getting older, their "value pyramid" changes, and these may prefer "tangible" reasoning for the funds invested. Novotný and Polách (2014) focus on investment strategies of the seniors in the Czech Republic. Investments in real silver are promoted by current market environment. Silver is considered competitive to gold, but the features and investment potential of silver is not appreciated by beginning and non professional investors, so it remains the undervalued metal.

There are two kinds of investments in silver in its real form. The first option is to invest in silver ingots and a brick, the second option is to invest in silver coins. Investment ingots described by portal Auportál (2016) 13. 1. 2016, reached the following values: e.g. 50g – 1076 CZK, 100g – 1882 CZK, 250g – 4370 CZK, 500g – 8403 CZK, 1000 g - 16 404 CZK. The prices are set per piece, VAT included. The ingots of 500 grams and 1000g have the highest liquidity. Česká mincovna (2016) recommends the following investment coins made of silver: AmericanEaglestand 1 USD for 553 CZK, € 1.5 WienerPhilharmonikerstand for CZK 524 CZK, 200 CZK silver coin Jan Pernerstand for 450 CZK. The prices are set per coin, 13. 1. 2016, VAT included. Investments in precious metals, silver included, are popular in Asia, and became a tradition in India.

The resources of silver are fewer and lesser than those of gold, which significantly enhances its investment potential. Compared to the price of gold, the silver ratio 15: 1 is recommended, but at present, the ratio reaches 60: 1. The world's reserves of silver are 5 times less than those of gold. Based on the facts stated above the price growth of silver can be expected especially due to its use by industries. Dramatic price rise within 10 to 15 years is forecasted by analysts; some experts expect 100% increase (GoldenGate, 2016). The need to implement properly the aspect of time in the investment plans for the real silver is emphasized by Kuběnka (2015).

Investments in silver are the way to "keep and maintain the value". However, in order to maintain or increase the value, the investor needs three years for his disposal, at least. And in order to achieve a yield, the investor needs five years, at least. While cash deposited on current accounts generates little or almost no yield (related to the inflation), the value of silver in its real form increases. Sweden, and some other countries, is considering abolishing the cash money; whereas abolishing real silver is not realistic due to its use by industrial production and investments. Silver provides protection. Products made of silver (e.g. coins) are portable and affordable for small investors. But you to store silver safely.

1.2 SILVER; ITS IMPORTANCE FOR BUSINESS

Silver is used for the investments, but it is also a very important industrial metal. Its properties make it ideal for a wide range of applications in manufacturing companies, and at the moment there is no adequate substitute. Rejnuš (2010) and Polách (2012) emphasize the importance of investments in commodities, mainly the importance of real investments in order to support and develop business environment in services and products.

Purchase of any commodity can certainly reduce or increase the costs of businesses involved, depending on the purchase timing and related issues (e.g. current price, storage, exchange rate). Efficient use of raw materials, crucial for the commodity markets and for efficient production per production unit, silver included can lead to significant savings in production, moreover if sophisticated techniques are applied (Drábek, Polách, 2008), Decreased production costs generate higher profits, and enhance competitiveness. The importance of silver is revealed in the statistics bellow:

- Approximately 85% of world production goes into industries, the remaining portion amounting to 15% into investments. (GoldenGate, 2016). In the Czech Republic 160 tons of silver is processed

annually, while the global production per year is approaching almost one billion ounces. Silver is used in the production of photovoltaic cells; 70 million ounces are estimated to be utilized by this industry this year. Also electronics, technical, automotive and other industries cannot do without silver. Silver is nowadays used also for the production of window glass with specific thermal isolation properties; a new technology with positive effects on the environment and the housing costs (Svět průmyslu, 2015).

Price increase of silver prices is closely linked to the consumption of goods and services accompanying the economic development of individual countries, and the standard of living of the population. Provided each adult of the world could achieve the standard of living allowing him to purchase a personal computer, a cell phone or a car, the consumption of silver would dramatically increase. Such an assumption seems to be realistic because it is based on the data on the economic growth in large countries (India, China, Brazil, and Argentina). The higher economic growth occurs, the higher consumption of silver must be expected.

2 RESEARCH METHODS

Analysis, synthesis, comparison, and principles of logical reasoning were used. The analysis has been used for the literature search, scientific articles and website resources, followed by the synthesis when inter relating information from available resources with the researched topic. The method of comparison was used for the comparison of the investment options for silver and gold. Investment forecasts were validated by "Commodity investment model". The model assesses whether silver is undervalued, overvalued or correctly valued.

3. MODEL EXAMPLE OF INVESTMENT IN PHYSICAL SILVER IN THE CZECH REPUBLIC

The value added tax (VAT) of 21% for silver means significant reduction of the achieved yield for small investors in the Czech Republic. Investors prefer gold to the silver, since gold is not the subject to VAT. Model examples of the sale and purchase of physical silver, adapted to the data obtained from the information portal Stříbro investice EU (2016) illustrate the reasons for low interest in investments in silver by small and beginning investors in the Czech Republic.

3.1 Purchasing investment silver

Let's assume that an individual, non-professional investor, a non VAT payer, decides to invest in physical silver with the intention to sell it within a short period. The following problem described below reflects and results from the limits set by the legislation in the Czech Republic. Business entities engaged in precious metals trade are mostly legal entities or individual entrepreneurs registered as VAT payers. These buy the investment silver as a tax-free commodity, which creates the bottleneck in trading and investing in silver. While business units may deduct the VAT in the next taxation period, individuals, non professional investors do not have such an opportunity. They have to pay the VAT at the moment of the purchase, but have to deduct the VAT when selling. The individuals have to consider the costs of the whole purchase process, for instance the trader's margin which may reach 40% (portal Stříbro investice EU (2016)). The Table No 1 illustrates the process of investment in silver by a non-professional investor.

Table No 1 Purchasing investment silver

Process of purchase	Costs in CZK
---------------------	--------------

Value of commodity at purchase	= 5 000
Trader's margin 10 %	$0,1 * 5000 = 500$
VAT 21 %	$0,21 * 5 500 = 1 155$
The total purchase price	6 655

(Source: own)

As defined in Table No.1 the costs may significantly limit the investments in physical silver. Extra costs, it means the costs added to the value of commodity at purchase, may stand for 25%, i.e. a quarter of the purchase price. The trader's margins should also be considered; these could achieve even higher values.

3.2 Selling the investment silver

Problems related to the purchase of silver may even escalate if the investor decides to sell silver to another person. Let's assume that the investor decides to sell a specified amount of physical silver, he has bought, to a VAT payer. Let's use the data from the Table No 1 with the selling price of silver of 5000 Czech crowns. The model example of selling silver is illustrated in Table No 2.

Table No 2 Sale of investment silver

Process of selling	Revenue in CZK
The price estimated by the trader	= 5 000
Trader's margin 10 %	$0,1 * 5000 = 500 = 4 500$
Bought from another trader (authentication) 5 %	$0,05 * 4 500 = 225 = 4 275$
Other costs, loss of original documents 1 %	$0,01 * 4 275 = 42,75 = 4 317,75$
Total revenue after selling	4 317,75

(Source: own)

Table No 2 shows the final revenue of 4 317 CZK achieved by the non-professional individual. In order to increase the revenue some factors described in the table could be eliminated: e.g. by selling the commodity to the same trader, providing proper and correct documents. Damages caused during the process reduce the price.

If the investor decides for both above mentioned commercial transactions he will experience a significant loss. The physical commodity was bought for 6 655 CZK, but sold for 4317.75 CZK, so the loss expressed in monetary units equals to 2 337.25 CZK and expressed in relative terms equals to 35.12 %. However, in reality the investors may achieve slightly more positive results.

4. POSITIVE PREDICTIONS FOR INVESTMENTS IN SILVER

The investor ready for his first investment should consider investment predictions related to his specific plans. To invest via the instruments with no or low growth potential is not the solution, especially due to potential risks. Current market conditions are favorable for the investments in physical silver, in the forms of ingots, bricks, and coins. For the investments in physical silver, the investment options by Novotný, Kruml (2016) and experts' estimates can be used. The data were provided by the company The Silver Institute (2016), which has been engaged in the silver issues

for years. Table No 3 shows the silver price history expressed in US dollars per ounce in years 2011-2015.

Table No 3 Silver price history expressed in US dollars per ounce from 2011 to 2015

Year	High	Low	Average
2015			
2014	22,05	15,28	19,08
2013	32,23	18,61	23,83
2012	37,23	26,67	31,15
2011	48,70	26,16	35,11

(Source: The Silver Institute, 2016)

The decision must be made within the context: The first condition concerns the latest and updated information (e.g. provided by The Silver Institute). The second condition concerns the right timing of the purchase or sale, which significantly affects the investment success. The third condition is based on the assumption that silver will reach “the correct relationship” to gold, i.e. 15: 1 ratio, instead of 60:1, nowadays. Provided the conditions are met, the fourfold appreciation of the commodity value could be achieved. The investor can reach different levels of appreciation, in direct relation to the date of purchase and sale. And the final assumption is based on the highest average price.

In the model example we apply the investment option by Novotný and Kruml (2016). The investor buys one ounce of silver in US dollars at the highest average price (30.11). The purchase price of one ounce of silver is shown in Table No 3. We apply the following data for our calculations.

Option – The investor made the purchase of one ounce of silver at the highest average price of \$ 35.11 in 2011

$$FV = P_A \times 4 = 35.11 \times 4 = 140.44 \text{ \$} \frac{\text{ounce}}{\text{ounce}}$$

$$Rb = P_1 - P_A = 140.44 - 35.11 = 105.33 \frac{\text{\$}}{\text{ounce}}$$

$$r_b = \frac{P_1 - P_A}{P_A} \times 100 = \frac{140.44 - 35.11}{35.11} \times 100 = 300 \%$$

FV – expected value,

Rb – gross revenue in monetary units,

r_b – gross revenue in percentage,

P_A – average price, at which the commodity was purchased,

4 – expected fourfold price increase

P_1 – sale, we assume that an investor sells an ounce of silver after he reaches the fourfold appreciation.

Provided the appreciation is reached, the average annual gross revenue and time horizon must be considered. We assume that the investor reaches 300% appreciation in 15 years.

$$r_a = \frac{r_b}{n} = \frac{300}{15} = 20 \% \text{ p. a.}$$

r_a = average gross revenue in percentage per year,

n = number of years.

The results reveal that the investor reaches 20% of gross revenue per year during the 15 years horizon. However, if the period shortens, the investor could reach even more positive results.

The above described option demonstrates favorable appreciation of financial funds both for the financial investor, and business entities; these can keep and maintain the goods and sell it at the moment the positive predictions are fulfilled. The appreciation can be reached in a long term horizon of ten years and more, provided the positive investment predictions made by the analysts are fulfilled. Calculations confirm the importance of the right timing of the purchase. If the investor purchases silver at the lowest price stated in the Table No 3, and the fourfold growth is reached, (while based on the highest average price), even higher revenue can be expected.

5. COMMODITY MODELS FOR INVESTMENTS IN PHYSICAL SILVER

The commodity model developed by Novotný (2015) for the assessment whether the commodity is undervalued or overvalued, and for defining the right moment for the purchase and sale can be used by the investors willing to invest, or the business entity willing to purchase physical silver. The model can help the investor to refine his plans on investments in physical silver.

The model based on the technical analysis is expressed in a line graph, complemented by top (upper limit) and bottom (lower limit) parts. The investment model based on numerical values can be developed (not expressed in a graph). To be able to determinate the right price of the commodity the time horizon must be defined, i.e. the section from t_0 and up to t_1 .

Figure 1 describes the process of determining the right price.

The process consists of eight steps:

1. From the highest point of the examined time period, i.e. from the point B the p line is drawn around the latest known price C – the p line is defined by B and C points.
2. Draw q line, crossing the lowest point A , which represents the bottom, parallel to the axis x .
3. Define point D ; as the intersection of the p line and q line.
4. Draw r line crossing B point, and parallel to the axis x .
5. Draw s line crossing D point, parallel to the axis y .
6. Intersection of the lines s and r defines point E .
7. Draw t line, which is defined by points A and E .
8. An intersection of the t line and p line defines point F ; the right price for the investor.

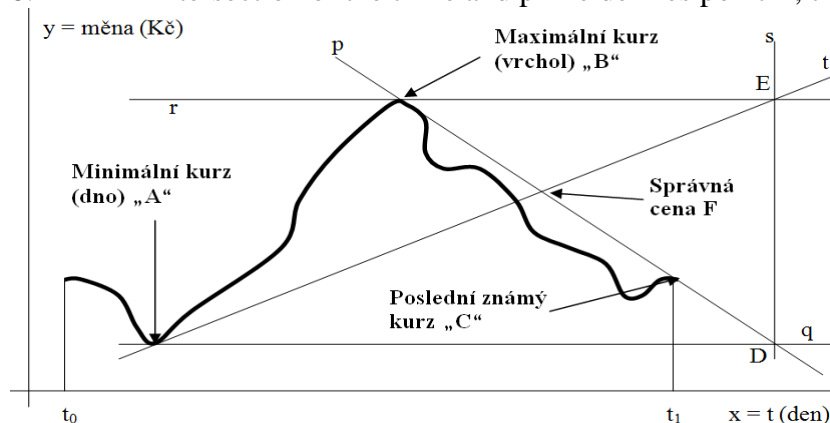


Figure No 1: Process of determining “the right” price of commodity

Source: own adaptation (Novotný, 2014)

5.1 Mathematical formula of the investment model

The model developed:

$$y = \frac{-c_x b^2_y + c_y b_y b_x - a_x b_y c_y + a_x b^2_y - b_x a^2_y + c_x a^2_y}{2a_y c_x - 2a_y b_x - 2b_y c_x + b_x b_y + c_y b_x - a_x c_y + a_x b_y}$$

The data in the formula; explanation:

1. A, B, C points

Point $A [a_x; a_y]$ = minimal price of the commodity in the selected time period

Point $B [b_x; b_y]$ = maximal price of the commodity

Point $C [c_x; c_y]$ = the latest known price of the commodity in the selected time period.

2. In the orthogonal coordinate system used for the calculation, the coordinate axis x is identified with the time period (day), y -axis stands for the currency expressed in monetary units, e.g. in Czech crowns, US dollars, Euros.

3. To simplify the calculation, the coordinate system is shifted in the direction of the x -axis to point A , and the x -coordinate basis points (i.e. A, B, C) are calculated according to the unit from 0.

From the model application we can find out whether the time for investments is the right time; provided above mentioned assumptions and conditions are met. Only certain parameters can be influenced by the investor: the length of the time horizon. Below you will find the mathematical model formulation in its general form:

$$y = \frac{-c_x b_y^2 + c_y b_y b_x - a_x b_y c_y + a_x b^2_y - b_x a^2_y + c_x a^2_y}{2a_y c_x - 2a_y b_x - 2b_y c_x + b_x b_y + c_y b_x - a_x c_y + a_x b_y}$$

a) Points A, B, C are defined

Point $A [a_x; a_y]$ = minimal price of silver in the selected time period.

Point $B [b_x; b_y]$ = maximal price of silver in the selected time period

Point $C [c_x; c_y]$ = the last known price of silver in the selected time period.

b) x -axis is identified with the time period (day)

c) y -axis is for the currency expressed in monetary units in Czech crowns,

d) to simplify the calculation the coordinate system is shifted in the direction of the x -axis to point A , and the x -coordinate basis points (i.e. A, B, C) are calculated according to the selected unit from 0.

We assume that the investor, who invests in physical silver in Czech crowns per ounce, has chosen the time period from December 21, 2015 to January 19, 2016. In table No 4 data to calculate the right price can be found. The lowest rate of silver in Czech crowns in the examined period was 342.24 per ounce on December 30, 2015. The highest rate was 356.43 on January 07, 2016, and the last known price was 349.35 on January 19, 2016. (Kurzy, 2016)

Table No 4 Data for calculation of the right price of silver

Points A, B, C	Price of commodity	Coordinates
Point A	0	x-coordinate of A point
	342,24	y-coordinate of A point
Point B	5	x-coordinate of B point
	356,43	y-coordinate of B point
Point C	13	x-coordinate of C point
	349,35	y-coordinate of C point

(Source: own adaptation (Novotný, 2015))

$$\frac{-13 \cdot 356,43^2 + 349,35 \cdot 356,43 \cdot 5 - 0 \cdot 356,43 \cdot 349,35 + 0 \cdot 356,43^2 - 5 \cdot 342,24^2 + 13 \cdot 342,24^2}{2 \cdot 342,24 \cdot 13 - 2 \cdot 342,24 \cdot 5 - 2 \cdot 356,43 \cdot 13 + 5 \cdot 356,43 + 349,35 \cdot 5 - 0 \cdot 349,35 + 0 \cdot 356,43}$$

$$y = 350.3 \text{ CZK}$$

Calculations reveal that silver is the undervalued investment in the selected time period, and that silver is the commodity worth investing. The commodity has the investment potential for investors and business entities.

5.2 DISCUSSION

Each investment might be risky, and the fact is that we can influence some risks only. Systematic risks are hard to influence since these result from the economic situation in each economy. They are labeled as “beta” risks, and are usually segmented by industries. The tax burden ranks among the beta risks. The tax may be increased, reduced or completely abolished, depending on current political representation. Predictions by renowned experts and analysts forecasts affirm positive future for this precious and industrial metal, with the only problem related to is the time horizon; time needed for reaching the appreciation of physical silver. Both professional and non-professional investors should be patient.

Non-systematic risks can be significantly reduced by portfolios, investments groupings, which due to their characteristics (negative correlation, 27 and more.) can minimize the investor’s losses. However, these do not allow achieving potential maximal profit. Combinations with investments in one commodity are possible, and in business practice common.

Let’s go back to our topic – silver. A bottleneck related to investments in precious and industrial metals, physical silver included, is in its handling, and safe storage. The investor can store silver at his own premises, or can hire storage capacities by the external business entity: e.g. bank, but this option will definitively increase his costs.

CONCLUSIONS

Globalization processes suffering from the lack of stability at the financial markets influence and change the behavior of “the investing community”. Investing in physical silver in the form of ingots, bricks and coins offers the option for the investors with the ambition to appreciate their funds. Experts on the current market situation, the commodity markets included, suggest investments in silver. The ratio of gold to silver 15: 1 is considered as the objective one; under the current conditions (new silver deposits discoveries, silver substitutes for the industry are not taken into consideration). The commodity model confirmed the hypothesis that silver is the undervalued commodity within the specific time period. Investments in physical silver are recommended for longer investment time horizons. Investments in “paper” silver in the form of stocks, securities, obligations, or derivatives are considered to be short-term speculation only.

The VAT still remains the negative for the investments. VAT avoidance would be the solution. Silver is resistant to inflation, its liquidity is high; it is the enduring and still undervalued asset. Our opinion is that investments by individuals so that they could create financial funds for unexpected life situations and their retirement should be encouraged by the state. Such an approach would support the transformed philosophy of supplementary pension provisions, becoming so urgent nowadays especially due to the demographic trends in the Czech Republic.

REFERENCES

Auportal (2016). Dostupný z www: <<http://www.auportal.cz/cenik/>>.

Brueggeman, B. W., Fisher, D. J. (1993) *Real estate finance and investments*. 9th ed. BurrRidge: Irwin, 908 p. ISBN: 0-256-08290-1

Česká mincovna (2016). Dostupný z www: <<https://ceskamincovna.cz/investicni-srebro-stribrne-cihly-a-slitky-397-p/>>.

Drábek, J., Polách, J. *Reálne a finančné investovanie firiem*. 1. vyd. Zvolen: Technická Univerzita, Zlín: Univerzita Tomáše Bati, 271 s. ISBN: 978-80-228-1934-3

GoldenGate (2016). Dostupný z www: <<http://www.goldengate.cz/srebro-nejlepsi-investice-teto-dekady/>>.

Jo, H., Pan, C. (2009). *Why are firms with entrenched managers more likely to pay dividends?*. *Review of Accounting and Finance*, 8(1), p. 87-116.

Kuběnka, M. (2015) *Finanční stabilita podniku a její indikátory*. 1. vyd. Pardubice: Univerzita Pardubice, Fakulta ekonomicko-správní, 88 s. ISBN: 978-80-7395-890-9

Kurzy (2016) Dostupný z www: <<http://www.kurzy.cz/komodity/index.asp?A=5&idk=88&od=1.11.2015&do=19.1.2016&curr=CZK&RF=40>>.

Nesnídal, T., Podhajský, P. (2007) *Obchodování na komoditních trzích: průvodce spekulanta*. 2. vyd. Praha: Grada Publishing, 200 s. ISBN: 80-247-1851-0

Novotný, J. (2015) *Commodity investment model and its significance for investors*. UK: University of Oxford. European Scientific Institute – International Scientific Forum (ISF), pp. 68-78. ISBN: 978-608-4642-42-8

Novotný, J., Kruml, L. (2016) *The investment potential of silver*. Mezinárodní vědecká konference – Hradecké ekonomické dny.

Novotný, J., Polách, J. *Investment of temporarily free resources of Czech seniors – present and perspectives*. *International Journal of Entrepreneurial Knowledge (IJEK)*, s. 25-38. ISSN: 2336-2952

Pavlát, V. (2013) *Globální finanční trhy*. 1. vyd. Praha: Vysoká škola finanční a správní, 214 s. ISBN: 978-80-7408-076-0

Polách, J., Drábek, J., Merková, M., Polách, J. jr. *Reálné a finanční investice*. 1. Vydání Praha: C.H. BECK, 2012, 280 s. ISBN 978-80-7400-436-0

Rejnuš, O. (2010) *Finanční trhy*. 2. vyd. Ostrava: Key Publishing, 659 s. ISBN: 978-80-7418-080-4

Rogers, J. (2008) *Žhavé komodity: jak může kdokoliv investovat se ziskem na světových trzích*. 1. vyd. Praha: Grada Publishing, 240 s. ISBN: 978-80-247-2342-6

Sejkora, F., Duspiva, P. (2015) *The position of management of Czech joint-stock companies on dividend policy*. *Economics and Management*, 18(2), p. 73-88.

Shipman, M. (2007) *Komodity: jak investovat a vydělat*. 1. vyd. Brno: ComputerPress, 133 s. ISBN: 978-80-251-1866-5

Squires, G., Heurkens, E. (2016) *Methods and models for international comparative approaches to real estate development*. Land Use Policy, 50, p. 573-581.

Stříbro investice.EU (2016) Dostupný z www: <<http://www.strebroinvestice.eu/investicni-strebro-a-dph/>>.

Svět průmyslu (2015) Dostupný z www: <<http://www.svetprumyslu.cz/svet-rocne-spotrebuje-miliardu-unci-stibra/>>.

Syrový, P., Tyl, T. (2014) *Osobní finance: řízení financí pro každého*. 2. vyd. Praha: GradaPublishing, 220 s. ISBN: 978-80-247-4832-0

The Silver Institute (2016) Dostupný z www: <<https://www.silverinstitute.org/site/silver-price/historical-prices/london-fix-price/>>.

Zheng, X., Chau, K. W., Eddie, C. M. (2015) *Liquidity risk and cross-sectional return in the housing market*. Habitat International, 49, p. 426-434.

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BINARY OPTIONS AS A MODERN FENOMENON OF FINANCIAL BUSINESS

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ABSTRACT

Binary options are a new instrument of the financial market. The aim of this paper is to analyze the use of binary options with trading and to illustrate this on the practical example of trades based on Bollinger bands indicator. Currency pair EUR/USD and 6912 time series values of this instrument will be put to analysis. The contribution will be evaluated 8 strategies based on Bollinger Bands. There will be used a backtesting method. From the results follows the most trades could have been realized with the use of Bollinger bands with a double deviation. This strategy, however, also showed the greatest percentage of failed trades. On the contrary the fewest transactions could have been carried out with Bollinger bands with a triple deviation and the MACD filter.

KEY WORDS

Binary option, Bollinger bands, backtest, forex

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INTRODUCTION

Binary Option is a relatively new tool of the financial markets. Their history dates back to 2008. They are considered very risk investments. Trading binary options, of course, requires a thorough analysis of the appropriate market. By means of technical analysis the development of underlying asset can be predicted to some extent and thus binary options can be put into very attractive investments in terms of revenue. In this paper we used a technical analysis as a tool for prediction of exchange rate change.

The aim of this paper is to analyze the use of trading binary options and to illustrate this on the practical example of trades based on the Bollinger bands indicator. Eight strategies where Bollinger bands are the basis will be subjected to the analysis.

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To realize the objective a method of back-testing will be used for a period of one month in a five-minute time frame. This means that 6912 exchange rate values were subjected to the analysis. The currency pair EUR/USD has been used as an underlying asset for its high liquidity.

1 THEORETICAL REFERENCE

As stated by Rick Thachuk (2010) „binary options have, for some time, been available over the counter but they are typically marketed as exotic options to institutions and often packaged with other derivative-type products”.

History of binary options is relatively young. As reported by Jurník (2013) it dates back to 2008, when the financial instrument was introduced to the public as a marketable asset at the Chicago Board Options Exchange (CBOE). American Stock Exchange and Chicago Board Options Exchange (CBOE) listed binary options on select stocks and indices. However, these have not attracted any significant retail customer base.

However, according to Jaworsky (2006), the first binary options were presented by CBOE at a press conference on 10 July 2006 as one of its main financial innovation. Due to its simplicity, binary options have become very popular among traders and today are widely traded around the world. The huge interest in trading binary options also meant the emergence of many new brokers, who started to specialize in this very business instrument. Today, there exist approximately four hundred of them.

During the last few years, though, a web-based electronic retail market has developed that is becoming popular, especially among investors with little prior investment experience or who have limited capital.

According to Cofnas (2013) „this nascent market is reminiscent of where the retail forex market was eight or 10 years ago. It is a new investment alternative with low cost entry where all trading is conducted over a web-based, real time platform on which customers can trade with a simple click of the mouse”. Until recently they were hard to obtain, but a new generation of web-based electronic trading platforms, as well as several market innovations designed to simplify the trading decision, are generating excitement and activity in retail binary options trading.

Although the first trades were realized on the CBOE (Jaworski, 2006), today the vast majority is carried out on the Over the Counter markets (OTC). OTC is a method of trading when market participants trade directly together. In practice, the counterparty of the majority of the trades is one of the brokers.

As stated by Miyake, et al. (2013) „Binary options are popular in OTC markets for hedging and speculation. They are also important to financial engineers as building blocks for constructing more complex option products. Thus, binary options are simple but give important implication in considering various option pricing problems,,.

Binary options are not only interesting investment instrument, but also an important tool for designing complex financial derivatives such as equity-linked securities (ELS). They can even form the basis of several exotic options such as asset-or-nothing options, supershare options, gap options etc., as stated Kim Hong-Joong, et al. (2011).

1.1 Types of Binary Options

A binary option, also called a digital or fixed return option, has only two possible outcomes at expiry, each of which pays out a fixed value, depending on whether or not a certain condition has been fulfilled (Jurník 2013). There are several types of binary options.

The basic type is called the **High / Low binary option**. If a high option is used, then a predetermined profits encashed in case that at expiry the price of the underlying asset will rise by one or more ticks (respectively pips for currency pairs). With the Low option it's quite the reverse. An integrated, predetermined profit is encashed in case of fall in the underlying asset. This type of option is the most common and it may be obtained at each broker running a business with binary options (Thacuk, 2016).

Another type is **Above / Below** binary option. In this case, we estimate that the price at expiry is above or below a certain price level. This price level is usually different than the current price, which in the previous case is known as the strike price.

A third possible option is a type **Touch / No Touch** binary option. This option is profitable if it reaches (with touch option), or does not reach (with no touch options) predetermined boundaries in the time before expiry.

In the case of transactions with the type of **Boundary** binary options, the profit is realized in the case that at the moment of expiry the price of the underlying asset will be situated within predetermined boundaries.

The only kind of binary options, with which time doesn't matter on closing the deal but the price, is called KIKO (Knock-In and Knock-Out). A broker outlines two price levels, one above and one below the strike price. The task of the trader is to correctly predict which of these price levels will be hit sooner, while it does not matter when it happens.

The most complicated kind of binary options is known as the **Ladder**. Several price levels which form an imaginary ladder on each side of the current price are stated by the broker. A trader can speculate, below or above which level the rate at the expiry will be. Issued profitability for each level is not fixed until opening trade but varies depending upon where the current rate is. This type of option, however, is not common, and most brokers do not offer it.

Further options can be divided according to the expiry date. This can vary from minutes to days. Usually the longest time binary option is offered with monthly expiration. However more popular are according to Thachuk (2010) shorter options with an expiry of 5,15 minutes, an hour or a day. In this paper, a 15 minute binary option is used.

1.2 Option Valuation

Let us assume that the underlying assets follow geometric Brownian motions. Based on no arbitrage arguments and no cost for trading. Then the awards binary option can use Black and Sholes derived equation for the valuation of European stock options.

Today quite a lot of researchers deal with the option valuation including binary option and thus new methods for valuating options arise. For example Hong joong and Kyoung-sook Moonz (2011) constructed a new adaptive time-stepping hybrid difference method (Type I) and a method with the combination of two uniform meshes (Type II). They are proposed to solve the Black-Scholes partial differential equation with a pay containing discontinuities.

Further, for example, Zmeskal (2010), Miyake (2016) or Thavaneswarana et al. (2013) define valuating options on the basis of fuzzy logic."

1.3 Technical Analysis of Binary Options

Technical analysis is based on the study of supply and demand. A technical analyst's task is to recognize a situation at market, which had repeatedly resulted in a certain development of exchange rate (da Costa et al., 2015). A strategy for future timing of the purchase or sale is then constructed at this historical development.

Technical analysis works with various types of graphs, the most widely used is the candlestick chart. We distinguish between two groups of methods of technical analysis, graphical and based on technical indicators. In this paper, the indicator Bollinger bands is used in connection with filters Stochastic Oscillator, Relative Strength Index (hereinafter referred to as RSI) and Moving Average Convergence Divergence (MACD hereinafter).

2. RESEARCH METHOD

The aim of this paper is to analyze the use of trading binary options and to illustrate this on the practical example of trades based on the Bollinger bands indicator.

8 strategies will be put to analysis, where as the basis is the indicator Bollinger Bands. Those strategies are Bollinger Bands with the twice standard deviation and the treble standard deviation. There will be used a backtesting method. Currency pair EUR/USD will be put to analysis. The currency pair EUR/USD has been used as an underlying asset for its high liquidity. The length of the time period is one month (January). Price will be tested on five minutes time-frame. It means 6912 foreign currency values will be put the analysis. Candlestick charts in this paper are drawn from the program Metatrader 4.

After evaluating the prices using technical analysis, they were selected signals to buy or sell. Be traded high/low binary option with 15 minutes expiration.

Bollinger bands consist of three curves, as shown, for example, by Elder (2006). Medium (hereinafter mean) is an expression of the moving average of closing prices of length n of trading days (usually 20 day moving average). This is usually referred to as Simple Moving Average (SMA). The upper zone is equal to SMA plus r times the standard deviation and the lower band minus the same multiple of standard deviation. The mean describes the relationship,

$$SMA = \sum P_k / k, \text{ where}$$

P represents the closing price of the asset and k represent the perion considered. Standard deviation can be describe,

$$\sigma = \sqrt{\frac{1}{n} \cdot (P_k - SMA)^2}$$

Strategy based on Bollinger bands is based , according to Bollinger (1992), on the simple logic that if 95% of the value is inside the zone, then the intersection zone could represent a signal to change the trend so that the further developments in the exchange rate would go again between the upper and lower zone. Strategies used for the application in this article is based on the research published

by Kolková (2016). Signal for a change of the trend in this strategy is the intersection of the upper or lower zone of Bollinger bands.

Individual indicators alone, however, often provide a lot of false signals. It is therefore appropriate to combine individual indicators. Several works about relatively high uncertainty of strategies based on only one indicator have been published, for example the web BabyPips.com (2016) published the results of a five-year backtest on selected indicators. This test revealed that only MACD indicator and Ichimoku Kinko Hyo is possible to use long-term separately. Therefore, they will be added filters then, Relative strength index (RSI), Moving Average Convergence Divergence (MACD) and Stochastic Oscillator (SO).

SO is a oscillator indicator that indicates when it is probable that the current trend turns. Theory of this indicator says according to Cory Janssen et al. (2016), if the indicator is growing, exchange rates have a tendency to conclude candle on the bull and vice versa. Net stochastic (%K) can be expressed as,

$$\%K = \frac{C - L}{H - L} \cdot 100, \text{ where}$$

C is today price, L is the lowest price for a selected number of days, H is the highest price for a selected number of days. And the slow stochastic describes relationship,

$$\%D = \frac{3 - \text{sum}(C - L)}{3 - \text{sum}(H - L)}.$$

If this signal given by Stochastic oscillator is also supported by crossing the Bollinger Bands on the appropriate candle, it can be regarded as a signal to the whole strategy.

Relative Strength Index (RSI) belongs again to a group of oscillator indicators. The author is an analyst Welles J. Wilder. RSI is defined by Reinkensmeyer (2014) as an indicator, which compares the size of the growth and decline rates in an attempt to determine overbought and oversold market. RSI describes relationship,

$$RSI = 100 - \frac{100}{1 + RS}, \text{ where}$$

RS is growth in net average closing prices for a selected number of days divided downward in net average closing prices for a selected number of days.

For the strategy using RSI there is applied again relatively simple logic. The signal is when the RSI curve crosses the limit of 30% from below or the limit of 70% from above.

Moving Average Convergence Divergence (MACD) is a trend indicator that shows the relationship between two moving averages of exchange rates. The MACD is calculated by subtracting the 26-day exponential moving average (EMA) from the 12-day EMA.

$$MACD = EMA_{(k_{12})n} - EMA_{(k_{24})n}, \text{ where}$$

k represents the number of periods included in the calculation of the EMA, and n represents the relative position of the current period.

To determine the signal is then a nine-day EMA called Signal Line by Cory Janssen et al. (2016) or Elder (2006) put into the chart.

3. RESULTS

During the period under review it was possible to carry out 473 trades based on strategy Bollinger bands with twice the standard deviation. Out of these trades there were with a 15 minute binary option 206 trades profitable and 267 lossy. The use of only Bollinger bands with a double deviation is unprofitable and can be likened to a random choice of trades.

By multiple increasing of the standard deviation to treble we will reach 99.7% probability that the values of the exchange rate move in the range of both bands. It is therefore clear that the signals will be more reliable, but at the expense of their number. For a specified period it was possible to implement with 3 deviations only 17 trades. Out of these signals 12 trades would end with a profit. That is 70% of the correct signals.

Strategy with filter SO was evaluated again in a month period. When using a double deviation of Bollinger bands there occurred 63 clear signals during this period. These signals resulted in 41 profitable and 22 unprofitable trades. The Strategy provides a 65% profitable trades and can therefore be considered successful.

When using a triple deviation and a filter of stochastic oscillator there could be made only four trades for the whole period. Three of them were profitable. There were thus 75% profitable trades.

RSI filter with a double deviation of Bollinger bands provided only 40 clear signals for the period. Out of these signals 22 trades were successful. It means that under this combination of indicators there are 55% profitable trades.

Over a period of one month indicator Bolinger bands with three deviations and RSI filter has given a total of five signals. Out of these five, four signals were profitable. It can be stated that there were 80% profitable trades.

As a signal is then used the situation of the MACD and a signal line intersection or the MACD and zero line intersection, or according to Kaufman (2013) the divergence of price and the MACD indicator may be used. In this paper a fundamental intersection with the signal lines is considered a signal.

During this period it was possible in combination with a double deviation of Bollinger bands carry out 35 trades. Out of these signals 21 were profitable and 14 unprofitable, which represents 60% success rate. In the case we would eliminate the candles that intersect mean, then the success rate would be 67%.

The Bollinger bands indicator with three deviations and the MACD filter gave only one signal for the whole period. This signal was profitable. The combination of the filter and the indicator provided in this timeframe 100% profitable trades.

4 DISCUSSION AND CONCLUSION

The following table summarizes the results of the backtest. The first column includes a test strategy, the following one the number of transactions. The last column defines how many of these trades would be profitable in the case of 15- minute binary option application.

Table 1 Summary of the backtest results

	Number of Trades	Number of Profitable Trades	Percentage of Profitable Trades
Bollinger bands with a double deviation	473	206	44%
Bollinger bands with a triple deviation	17	12	70%
Bollinger bands with a double deviation Filter: Stochastic oscillator	63	41	65%
Bollinger bands with a double deviation Filter: RSI	40	22	55%
Bollinger bands with a double deviation Filter: MACD	35	21	60%
Bollinger bands with a triple deviation Filter: Stochastic oscillator	4	3	75%
Bollinger bands with a triple deviation Filter: RSI	5	4	80%
Bollinger bands with a triple deviation Filter: MACD	1	1	100%

(Source: Author, 2016)

The table shows that most trades could have been realized with the use of Bollinger bands with a double deviation. This strategy, however, also showed the greatest percentage of failed trades. On the contrary the fewest transactions could have been carried out with Bollinger bands with a triple deviation and the MACD filter.

From the results of the percentage success rate of individual trade transactions can be marked Bollinger bands strategy with triple tolerance as the most successful and the use of the MACD as a filter of unsuitable signals. This strategy showed no false signal during the reporting period. However, it should be noted that throughout the period it gave only one trade opportunity. It is a question of money management, whether a strategy providing multiple signals would not be more profitable with the limited resources at one trade. This may be a subject of further research.

REFERENCES

- [1] Babypips.com (2015) What is the Best Technical Indicator in Forex? <http://www.babypips.com/school/elementary/common-chart-indicators/what-is-the-most-profitable-indicator.html#ixzz42VT4RrgO>. Consulted: 8. 4 2013

- [2] Blain Reinkensmeyer. (2014) Technical Analysis, *Using the Relative Strength Index*. <https://www.stocktrader.com/2007/05/29/technical-analysis-using-the-relative-strength-index/> Consulted: 1.4.2016.
- [3] Bollinger, John. (1992) Using bollinger bands. *Stocks & Commodities*. 10.2: 47-51.
- [4] Confas A. (2013) Pros and cons of binary options. *Futures: News, Analysis and Strategies for Futures, Options and Derivatives Traders*. March 2013. Vol. 42 Issue 2, p 10-10.
- [5] da Costa, T. R. C. C., Nazário, R. T., Bergo, G. S. Z., Sobreiro, V. A., & Kimura, H. (2015). *Trading system based on the use of technical analysis: A computational experiment*. *Journal of Behavioral and Experimental Finance*, 6, 42–55.
- [6] Cory Janssen, Chad Langager and Casey Murphy. (2016) Technical Analysis, *Indicators And Oscillators*. <http://www.investopedia.com/university/technical/techanalysis10.asp> Consulted: 31.3.2016
- [7] Elder, A. (2006) *Tradingem k bohatství*. Tetčice: Impossible, s.r.o.. ISBN 80-239-7048-8.
- [8] Jaworski, A. (2006) CBOT Launches Binary Options. *Securities Industry News*. 18, 27, 11, 24.7., 2006. ISSN: 10896333.
- [9] Jurník, D. (2013) Co jsou to binární opce a jak to funguje. <http://www.binarni-opce.com/manual-binarnich-opci/co-jsou-to-binarni-opce-a-jak-to-funguje> Consulted: 8. 4 2013
- [10] Kaufman, P.J. (2013) *Trading Systems and Methods*, fifth edition. New York: John Wiley and Sons. ISBN 1118236033.
- [11] Kim, Hong-Joong; Moon, Kyoung-Sook. (2011) Variable time-stepping hybrid finite difference methods for pricing binary options. *Bulletin of the Korean Mathematical Society*. Volume 48, Issue 2, 2011, pp.413-426, Publisher : The Korean Mathematical Society
- [12] Kolková, A. (2016) Bollinger Bands use technical analysis in the forex business. *Aktuálne problémy podnikovej sféry 2016*. In press.
- [13] Miyake, M, Inoue, H, Shi, J, & Shimokawa, T 2014, 'A Binary Option Pricing Based on Fuzziness', *International Journal Of Information Technology & Decision Making*, 13, 6, pp. 1211-1227, Business Source Premier, viewed 26. 4. 2016.
- [14] Rick Thachuk (2010) Binary options - the next big retail investing boom?. *FOW* [online]. 2010. ISSN 14629658.
- [15] Thavaneswarana, A. Appadoob, S.S. Frank, J (2013) Binary option pricing using fuzzy numbers. *Applied Mathematics Letters*, Volume 26, Issue 1, January 2013, Pages 65–72
- [16] Zmeskal, Z. Generalized soft binomial American real option model (fuzzy–stochastic approach). *European Journal of Operational Research*, 207 (2010), pp. 1096–1103

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SELF SERVICE TECHNOLOGIES: A CAUSE OF UNEMPLOYMENT

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ABSTRACT

The self-service technologies (SSTs) are fast changing the conventional way of transacting business by business organisations. The rapid innovation of self-service technologies and its adoption and usages in all facets of human systems is acclaimed to be fast rendering low skilled workers jobless. The major sectors of the economy in advanced economies have reached their peaks and can no longer provide new employment due to an increase in the productivity growth rate as a result of technology advances. These SSTs have in no small measure brought about an increase in productivity growth rate, cost reduction and an increase in the speed of service delivery to customers. This paper examines if self-service technologies truly are the cause of persistent unemployment through a study of the long term metamorphosis of the major economic sectors in advanced economies. This study revealed that the SSTs presents both risks and opportunities.

INTRODUCTION

He who rejects change is an architect of decay. The only human institution which rejects progress is the cemetery- Harold Wilson Speech to the Consultative Assembly of the Council of Europe, Strasbourg, France 23rd January, 1967.

In this dynamic world, almost everything is changing, from human systems to the environment. The emergence of self-service technologies is rapidly replacing the traditional way of business and service delivery at an accelerating rate in both advanced and developing economies. Although some developing economies still have a long way to go with regards to industrialization and the need to expand their service industry. Every rational economic agent is relatively seeking cheaper means of production of goods by substituting labor intensive goods for capital intensive goods and consumers in return will buy goods and services at their convenience and reasonable price. Some sectors and businesses are created or disrupted while new ones are created- corso and ricorso. (Schumpeter, 1942; Zeleny, 2010; Zeleny, 2012).

The Corso and Ricorso (C&R) idea (Zeleny, 2012) is based on three vital phases: “production-growth-destruction”, “crisis-action-catharsis”, “birth-life-death” and so on, depending on the field of discussion. It is a creation of the new and unprecedented phase of renewal or rebirth. The duration differs according to sector or industry which can span over long period of time; the R & C cycle in technology is quite rapid. Drucker, 1993 identified four major transitions in the global economy: “In the 1300s, the transition from feudal agrarian economy to modern Capitalism and the

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nation state; in the late 1700s and 1800s, the Industrial Revolution of steam power and factories; a Productivity Revolution as management of work and processes boosted the productivity of labor, transforming the proletariat class into the middle class; and since the 1990s, the emergence of the Knowledge Economy”.

Karl Marx, a revolutionary and critic of capitalism claimed that the elimination of labour by technology during the industrial revolution would lead to accumulation of capital which will in turn result in massive unemployment and a fall in wages invariably causing decreases in consumer demand and profits. (Dyer-Witthof, 1999; Wendling, 2009). To the extent that workers are alienated from the object of produce and adversely, the increase in accumulation of capital, causes industries to over produce. This over-production eventually leads to reduction of work force or decrease in wages. He sees machines as an opportunity to free man from the rigor of routine works, to shorten labour time.

SSTs are transforming different industries and sectors of the economy, from ATMs in banking to e-commerce in the travel industry which is resulting in significant cost reductions for businesses and outsourcing of services to customers. The services are shifted to the consumers in the form of better services and lower prices. Business organizations both small and large, all around the globe are seeking to be innovative and improving their products and services in order to have competitive advantage and to remain profitable. Such technologies previously caused an increase in productivity growth rate and an improvement in the quality of life. On the consumers' side- consumers seek better, well-designed, customized products and services and speedy delivery at the lowest possible time and at reasonable and fair prices. Nye, 2006 stress that “technology is not something new, it is more ancient than the stone circles at Stonehenge”. It has been part and parcel of human society as far back as archaeology

According to Li Keqiang, the premier of China, in his speech at the World Economic Forum, 2015, he mentioned that in a small village in China of about 700 households, they were over 2,000 registered online stores. More and more small entrepreneurs are operating online stores from all over the world, thereby having direct contact with consumers. The role of the middlemen is fast becoming eliminated (disintermediation). The factor encouraging this trend towards a self-service economy is quick innovation which leads to cheaper and simpler capital machinery. The aim of this paper is to examine the cause of the growing unemployment rate focusing on the Self-service technologies impacts. This paper is divided into four sections: the first section deals with the introductory part, the second section gives a theoretical background and review of related literatures. The third section focuses on the long term unemployment in the United States and E-28, identifying where the jobs went. The last part draws conclusions.

Theoretical Overview and Empirical Evidence

Definition of Self Service Technologies

Castro, Atkinson and Ezell (2010) identify self-service as process of shifting services to the consumers is that the consumers are given the opportunity to do the scanning, bagging and paying for the products or service, customized the products to his taste and so on. Zeleny (2009) claims that the self-service process often involves technology (machine or computer) used in transforming inputs (materials, information or service) into products which could be physical goods, services or information. It is seen as a “package of hardware, software, brainware and the support net.” Ultimately, it is used for achieving a certain purpose or goal. Self –service technologies (SSTs) are technological interfaces that enable customers to produce a service independent of direct service employees' involvement. Examples include automated teller machines (ATMs), Vending machines, banking by telephone, automated check-out kiosk at airports and hotels and services over the

internet. (Meuter, Ostrom, Roundtree, and Bitner, 2000). These SSTs usually makes businesses continuously available for the consumers' convenience and comfort.

Types of self-service technologies

There are several self-service technologies nowadays; more and more new SSTs are being invented while old traditional SSTs are improved upon. Castro, Atkinson and Ezell(2010)point out several types of self-service including electronic kiosks, internet applications, mobile payments such as Online-Banking, Online- Health, E-learning, Retail E-Commerce, Online Customer Service, Online Customization, E-tickets and even E-Government. The electronic kiosk provides users personal services and access to information. And due to innovation, there are touch screen displays and user friendly interfaces. These self-service kiosks can be found in shopping malls, airports etc. ATMs (or bankomat) which was one the earliest SSTs introduced in the 70s, is increasingly being used all over the globe.

Another example of electronic kiosks is self-service gasoline stations. These gas stations are without attendants and allow customers to pump gas by themselves and in some places customers make payment for the gas using a self-pay option. In the United State of America, New Jersey and Oregon revolted against self-service gas stations due to the perceived negative impact they have labour market. But this made the price of gasoline 2-5 cent per gallon higher than in other States. Also there are self-paying car parks which allow motorists to pay for parking using a credit card, debit card, smart card, or cash without the use of an attendant. Automated Vending Machines can be found in schools, shopping malls, and train stations.

In addition, there is the transit systems used in Washington, D.C.; which allows travellers to simply pass a contactless smart card over a reader to pay their fare and board a bus or to enter the subway. In some countries rather than using smart card, travellers can use their cell phone as a payment devise. Recently some fast food restaurants and convenience stores have begun implementing self-service kiosks to improve business and provide better service to their customers. For example, Subway is piloting 70 self-service kiosks in its sandwich shops for customers to place their order and pay for their meal. The kiosks can be installed at the restaurant or in a satellite location so that customers can place an order for pickup or delivery.

The travels and the hospitality industries are not left out of this technological innovation. The online check-in of passengers and coupled with the self-check in /check- out kiosk used in some airports around the world like the United States of America have enabled airlines to reduce or eliminate the cost of processing using an airline agent. The cost of checking in a passenger with an airline agent is approximately \$3 versus only \$0.14 with a kiosk. Some hotels are beginning to allow guests to avoid lines and check in at kiosks that can look-up a reservation, allocate a room, and dispense a room key. They also offer automated check-out, for example, through a dedicated electronic kiosk in the hotel lobby (where guests can print a receipt) or through an application accessible through the in-room TV, so that travellers can more easily complete their stay. Self-driving cars or driverless could be available in 2020. Already four U.S. states and Washington D.C. have passed legislation allowing driverless cars. Such technology will render some drivers jobless.

Definition of Unemployment

The definition of unemployment according to ILO; adopted by the 13th International Conference of Labour Statisticians (Geneva 1982): The unemployed can be defined based on three criteria. Those who are not in any kind of paid employment or self –employment. Secondly, those who are available to work either in paid employment or self-employment but who are not in employment within the stipulated period. Thirdly, those who are “actively seeking work” by taking active

positive steps by registering in the job agencies, applying for jobs through placement of job adverts on newspaper or internet or seeking assistance from friends or relatives and yet they are unemployed.

In addition, based on the resolution adopted at the 19th International Conference of Labour Statisticians, October, 2013 concerning statistics of work, employment and labour underutilization (paragraph 47-48). The definition was extended to include the following:

- a) future starters, “not in employment” and “currently available” who did not “seek employment” as specified above, because they have already made arrangement to start a job within a short period, set according to the general length of waiting to start a new job in the national context usually not more than three months
- b) Those who are undergoing skill training programme or retraining scheme within the employment promotion programmes who on this basis are “not in employment”, “not currently available” and who “do not seek employment” because they have a job offer to start within the three months
- c) Those who are “not in employment” expecting or waiting for opportunities to travel (migrate) abroad in order to work for pay or profit.
- d)

Classical view on Unemployment

The classical economists believed that unemployment arises due to the obstruction in the functioning of the labour market because they see the market as a “single and static market” which is characterized by “perfect competition, spot transaction and institutions for double auction bidding”. The government should not intervene in the economy because the economy can correct itself in the long run. The labour market consists of quantity of labour demanded and supplied which are brought into equilibrium by the fluctuations in the wage rate; at the point of intersection the equilibrium real wage rate and full employment is determined. There is no incessant unemployment above the frictional level. Unemployment is voluntary, it arises as a result of too high real wages and involuntary can occur if the government requires the employers to pay a minimum wage above the labour market rate. This theory depends on the smooth and fast adjustment of the labour market. (Ackerman et al., 2013; Mouhammed 2012). The classical model is focused on the supply side while the Keynesian model is focused on the demand side.

Keynesian’s view on Unemployment

The Keynesian unemployment theory emanates from the publication “The General Theory of Employment, Interest and Money” by John Maynard Keynes (Keynes, 1936). This Keynesian unemployment theory is also referred to as “cyclical unemployment”. The unemployment which characterized the great depression in the 1932, it is acclaimed by the classical economists as caused by the refusal of labor to accept money wage reduction. Keynes opposed the classical economic theory by emphasizing that the government should intervene in the managing of the economy because he believed that if the economy is left to correct itself it may take a long time and before then “we are all dead”. The Keynesian theory was developed at the beginning of the “great depression”. He proposed an increase in “Aggregate Demand”; if overall spending is high, there will be increase demand for goods and services then employers are encouraged to produce more and employ more workers to satisfy the additional demand. Invariably aggregate demand reduces unemployment. Unemployment is seen as a deviation from its natural rate (5.5 percent) around which the unemployment rate fluctuates. This is caused by the downturn in the economy. What is true of average worker is also true for the governments; in this present times when persistent unemployment is forcing governments to provide relieve for the unemployed from tax payer’s money or borrowed funds

$$AD = C + I + G + (X - M) \text{ {Full employment} } \text{-----}(1)$$

Where AD is Aggregate Demand

C is Household Consumption

G is Government Spending

X is Export

M is Import

Literature Review

There is an increasing concerns and arguments that rapid innovation of technologies which leads to increase in productivity growth rate is fast relieving workers of their jobs. Since the 2008 economic recession, there has been a “persistent unemployment”. Technological unemployment was widely cited as a problem in the 1920s and 1930s, a period during which productivity soared higher, inequality and unemployment were high and instability was the norm. From recent empirical evidences, an increasing level of technological unemployment is a problem spreading across the advanced economies of the world and which will eventually hit developing economies like “Tornado” (The Economist, 2011; 2014)

According to the NBC News President Obama explained that the reason companies are not employing is not because of his policies, it is because the economy is so automated. And that “There are some structural issues with our economy where a lot of businesses have learned to become much more efficient with a lot fewer workers. You see it when you go to a bank and you use an ATM, you don’t go to a bank teller, or you go to the airport and you’re using a kiosk instead of checking in at the gate.” The present unemployment maybe attributable to the short run consequences of rapid technological advancement.

Shah and Mehta (1998) explore the impacts of technologies on the global workforce and the world economy. Several issues like gainers and losers of information technology and competitive advantage of skilled workers which would be of concerns in the 21st century. Labour will not be expressed based on workers’ level of education and job experience but will be expressed on the basis of technical knowhow and technology. There will be high demand for skilled workers in business organizations; adversely there would be global increase in unemployment. Business organizations are fast changing, re-engineering and restructuring to adapt to rapid technological innovation which often leads to downsizing. In the light of this, a lot of jobs are lost mostly unskilled workers are laid off. The productivity of businesses will increase, cost of production reduced. Consumers will enjoy wide variety of goods, quality and speedy delivery of services.

Brynjolfsson and Mcfee (2011; 2014), argue that the rapid changes in technologies with sophisticated technologies have made more companies to discover or invent better ways to produce products and provide services to their customers. These innovative technologies are disrupting the labour market by displacing existing workers and making them redundant. But unfortunately the creation of new businesses is not happening at the same pace, fast enough to absorb or employ the workers displaced. Computerization is no longer confined to a particular sector and to routine jobs but rather have encroached into the domain of human skill. Development which seems impossible a few years ago like fully automated cars, high quality computerized translation are now realities or will be soon. By and large these ongoing innovations should yield great benefits to humanity but however in the meantime, these developments are likely to significantly leave some people worse off. In order for the economy to take full advantage of this rapid change in technology, there must necessarily be reform in education and increased investment.

Jones (2012) further attributes advancement in technologies in the area of medicine as responsible for increase in life expectancy. People are now living longer and working longer beyond the retirement age. And due to the 2008 economic downturn which resulted into loss of retirement savings, many people within the retirement age bracket may wish to continue working. At the lower end of the spectrum there is likelihood that it may cause increase in youth employment. In essence when older people work longer, there are fewer jobs vacancies. In addition, with the rapid innovation of new technologies like robotic and artificial intelligence (AI), the number of jobs would be swallowed up. Initially new technologies are supposed to create jobs, for example the driverless trains constructed in 1998 in France. The tide is fast changing, before it used to be low skilled jobs that are the most threatened by technology. A widening range of jobs is now being done by robots in traditional white collars occupations and the traditional jobs have shrieked. However, the continuous growth in productivity brings overall benefits to the society at large but in the short run, it can result into loss of jobs for a group of people who are low skilled and will demand a lot of struggle and sacrifice. In the long run the productivity growth does not increase unemployment. (Rezai&Semmler, 2007; Jones, 2012).

Zeleny (2012) further describes the corso and ricorso of the economic sectors due to the accelerating impact of the productivity growth rate. The three major sectors (Agriculture, Industry and Service) in the developed countries have reached their peak in terms of the percentage of workforce employed (see figure 3). There has always been a new sector emerging to absorb the employment slack of the previous high productivity sector. The new sector the Government Welfare Unemployment (GWU) has emerged in developed countries to absorb the unemployed. This sector is financed by tax payers' money, however, the growth of this sector is unsustainable and has resulted into unbridled spending, high indebted, unbalanced budgets and out of control incomes.

Frey and Osborne (2013) examines the susceptibility of jobs to the computerization; using a novel methodology to estimate the probability of computerization for 702 detailed occupations. The future impact of computerization on the US labour market is analysed to the estimates the number of jobs at risk. According to the estimates about 47 percent of the total US employment is at risk. Educational attainment and wages exhibits a strong negative relationship with the probability of computerization. As technology advances, low skilled workers will be reallocated to tasks that are non-susceptible to computerization-i.e. tasks requiring creative and social intelligence. For workers to win they would have to acquire creative and social skills.

Marchant, Stevens and Hennessy (2014) stresses that the rapid innovation of technologies that are displacing human beings of work presents both risk and opportunities. These technologies exhibit the potentials to enrich our lives and free us from drudgery and danger of manual and monotonous labour and enable consumers and businesses enjoy a higher quality of life. The wide spread of chronic technological unemployment could result in unacceptable individual and societal instability and adversity. Therefore, policies must evolve as quickly as the technologies changes. Based on this, it is ultimately important and appropriate to identify policy options to address these potential problems. An inventory list of possible policy options aimed at addressing this technological unemployment would be provided online and updated from time to time.

Castro, Atkinson and Ezell (2010) point out those self-service technologies provides immense benefits to businesses and consumers in form of improved quality of life, convenience and cost reduction. It also has the capacity to contribute to the prosperity of national economy in terms of the per capita income and productivity growth. Therefore, policy makers should not enact policies that will restrict self-service technologies but rather make policies that will stimulate the self-service economy.

Martin Ford the founder of a Silicon Valley based software development firm argue that the acceleration of technology will ultimately invade many industries that have traditionally been

labour intensive. Furthermore, the process of “creative destruction” will destroy “old industries” and new capital intensive industries will be created while less labor intensive industries will be created. He focuses on the connectivity of economics and technology. The great depression which was basically grasp through the lens of business cycle or financial in origin could possibly be the result of the acceleration of technology. He employs simulation of lights in the tunnel which he used to visualize the economic implications of a new technology that are likely to appear in the coming decades. As a result of this the overall economy will reach a “tipping point”. Beyond this point the economy will no longer be able to absorb the workers who lose jobs due to automation. If it is not address by some type of government policies, we will see a precipitous drop in consumer spending as a substantial fraction of the population loses confidence in its future income continuity that of course would result in even more unemployment and a downward spiral would ensue. He challenges all the conventional stance advanced forward for the future and shed more light on the danger that lies ahead if we do not plan for acceleration of technology (Ford, 2014).

In addition, Martin Ford point the impact that accelerating technological advance has on the job market and the overall economy is set to defy much of the traditional belief about how technology and economics relate. One major belief is that which can be refuted is the assumption that automation is basically a threat to unskilled workers. This assumption stern from the fact that such jobs are monotonous in nature. Today it is a different ball game, as skilled workers will be affected. They will discover that their jobs will soon be automated. (Ford, 2015).

Contrarily, Bassen 2015 presents the relationship between technology and occupations. Based on the empirical findings, he emphasised that the jobs which are automated or computerized is growing faster; more employments are created. There is a shift of employment towards occupations which are computerized. It is easy to pin point jobs like telephone operators and typesetters which has been lost due to technology advance. Invariably, workers who are skilled in computing and technology are substituting workers who lack such skill. As some jobs are being eliminated so also some jobs are being created. The challenge facing today’s laborforce is lack of the needed technological skills to fit into the laborforce and not unemployment.

Long term Unemployment Situation in the USA and EU-28

The number of unemployed is growing across the globe most especially amongst the youth. It is one of the major concerns of policy makers because of the implications or effects on the economy. Long term unemployment situation in some advanced economies remains high. (Figure 2). In Europe, 2014 Greece has the highest unemployment rate of 19.5 percent, followed by Spain with 12.9 percent, Croatia 10.1 percent, and Portugal 8.4 percent. The unemployment situation in the EU-28 was 5.1 percent in 2013 and remain 5.1 percent in 2014; the long term unemployment rate in USA is 1.4 percent in 2014 below 5 percent (Eurostat, 2015). The long term unemployment skyrocketed following the great recession of 2007-2009 and continued to rise after the recession has ended, thereafter plummeted during the labour market recovery. But why are people who are willing to work and have been actively searching for jobs for more than 52 or 99 weeks unable to secure a gainful employment. What is the cause, is it that they lacked the required skills needed to fetch them employment or the jobs are not available within the sectors of the economy to absolve them?

Furthermore, there are divergent views as regards the causes of unemployment. Some economist blame technological changes, some shift the blame on external sources and shocks is that economic downturn or cyclical changes while some argued that the deficiencies in aggregate spending and innovation are the root cause of the problem while some scholars point that it is as a result of skills mismatch or. Keynes John affirmed that the world is suffering from “technological unemployment”; an unemployment which arises from discovery of new means of production by reducing cost.

Figure 1 Long Term Unemployed as a percent of total unemployed, quarterly averages, 1994-2014

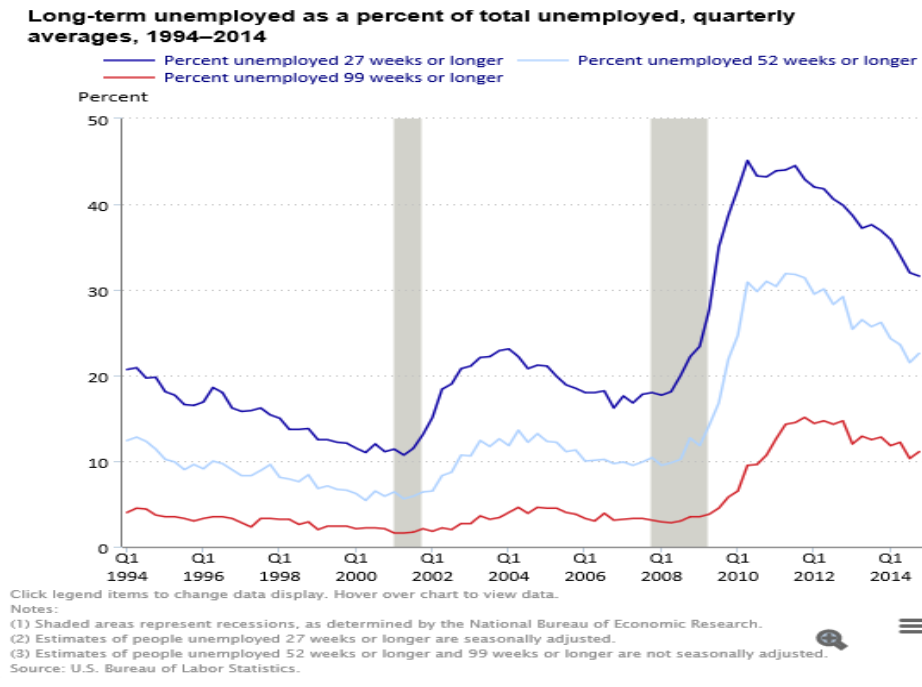
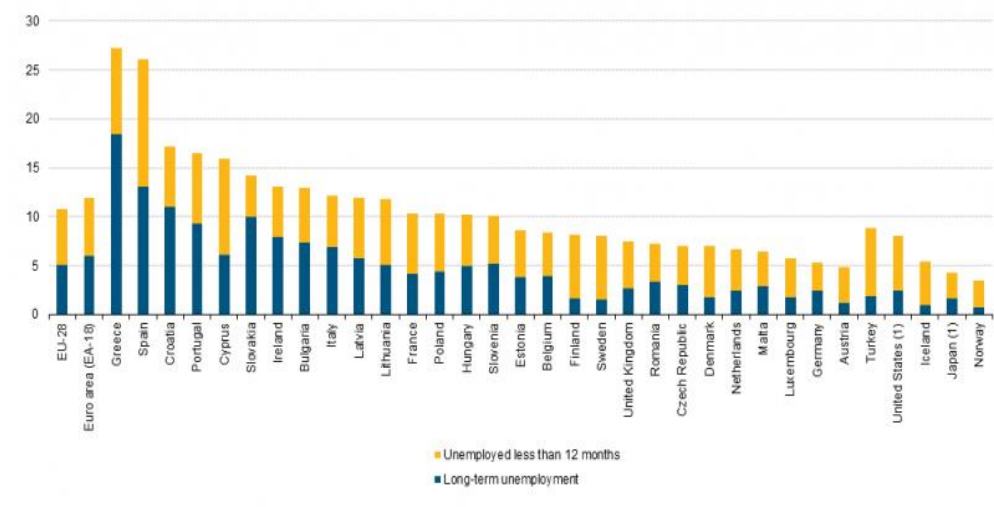


Figure 2 Long Term Unemployment in Some Selected Advanced Economies



(¹) 2012.
 Source: Eurostat (online data codes: une_rt_a and une_ltu_a)
 Source: Eurostat/Statistics

Where did the Jobs go to?

The jobs that are lost due to the introduction of new technologies, where did these jobs or workers displaced go to? These workers in a way are absorbed by other sectors but in a situation where all the sectors have reached their peak and can no longer absorb these workers. And in a situation where there is rapid advancement in technology which cut across all sectors? Where would these workers go? The only possibility is for a new sector to emerge to absorb them. For example, in the late 1800s about three-quarter of US workers are employed in Agriculture but due to mechanization of agriculture and advancement in technology today the number is around 2 – 3 percent. The

workers displaced in agriculture were absorbed in the Manufacturing and service sectors. Technology advancement eliminated millions of jobs. Undoubtedly, according to the pew research center 2014, new technologies disrupts jobs in the short run but in the long run, this group of displaced workers are absorbed by other sectors (either new or emerging sectors). The net gain of the society in the long run has always been prosperity not job losses.

Zeleny 2012, identifies the new emerged sector in the US and other advanced economies which absorbs the unemployed as the 'GWU'- Government, Welfare and Unemployment. This sector is financed by the tax payers' money and it is not sustainable. All the products and services (consumption) are paid from tax payers' money. Economic sectors are guided with the same C & R principles; they emerge, grow and decline. Initially agricultural sector builds their industrial, service sectors and GWU and then they gradually lose their production growth. Under the figure, there is no amount of stimulus or quantitative easing which could create self-sustained net job growth in agriculture, industry or services. The reason is simply that there are only basically four things humans can do: Produce food, Manufacture goods, provide services or depend on the state.

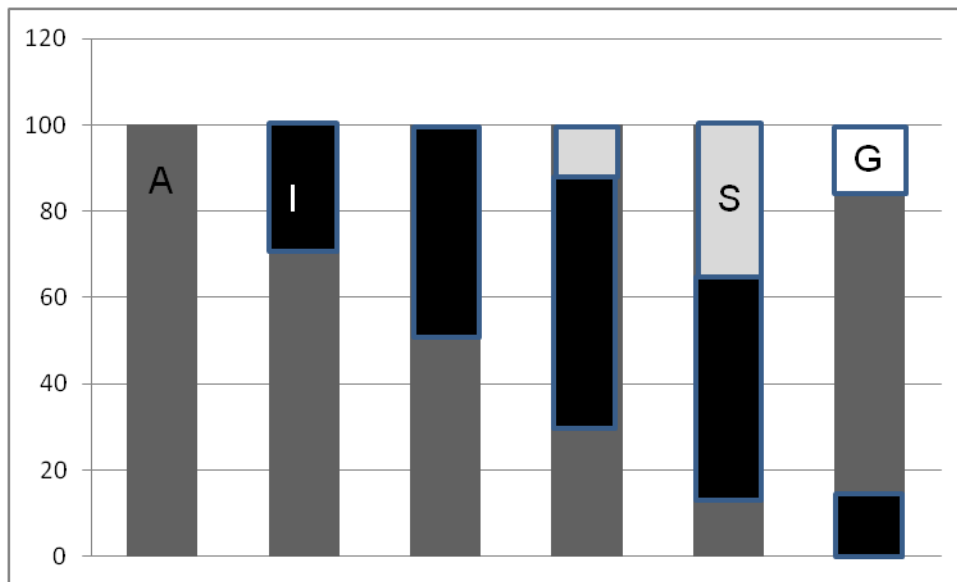
Brynjolfsson and Mcfee (2011), states three alternative stances provided by analysis: The cyclical view holds that the present happening is not mysterious. Unemployment in US remains high simply because the growth of the economy is slow and is not capable of quickly putting people back to work and Paul Krugman is also one of the advocates of this view. The deep drop in demand like the "Great Recession" is bound to be followed by long and frustrated slow recovery. The second school of thought viewed it as stagnation and, not cyclical in nature. Stagnation in this context means a long term decline in America's ability to innovate and increase productivity. Economist Tyler Coven articulates this view in his 2010 book, "the great Stagnation": The growth of the median income slowed down significantly at 30 years ago and actually declines during the first decade of the century. The average American earned less in 2009 than it did in 1999 is that the decrease in wage rate. Coven attributes this to the fact that the economy has reached the peak.

In addition, Leo Tilman and Edmund Phelps also agreed with Coven's view. This argument does not ignore the "Great Recession" and does not believe that technology is the principal cause of the slow down. The slow down actually predates the great depression and one way to lift the economy out of this state is through rapid innovation and technical progress. The third view based on the end of work argument of Jeremy Keynes John Maynard, Management theorist Drucker Peter and Nobel Prize winner Wassily Leontiff support the view of Rifkins, 1995 which is revealed in his hypothesis: "that we are entering into a new phase in the world history-one in which fewer people will be needed to produce goods and services and more sophisticated software technologies are going to bring globalization even closer to a near "workerless world". Today, all sectors are experiencing technological displacement forcing millions onto the unemployment rolls, coping with this challenge will be the most pressing social issue of the coming century".

OECD, 2014 present based on empirical evidences from in the past decade that the demand for more skilled workers is fast surpassing the demand for low skilled workers with the share of total employment in managerial and technical and professional jobs is increasing. There is a shift of Employment from unskilled labor towards high skilled labor. These changes may aggravate in the face of rapid technological advance and diffusion of ICT and could result into more displacement of routine jobs. Since the financial or economic crisis, the unemployment rate has remained high in G-20 countries and in some countries the high unemployment rate predates the economic crisis and the present challenge is to prevent it from translating into structural unemployment.

Fig 3 Long term sector employment dynamics in the USA

G=Government S=Services I=Industry A=Agriculture



Source: Adapted from Zeleny, 2012

CONCLUSION

New technologies especially self-service technologies are fast changing the conventional way of doing businesses across the globe and shifting some producers' responsibilities to the consumers. And its emergence like any other technology advance presents both risk and opportunities to the overall national economy as increasing number of low skilled workers are being displaced as the rigorous routine work are automated. Although these self-service technologies have the capacity to improve the quality of life and production growth. It is not sufficient to based our arguments on the fact that technological advance is fast displacing unskilled labor and invariably causing unemployment and much more we cannot completely refute the reality and claim that self-service technologies are dramatically transforming our economies and fast displacing low skilled workers due to the alarming rate of unemployment in these advanced economies. No doubt, the continual improvement of technology often results in increase in productivity growth rate. With the automation of the major sectors of the Agriculture, Industry and Services, more and more unskilled workers have been displaced. Low labor intensive and high capita intensive can be used by industries to produce more.

The evidences from the metamorphosis or transformation of the major economic sectors over the decades, it is no gainsay that these major economic sectors have reached their peak and can no longer absolve the teeming unemployed due to high productivity growth rate and the public sector is not sustainable neither in terms of creation of employment. For example, the US Agricultural sector only employs 0.5 percent of labour. (Zeleny, 2012). One feasible solution is not making appropriate structural policies or increasing aggregate demand but it is the emergence of a new sector to absolve the teeming unemployment in the advanced economies.

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REFERENCES

- Ackerman, F., Goodwin, N., Nelson, J., Welsskopf, T., & Institute, G. (2013). Theories of Unemployment. Retrieved from: <http://www.eoearth.org/view/article/156591>
- Bessen, J. E. (2015). How Computer Automation Affects Occupations: Technology, Jobs, and Skills. Boston Univ. School of Law, Law and Economics Research Paper, (15-49). Chicago
- Brynjolfsson, E., & McAfee, A. (2011). Race against the machine: How the digital revolution is accelerating innovation, driving productivity, and irreversibly transforming employment and the economy.
- Brynjolfsson, E & McAfee, A (2014). *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*. WW. Norton & Company, New York.
- Castro, C., Atkinson, R., & Ezell, S. (2010). *Embracing the Self Service Economy*
- Drucker, P. (1993). *Innovation and Entrepreneurship: Practice and Principle*. Harper Collins Publishers. ISBN 0-88730-618-7
- Dyer-Witheyford, N. (1999). *Cyber-Marx: Cycles and circuits of struggle in high-technology capitalism*. University of Illinois Press.
- Frey, C. B., & Osborne, M. A. (2013). The future of employment: how susceptible are jobs to computerisation?
- Ford, M. (2009). *The light in the tunnel: Automation, Accelerating Technology and the Economy of the Future*.
- Ford, M. (2015). *Rise of the Robots: Technology and the Threats*
- Gerber, E.M. & Martins, C.K. (2012). Supporting Creativity within web based services. *Internal Journal of Design* 6 (1), 85-100
- Keynes, M. (1936). *The general Theory of Employment, Interest and Money*. London: Macmillan, 1936.
- William, C., et al (2011). Theorizing the Self Service Economy: A case study of do-it –yourself (DIY) activity. *Journal of Economy and its Applications*. Volume 2, Issue 1, Pages 1-26.
- Li Keqiang (2015). Premier of People's Republic of China Speech at World Economic Forum Annual Meeting, Davos 23 January.
- Nye, D. E. (2006). *Technology Matters: Questions to live with* (pp. 6-7). Cambridge, MA: MIT Press
- Pew Research Center, (2014). *AI Robotics and the Future of Jobs*.
- Murphy, S. (2009). The growth of self-service. *Chain Store Age*, 85(12), 44.
- Meuter, M. L., Ostrom, A. L., Roundtree, R. I., & Bitner, M. J. (2000). Self-service technologies: understanding customer satisfaction with technology-based service encounters. *Journal of marketing*, 64(3), 50-64.
- Marchant, G. E., Stevens, Y. A., & Hennessy, J. M. (2014). Technology, Unemployment & Policy Options: Navigating the Transition to a Better World. *Technology*, 24, 1.
- Mouhammed, A.H. (2012). Important Theories of Unemployment and Public Policies. *The Journal of Applied Business and Economics*, 13(2), 156.
- OECD, 2014. *Preventing Unemployment and Underemployment from becoming Structural*.
- Schumpeter, J.A. (1942) *Capitalism, Socialism and Democracy*, Harper & Row, New York, 1942.
- International Labour Organization. *The definition of Unemployment*.
- ILO, "Report and proposed resolution of the committee on work statistics", 19th International Conference of Labour Statisticians, Committee on Work Statistics, Geneva, 2 November-11 November 2013.
- Rezai, A., Semmler, W., & Chen, P. (2007). *Productivity and Unemployment in the Short and Long Run*. Policy Note. SCEPA Working Paper 2007-8, Schwartz Center of Economic Policy Analysis.
- The Economist. (2014). *Technological Unemployment: Race Against Machine*, November 19, 2011
- The Economist. (2014). *Coming to an office near you*, January 18, 2014, 7-8.
- Zeleny, M. 2009. *Technology and High Technology: Support Net and Barriers to Innovation*. *Advanced Management Systems*, 1/1: 8-21.

Zeleny, M. (2010a). Machine/organism dichotomy and free-market economics: Crisis or transformation? *Human Systems Management*, 29(4), 191.

Zeleny, M. (2012b). High technology and barriers to innovation: from Globalization to Relocalization. *International Journal of Information Technology & Decision Making*. 11(02): 441-456.

Zeleny, M. (2012c). Crisis and transformation: On the corso and ricorso of human systems. *Human Systems Management*, 31(1), 49-63.

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ENTREPRENEURIAL ORIENTATION IN THE SEGMENT OF MICRO-ENTERPRISES: EVIDENCE FROM CZECH REPUBLIC

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ABSTRACT

The objective of this comprehensive research is to identify and explore the dissimilarities of gender and education level of entrepreneurs and enterprises' age with regards to entrepreneurial orientation (EO) in the segment of micro enterprises. All of the dimensions of EO are included such as innovativeness, risk taking, proactiveness, competitive aggressiveness and autonomy for our analysis. The data that we have used for this study, was collected by a structured questionnaire during 2015 in Czech Republic, and consists of 1141 small and medium-sized enterprises (SMEs) and 740 of them are defined as micro enterprises by using the definition of European Commission. The empirical results of our study indicates a that university educated micro-entrepreneurs are more innovative and autonomous comparing with lower educated micro-entrepreneurs and also younger micro firms are more innovative, risk taker and proactive than the older micro firms. However, our results do not show any significant differences between men and women in relation to the all components of EO. Our result can be explained by having higher percentage of university educated women micro entrepreneurs comparing with their men counterparts and education may have a substitution effect on the gender based differences in the segment of micro firms.

KEYWORDS

Entrepreneurial Orientation, Micro Enterprises, Gender, Education, Firm Age, Czech Republic

JEL

L26, M21

INTRODUCTION

It is widely acceptable that SMEs have significant impacts on the economic development for both developing and developed countries. According to Islam et al. (2011), SMEs have flexible structures, can be easily adaptable to the changing market conditions such as demand and supply situations, and also they encourage improving entrepreneurial competencies and private ownership,

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create employment, operate in variety of economic activities, and play active roles in exports and trades. For instance, Karel et al. (2013) state that SME sector made contribution to 51.5 % (around 1478 billion CZK) of total export and also contributed to 56.6 % (about 1515 billion CZK) of total import in 2011 in the Czech Republic. Moreover, SMEs have some certain characteristics such as having limited size, a lower level of diversification, low capital strength, more limited market and a higher risk. (Aleksandr et al., 2016)

On the other hand, Thapa (2015) makes an explanation that even though micro firms have different properties from other kinds of businesses, they are usually classified under small-sized enterprises. Liedholm (1990) provides a definition that micro enterprises have nine or lower number of employees. On top of that, Brugger and Rajapatirana (1995) found that around 150000 people start to work in a job in developing countries and majority of them will be worked for micro enterprises such as owners or workers. On the other side their income levels are lower comparing with other size of enterprises. For example, Thapa (2015) clarifies that micro enterprises' total assets differ up to \$10000 and total annual sales are varied until \$100000. Additionally, the Commission of European Communities (2003) states that total annual turnover and/or total annual balance sheet of micro enterprises are fewer than EUR 2 million.

According to Covin and Wales (2012), even if age, size and ownership of organisations are different, studies of entrepreneurial orientation aim to orientate to organisations in entrepreneurial activities. For this reason, micro enterprises and their EO is a vital subject for entrepreneurship literature. Defined by Jelenc et al. (2015), EO is a tradition that evaluates how firms are prone to entrepreneurial attitudes. In the previous studies, there are various measurements which are used to evaluate EO. However, there are two types which are applied by majority of researchers. The first one is Miller's (1983) which considers three components of EO, namely, proactiveness, innovativeness and risk taking. Another one is provided by Lumpkin and Dess (1996), takes five dimensions of EO into account by adding autonomy and competitive aggressiveness with Miller (1983) conceptualization.

Another issue is that founder's human capital is not only a true determinant of firm survival but also it detects the performance of a firm (Cressy, 1996). Education and experience are critical components of human capital so these factors can also affect the performance. Moreover, Berrone et al. (2014) emphasize that previous experience and education are some individual characteristics which determine the performance of micro enterprises. Additionally, they describe the importance of gender which is also one of determinants of the performance for micro enterprises. According to Arenius and Minniti (2005), demographic variables such as age, sex and education are important to explain the trend in entrepreneurship process. Furthermore, Belas et al. (2015) state that there are some entrepreneur's characteristics that have significant impacts on business success, such as gender, level of education, age, managerial skills, and experience, in addition to physical and emotional family support.

When examining the dissimilarities of these demographic variables and entrepreneurs' and enterprises characteristics such as gender, education level of entrepreneurs and age of companies on the EO, a large number of studies are in existence in the literature and they all indicate various results. Considering the role of gender, some previous research found significant differences between males and females on EO (Runyan et al., 2006; Lim and Envick, 2011; Jelenc et al., 2015; Ayub et al., 2013; Goktan and Gupta, 2015). However, Diaz-Garcia and Jimenez-Moreno (2010) find that there is a lack of differences between males and females in entrepreneurial intention.

In terms of education, Jelenc et al. (2015) find that education abroad have effects on individual entrepreneurial orientation and also Altinay and Wang (2011) prove that entrepreneurs who have higher education levels can make positive contributions to their enterprises' EO. Furthermore,

Arenius and Minniti (2005) find that secondary or higher education is a significant factor for explaining the entrepreneurship process. According to Rauch and Rijsdijk (2013), people who have higher education level can effect to business growth positively. On the other hand, Thapa (2015) and Jelenc et al. (2015) did not find any positive relationship between education and performance. With regards to the firm age, younger and older enterprises have some differences on their EO due to resource accumulation (Anderson and Eshima, 2013). Moreover, Islam et al. (2011) analysed the success of firm with regards to the age of companies and they have found some significant differences between older and younger firms. Altinay and Wang (2011) clarify that if an owner of an enterprise has more experience, he can influence to his firm's EO positively. In contrast, Berrone et al. (2014) found that work experience as self-employed have no significant effect on firm performance.

The aim of this paper is to find out the differences in gender and education level of entrepreneurs and age of enterprises with respect to various dimensions of EO such as innovativeness, risk taking, proactiveness, competitive aggressiveness and autonomy in the segment of micro enterprises. In this present study, we include three varied features of an entrepreneur and enterprises, such as gender and education level of an entrepreneur, and age of firms to examine their differences on the five dimensions of EO. Although many studies about EO mainly focus on the three components of EO which are innovativeness, risk-taking and proactiveness (Runyan et al., 2006; Moreno and Casillas, 2008; Roxas and Chadee, 2012; Pett and Wolff, 2012), the novelty of the paper is that we incorporate all the components of EO dimensions which are firstly defined by Lumpkin and Dess (1996). As we mentioned above, there are quite a bit number of studies found some significant dissimilarities of gender and EO. However, our results show that there is no significant differences exist between males and females micro entrepreneurs in all the indicators of EO. On the other hand, we found that there are some differences between education levels on innovativeness, competitive aggressiveness and autonomy. We also found some results that micro entrepreneurs who have university degree are more innovative and autonomous than their counterparts who have lower degrees. Although, we achieved a result that there are differences between different education levels on competitive aggressiveness, this finding is not statistically significant. Furthermore, our results indicate that younger micro enterprises are more innovative, risk taker and proactive comparing with older micro enterprises.

Considering the previous studies, this paper is the only study that sheds light in the differences of gender, education level of entrepreneurs and enterprises' age in connection with all dimensions of EO in the segment of micro enterprises. Our research is significantly different from the existing literature in entrepreneurship studies because it introduced some significant characteristics of micro entrepreneurs and microenterprises and five components of EO. Moreover, we focus on microenterprise segment from a broad perspective which has never used before especially in European and the rest of entrepreneurship studies in relation with EO. For these reasons, our study will provide to distinguish the dissimilarities between females and males entrepreneurs, higher and lower educated entrepreneurs and older and younger firms in the matter of EO in the micro segment.

In the second section, we will review the theoretical part of this study about definitions and characteristics and some performance indicators of micro enterprises, explanations of all five dimensions of EO and the information for the impacts of different variables such as age of firm, education level and gender of entrepreneur on EO. Next, we will explain the research methodology and data of this study in third part of the paper. In section four, our results will be presented with discussion. In the last part of our study, we will provide a brief review of our results, some limitations and recommendations of our research.

1. LITERATURE REVIEW

Segment of micro enterprise is one of the considerable factors that affect economic growth and conditions of countries. Although, medium and large scale enterprises are examined by many researchers, topic of micro enterprises came into prominence after the institutionalization of microcredit programmes which are provided by Grameen Bank in Bangladesh around 1970s (Thapa, 2015). After this situation, many academicians have become more concerned about micro enterprises and have provided many studies in this area. According to the Commission of the European Communities (2003), micro enterprises have workers less than 10 people. They have also various income levels which differ country to country. Larson and Shaw (2001) explain that micro firms are mainly family-owned, one-person activities and located in rural areas. Moreover, this kind of firms work in different sectors such as manufacturing, service and sales and their organization structures are generally based on sole proprietorship, partnership or a family firm (Welsh et al., 2013). On top of that, business structure of micro enterprises is not very complicated so they can change their activities and sectors much easier than the bigger size enterprises due to having lower level of obstacles, capital and skills to start up a business. Furthermore, by having flexible business structure, they can have more opportunities than bigger enterprises to respond customer and market demands quickly and additionally, micro firm segment is one of important factors that can decrease the unemployment rates because of presenting new job possibilities. (Welsh et al., 2013)

Mintzberg (1973) defines that “In the entrepreneurial mode, strategy-making is dominated by the active search for new opportunities” as well as “dramatic leaps forward in the face of uncertainty” (p. 45). Moreover Miller (1983) states that “An entrepreneurial firm is one that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with ‘proactive’ innovations, beating competitors to the punch” (p. 771). On the top of that Lumpkin and Dess (1996) explain that “EO refers to the processes, practices, and decision-making activities that lead to new entry” as characterized by one, or more of the following dimensions: “a propensity to act autonomously, a willingness to innovate and take-risks, and a tendency to be aggressive toward competitors and proactive relative to marketplace opportunities” (pp. 136–137). Also, Covin and Lumpkin (2011) clarify that “EO is a firm-level phenomenon (more precisely, EO is a strategic business unit (SBU) level phenomenon) where the “unit” can range from a non-diversified small to medium-sized enterprise (SME) to a single business unit of a multi business firm”.

Considering the dimensions of EO, Covin and Wales (2012) explain that there are two constructs to examine EO. First one is multidimensional (second order) which includes three dimensions, namely innovativeness, risk taking and proactiveness and overlaps with Miller’s (1983) definition of EO. Second one is connected with Lumpkin and Dess (1996) description of EO and it contains five components of EO namely, innovativeness, risk taking, proactiveness, competitive aggressiveness and autonomy (first order). Although, there are more studies which have applied for the multidimensional construct in the literature, quite few number of researches which have used first order construct are also exist (Lim, and Envick, 2013; Moss et al., 2015, Lechner and Gudmundsson, 2014; Islam et al., 2011; Ayub et al., 2013).

With regards to factor of gender, by using a data from 389 university students in four countries namely, USA, Fiji, Korea and Malaysia, Lim and Envick (2013) provide that male students show higher results in risk taking, proactiveness, competitive aggressiveness and autonomy than female students. Langowitz and Minniti (2007) argue that, women are less prone to take risk comparing with men and they try to avoid risk more than the men when they play gamble. Similarly, results of some studies indicate that men take more risk than then women and which clarify that women choose lower risky options than men (Sexton and Bowman-Upton, 1990; Powel and Ansic, 1997; Diaz-Garcia and Jimenez-Moreno, 2010; Ayub et al., 2013). Additionally, Wagner (2007)

emphasizes that fear of failure is an important factor that determines the differences between male and female whether to launch a new business or not.

Furthermore, Ismail (2014) proves that need for autonomy and power and risk taking propensity are the lowest entrepreneurial competencies of women in micro, small and medium scale enterprises. Goktan and Gupta (2015) also state that females perceive the environment more competitive and tough comparing with males so they are less prone to start a business. Similarly, Minniti and Nardone (2007), argue that men are more opportunity seeker than females to start a new business. By using a data from Ireland, O’Gorman and Terjesen (2006) describe that males are more opportunity oriented than the females, and females have lack of previous experience or management skills to start-up a new business and these are the major problems for females’ entrepreneurship development in Ireland.

By using a wide range of data from 28 countries, Arenius and Minniti (2005) find that men are more motivated than women to become an entrepreneur. Using a data from 1575 undergraduate business students in Turkey, United States, Hong Kong and India, Goktan and Gupta (2015) find that men have higher levels of individual entrepreneurial orientation than women. By analysing four countries namely, USA, Korea, Malaysia and Fiji, Lim and Envick (2013) emphasize that females are less aggressive in the competitiveness rather than males. Moreover, Ayub et al. (2013) state that women are less innovative and autonomous than their male counter parts. Lim and Envick (2011) give an explanation that when females want to be an entrepreneur, their behaviours such as need to achieve and independence show similarities with their male counterparts. Moreover, Bird (1993) observes that females and males have strong similarities in some characteristics which are related with entrepreneurship such as autonomy, success and control. On top of that Jelenc et al. (2015) find that there is no difference between men and women in the matter of risk taking and innovativeness. According to Runyan et al. (2006) no difference found in the dimension of proactiveness between men and women.

When we take the level of education variable into consideration, Berrone et al. (2014) posit that the level of education is a significant determinant which shapes the framework of a microenterprise. Clercq and Arenius (2006) indicate that individual education level has positive impacts on seizing entrepreneurial opportunities with regard to growing firms. According to Altinay and Wang (2011) analytical, computational and communicational competencies of entrepreneurs are improved by a higher level of education. Moreover, Berrone et al. (2014) state that well educated micro entrepreneurs might have more technical abilities and business intelligence which could influence the performance of the firms and they find that education has positive effect on performance of micro enterprises. These attitudes of educated entrepreneurs can also provide opportunities for firms to be more competitive in their market. Furthermore, Van der Sluis and Van Praag (2008) emphasize that there is a significant relationship between higher level of education and higher performance of the entrepreneurship when sales or profitability are taken into account and this is also possible for sustainability of firms.

On the top of that, Mengistae (2006) find that an entrepreneur with higher levels of education can conduct the business more successfully than an entrepreneur who have less than secondary of primary education. Also, Altinay and Wang (2011) explain that education can improve some characteristics of entrepreneurs, such as creativity, flexibility, self-direction and the skills to cope with different issues and thus, make positive contribution to innovativeness. Mervel and Lumpkin (2007) highlight that education have positive impacts on innovation radicalness. De Winne and Sels (2010) prove that education has significant influences on innovation output. By analysing 389 Japanese firms, Kato et al. (2015) highlighted that education of an entrepreneur positively effects to his investment into the research and development projects so his small firm can be more innovative in the specific market. In their study, Rauch and Rijdsdijk (2013) describe that entrepreneurs who are

highly educated are negatively related with firm failure. By examining a data from 139 owners of Turkish ethnic small enterprises in London, Altinay and Wang (2011) find that education has positive relationship with innovativeness, risk taking and proactiveness of firms. Van der Sluis et al. (2005) clarify that when entrepreneurs are highly educated, they are more prone to be self-independent than the regular wage earners. Additionally, Ismail (2014) proves that need for autonomy is the only component which differs between the levels of education of Indonesian women and men entrepreneurs. According to Islam et al. (2011), entrepreneurship education enhance the existence of new ventures, tendency of self-employment, improving new products and self-employed graduates owning a high technology firm.

However, by examining 500 university students in Nigeria, Mamman (2014) finds that entrepreneurship education does not have impacts on capacity building for these students to set up their new ventures due to lack of technical entrepreneurship education. Similarly, Oosterbeek et al. (2010) investigate an entrepreneurship education program in Netherland and find that entrepreneurship education does not have any significant impact to create competencies for collage level students to set up their own business. Bartos et al. (2015) find that university educated entrepreneurs are more motivated to start their own business than the school educated entrepreneurs as they find it as a mission to be independent.

To view the last variable, we will look at the age of the firm. According to Luo et al. (2005) and Rosenbusch et al. (2011), there are more probabilities that younger firms show more entrepreneurial strategic behaviours rather than older. Hausman (2005) shows that younger micro firms perform better in innovativeness comparing with older micro firms. Anderson and Eshima (2013) show that having lack of routines and more organic organizational structures young firms can make more radical innovations with having potential for growth and also they can be easily adaptable to changing environments. Anderson and Eshima (2013) find that innovativeness, proactiveness, and risk taking are more positively related to firm growth among younger SMEs than older firms. Hence, due to these attitudes of young firms they can show more competitive behaviours than their older rivals. Moreover, younger firms are not well disciplined and usually careless and more autonomous in strategic decision making process (Eisenhardt, 1989). Similarly, Rosenbusch et al. (2011) state that younger firms are more active to gain better chances from innovativeness, proactiveness and risk taking strategic behaviours than older firms.

According to Berrone et al. (2014), previous experience might enhance the process of decision making and information. Islam et al. (2011) emphasize that firms having longer time in operation are more successful than the short lived firm. On top of that, by using a sample from 1000 SMEs in the UK, Laforet (2013) observes that older companies are better for innovation than the young companies due to having more experienced employees. Thapa (2015) argues that in progress of time, firms get more experiences and make more observation and be informed by these actions. As firms, entrepreneurs also have more experiences, when they carry on their business throughout this learning process. In this regard, some studies highlight that entrepreneurs who have more experiences take more risk, have higher level of innovativeness and proactiveness than the less experienced entrepreneurs (Jelenc et al., 2015; Altinay and Wang, 2011; Kraus, 2013).

Marques et al. (2013) also state that cognitive factors such as high risk exposure, recognition of opportunities and perception of probability to success are related to experience. Additionally, some studies argue that experience of an entrepreneur plays an important role in the economic growth of the firm (Brunow and Hirte, 2006; Mengistae, 2006; Islam, 2011). However, Ismail (2014) finds that experience of women entrepreneurs have no differences in entrepreneurial competencies. On the other hand, Rauch and Rijdsdijk (2013) do not find any significant effect of specific work experience with firm growth. Moreover, Levesque and Minniti (2006) make an explanation that when a person gets older and has more experiences she rather wants to have a more stable life with

a regular income source. According to Levesque, Minniti (2011), older people are less motivated to take any business initiatives at their late age.

2. DATA AND METHODOLOGY

The purpose of this paper is to find the EO differences in relation to gender and education level of Czech micro entrepreneurs. On top of that, to show whether entrepreneurial orientation may differ according to the age of the enterprise.

On the basis of the survey of the quality of the business environment, the study was implemented by using a questionnaire in the Czech Republic in 2015. The total number of 1650 firms was chosen randomly from the Albertina database. These companies were contacted by e-mail or telephone to fulfil the questionnaire that is presented on website https://docs.google.com/forms/d/1U9coaC5JRL0N2QOOO6Xb8j3mnaZXdSM47Kugt4EDGFo/vie wform?usp=send_form. We have received 1141 responses from the SMEs which are located in 14 different regions of Czech Republic. 740 respondents (65 %) of them are belonged to the segment of micro enterprises which identified by the Commission of European Communities, have employees between 0 and 9.

In relation to the gender and education, the structure of micro entrepreneurs was as follows: 73% male (540 respondents), 27% female (200 respondents); 29% have graduated from university (215 respondents), 71% have other types of education level (525 respondents). 37% of women micro entrepreneurs (74 respondents) have university degree whereas only 25% of men micro entrepreneurs (108 respondents) are graduated from university.

The structure of the micro enterprises in relation with their age was as follows: 53% of micro firms operate more than 10 years (390 firms), 29% of them exist between 1 and 5 years (215 firms) and 18% of companies are in existence between 5 and 10 years (135 firms). In our study, we assume that companies are exist 10 and more years are older firms and the others which operate less than 10 years are younger firms.

The questionnaire was consisted of 52 questions and nine questions were asked to respondents in connection with their firms' location, sector of their businesses, the duration of their firm, size of their company, their education level, their gender, their motivation factors to set up a new venture, the qualities and skills which an entrepreneur strongly need to have. Other forty three enquiries were asked to the respondents to evaluate the five dimensions of entrepreneurial orientation by using five point Likert scale (1-strongly agree, 2-agree, 3-undecided, 4-disagree, 5-strongly disagree).

Being in line with the chosen aim, five enquiries (one enquiry for each of the dimensions) were selected to explore the results for innovativeness, risk taking, proactiveness, competitive aggressiveness and autonomy of the businesses. In the context of the evaluation of innovativeness, the following question was selected, "My company has a reputation of an innovator". In order to measure risk taking dimension, the question was chosen that "I'm not afraid to invest money in risky projects". With the purpose of assessing proactiveness, this query was picked that "We take initiative in our market to get ahead of a competition". Moreover, we have calculated to competitive aggressiveness by choosing the question that "We often do activities that are directed against competitors." Lastly, we have gauged the autonomy which consists of the query that "My company has a reputation of an autonomous company" (the owners of company act independently).

In this research, five scientific hypotheses were set for estimation.

H1: There are statistically significant differences exists between the genders and the education levels of entrepreneurs and the age of firms in relation to innovativeness.

H2: There are statistically significant differences exists between the genders and the education levels of entrepreneurs and the age of firms in relation to risk taking.

H3: There are statistically significant differences exists between the genders and the education levels of entrepreneurs and the age of firms in relation to proactiveness.

H4: There are statistically significant differences exists between the genders and the education levels of entrepreneurs and the age of firms in relation to competitive aggressiveness.

H5: There are statistically significant differences exists between the genders and the education levels of entrepreneurs and the age of firms in relation to autonomy.

Pearson' chi square statistics were used at significance level of 5% to analyse the sample and to show the statistically significant differences and dependences between selected factors. When p value is lower than the significance level of 5%, the null hypothesis was rejected and alternative hypothesis was accepted. The null hypothesis assumes that there is not any statistically significant relationship between the selected factors. MS Excel and free statistical software were used to make calculations. The statistical software is available at <http://www.socscistatistics.com/tests>. Statistically significant differences in the individual responses were analysed by way of Z score. The free software was applied to perform calculations and the software is in existence at: <http://www.socscistatistics.com/tests/ztest/Default2.aspx>.

3. RESULTS AND DISCUSSION

Table 1 indicates the results of our research in connection with the measurement of innovativeness among men and women, different education levels of entrepreneurs and age of the firms.

Table 1. Evaluation of innovativeness among gender and education level of micro entrepreneurs and micro enterprises' age

My company has a reputation of an innovator. (innovativeness)	Total	Men	Women	Secondary education	Other types of education	Older than 10 years (10+)	Younger than 10 years (10-)	P-value Z-score M/W HE/OE 10+/10-
Completely agree and agree	269 (36.35)	193 (35.74)	76 (38.00)	92 (42.79)	177 (33.71)	126 (32.31)	143 (40.86)	0.5619 0.0198 0.016
I don't have a position	299 (40.41)	225 (41.67)	74 (37.00)	71 (33.02)	228 (43.43)	174 (44.62)	125 (35.71)	0.2501 0.0088 0.9124
Completely disagree and disagree	172 (23.24)	122 (22.59)	50 (25.00)	52 (24.19)	120 (22.86)	90 (23.08)	82 (23.43)	0.4902 0.6965 0.0139
Total:	740	540	200	215	525	390	350	
Chí - square/ P-value		1.7198 0.7871		10.2691 0.0361		8.2475 0.0829		

Source: Own source

According to Table 1, our results for P value from Chi Square demonstrate that there are significant differences exists between the education levels of entrepreneurs and age of firms in the context of innovativeness. With regards to education levels, the P-value from Chi Square shows that our result is significant at 5% significance level ($p < 0.05$). We find that 92 (about 43%) among 215 secondary

educated micro entrepreneurs completely agree and agree that “My company has a reputation of an innovator”. On the other hand, around 34% lower educated people completely agree and agree with this fact. Also, P value from Z score is significant at 5% significance level ($p < 0.05$) and shows that entrepreneurs who have graduated with university education are more innovative comparing with less educated micro entrepreneurs.

Considering the firm age, the P value from Chi Square is also significant but in 10% significance level ($0.0829 < 0.10$). This result suggests that significant differences are in existence between older and younger micro firms. We obtain another result that 143 (about 41%) owners of younger firms in total 350 micro entrepreneurs completely agree or agree with the following fact that “My company has a reputation of an innovator”. On the other side, P value from Z score is significant at 5% level ($p < 0.05$) and indicates that younger micro enterprises are more innovative rather than older micro firms.

However, no statistical differences were found in innovativeness within the scope of gender of the micro entrepreneurs. P value from Chi Square is not significant in both significance levels 5% and 10%.

The above mentioned results from Table 1, give an explanation to us that, we can partially accept our hypothesis 1, due to rejecting the fact that men are more innovative than women. Our other assumptions are accepted because we find that university educated micro entrepreneurs and younger micro firms perform better than less educated micro entrepreneurs and older companies.

Table 2 shows the results of our research in relation with the measurement of risk taking among males and females, varied education levels of entrepreneurs and age of firms.

Table 2. Evaluation of risk taking amongst gender, education levels of micro entrepreneurs and micro enterprises' age

I'm not afraid to invest money in risky projects. (risk taking)	Total	Men	Women	Secondary education	Other types of education	Older than 10 years (10+)	Younger than 10 years (10-)	P-value Z-score M/W HE/OE 10+/10-
Completely agree and agree	230 (31.08)	171 (31.67)	59 (29.50)	65 (30.23)	165 (31.43)	99 (25.38)	131 (37.43)	0.5754 0.749 0.0004
I don't have a position	138 (18.65)	105 (19.44)	33 (16.50)	32 (14.88)	106 (20.19)	76 (19.49)	62 (17.71)	0.3628 0.093 0.5353
Completely disagree and disagree	372 (50.27)	264 (48.89)	108 (54.00)	118 (54.88)	254 (48.38)	215 (55.13)	157 (44.86)	0.2076 0.1074 0.0053
Total:	740	540	200	215	525	390	350	
chi - square/ p-value		2.7062 0.6081		5.2973 0.2581		13.8989 0.0076		

Source: Own source.

With reference to Table 2, we observe that there are significant differences exist among younger and older micro enterprises in risk taking as P value from Chi Square is significant at 5% significance level ($p < 0.05$). When we consider P value from Z score, the result is also significant at

5% significance level. The result provides us to make a suggestion that younger micro enterprises are more risk taker than the older micro enterprises. 131 (about 37%) owners of young micro enterprises in between 350 micro entrepreneurs are completely agree or agree the fact that “I'm not afraid to invest money in risky projects”. But, only 99 (about 25%) owners of old micro enterprises in between 390 micro entrepreneurs are completely agree or agree with this fact. On top of that, when we pay attention to P value from Z score for the section of disagree and completely disagree, P value is significant and it means that comparing with younger firms' owners, higher percentage of owners of older micro entrepreneurs confirm that they are completely disagree and disagree with the fact that they are not afraid to invest their money to risky projects. Hence, we can conclude that they behave more risk averse than the owner of younger micro firms.

On the other hand, we do not find any significant differences between gender and education level of micro entrepreneurs with regards to risk taking. Statistically, P values from Chi Square and Z score are both insignificant. Because of having these results, again we can partially confirm our hypothesis 2. Although we accept one of our assumptions that younger firms take more risks than older firms, we reject both of those assumptions that men and more educated micro entrepreneurs are more risk taker than women and lower educated entrepreneurs.

Table 3 presents the results of our research with respect to the assessment of proactiveness among males and females, varied education levels of entrepreneurs and age of firms.

Table 3. Evaluation of proactiveness amongst gender, education levels of micro entrepreneurs and micro enterprises' age

We take initiative in our market to get ahead of a competition (proactiveness)	Total	Men	Women	Secondary education	Other types of education	Older than 10 years (10+)	Younger than 10 years (10-)	P-value Z-score M/W HE/OE 10+/10-
Completely agree and agree	427 (57.70)	305 (56.48)	122 (61.00)	120 (55.81)	307 (58.48)	207 (53.08)	220 (62.86)	0.2627 0.5029 0.0071
I don't have a position	188 (25.41)	137 (25.37)	51 (25.50)	60 (27.91)	128 (24.38)	115 (29.49)	73 (20.86)	0.9681 0.3173 0.0071
Completely disagree and disagree	125 (16.89)	98 (18.15)	27 (13.50)	35 (16.28)	90 (17.14)	68 (17.44)	57 (16.29)	0.0264 0.7795 0.6745
Total:	740	540	200	215	525	390	350	
chi - square/ p-value		4.8953 0.2982		2.4129 0.6603		10.3309 0.0352		

Source: Own source.

We find similar results with the dimension of risk taking, when we analyse the proactiveness. Our results suggest that there are significant differences exists between younger and older micro enterprises in respect to proactiveness. When we look at the P value from Chi-Square in the table 3 for the section of age of the firms, the P value is statistically significant at 5% significance level ($p < 0.05$). Furthermore, the p value from Z score (0.0071) is also significant at 5% significance level and it proves that younger micro firms are more proactive than older micro firms. 220 (about 63%) respondents from younger micro firms in between 350 younger micro firms completely agree or agree that “We take initiative in our market to get ahead of a competition”. On the other hand, 207

(around 53%) respondents from older micro firms in between 390 older micro firms completely agree or agree with this opinion.

However, we do not receive any significant differences between gender and education level of owners of micro firms. P values from Chi Square and Z score are not significant for the variables of gender and education level with regard to proactiveness.

In consideration of these results, we can again partially accept our hypothesis 3. We can only prove that younger firms are better in the dimension of proactiveness than older firms. On the other hand, we do not find any significant differences between not only for women and men, but also higher educated and lower educated entrepreneurs in the context of proactiveness.

Table 4 reveals the results of our research in the context of the appraisalment of competitive aggressiveness in between men and women, various education levels of micro entrepreneurs and micro enterprises' age.

Table 4. Evaluation of competitive aggressiveness amongst gender, education levels of micro entrepreneurs and micro enterprises' age

We often do activities that are directed against competitors. (competitive aggressiveness)	Total	Men	Women	Secondary education	Other types of education	Older than 10 years (10+)	Younger than 10 years (10-)	P-value Z-score M/W HE/OE 10+/10-
Completely agree and agree	157 (21.22)	111 (20.56)	46 (23.00)	41 (19.07)	116 (22.10)	79 (20.26)	78 (22.29)	0.4715 0.3628 0.5029
I don't have a position	162 (21.89)	116 (21.48)	46 (23.00)	41 (19.07)	121 (23.05)	87 (22.31)	75 (21.43)	0.6599 0.2340 0.7718
Completely disagree and disagree	421 (56.89)	313 (57.96)	108 (54.00)	133 (61.86)	288 (54.86)	224 (57.44)	197 (56.29)	0.3320 0.0801 0.749
Total:	740	540	200	215	525	390	350	
chi - square/ p-value		1.2569 0.8687		10.7808 0.0291		1.7307 0.7851		

Source: Own source.

When we consider the education level of micro entrepreneurs, P value from Chi Square indicates that there are significant differences exist between the university educated and lower educated entrepreneurs according to competitive aggressiveness ($p < 0.05$). We can also notice from our calculation that P value from Z score for disagreed and completely disagreed respondents in the context of level of education is statistically significant at 10% significance level. This result shows that comparing with lower educated micro entrepreneurs, higher percentage of micro entrepreneurs who have university degree completely disagree and disagree with the opinion that "We often do activities that are directed against competitors". Although, we find that they are more against to the opinion that is based on competitive aggressiveness, statistically we do not get any significant result that lower educated micro entrepreneurs are more competitive than others.

On the other hand, the results also indicate that there is no significant difference between the older and younger micro enterprises and also men and women micro entrepreneurs in relation with

competitive aggressiveness. Our both P values from Z score and Chi Square are not significant to explain the differences between them.

When examining all of these results with regards to competitive aggressiveness, we reject our hypothesis 4. We do not have any significant findings to accept our hypothesis that males, university educated entrepreneurs and younger firms are better in the dimension of competitive aggressiveness than females, lower educated entrepreneurs and older firms.

The results of our research in the context of the assessment of autonomy among men and women, various education levels of entrepreneurs and older and younger firms were presented in the Table 5.

Table 5: Evaluation of autonomy amongst genders, education levels of micro entrepreneurs and micro enterprises' age

My company has a reputation of an autonomous company (the owners of company act independently). (Autonomy)	Total	Men	Women	Secondary education	Other types of education	Older than 10 years (10+)	Younger than 10 years (10-)	P-value Z-score M/W HE/OE 10+/10-
Completely agree and agree	358 (48.38)	256 (47.41)	102 (51.00)	124 (57.67)	234 (44.57)	188 (48.21)	170 (48.57)	0.3843 0.0012 0.9203
I don't have a position	172 (23.24)	122 (22.59)	50 (25.00)	52 (24.19)	120 (22.86)	83 (21.28)	89 (25.43)	0.4902 0.6965 0.1835
Completely disagree and disagree	210 (28.38)	162 (30.00)	48 (24.00)	39 (18.14)	171 (32.57)	119 (30.51)	91 (26.00)	0.1074 8E-05 0.1738
Total:	740	540	200	215	525	390	350	
chi - square/ p-value		4.1301 0.3887		18.4964 0.0009		2.7128 0.607		

Source: Own source.

The most important result for this table is that significant differences are exists between education levels of micro entrepreneurs with respect to autonomy due to having significant P value from Chi Square at 5% level. 124 (around 58%) university educated owners of micro enterprises in between 215 owners of micro enterprises completely agree or agree with the fact that "My company has a reputation of an autonomous company". By contrast with this finding, 234 respondents (around 45%) who have lower education level, completely agree and agree with the opinion. On top of that, P value from Z score is also significant at 5% significance level and it is almost level of certainty. Owing to this result, we can support one of our proposals that higher educated entrepreneurs are more autonomous comparing with their lower educated counterparts. Additionally, we can also provide a finding that the difference of lower and highly educated entrepreneurs who are completely disagreed and disagreed is also significant that shows lower educated micro entrepreneurs are more disagree the opinion that their firm has a reputation of an autonomous firm.

On the other hand, P value from Z score and Chi Square are not statistically significant at 5% level for the genders and age of firms in the context of autonomy. For this reason, our results indicate that

there is no significant difference between men and women micro entrepreneurs and older and younger micro firms in relation to autonomy. Consequently, we can only partially confirm our hypothesis 5. Only one of our assumptions about autonomy is supported that high educated entrepreneurs have more autonomy than their lower educated counterparts. Our other assumptions for autonomy such as males are more autonomous than women and younger firms behave more autonomously than older firms are rejected.

Some results of our study indicate that there is no statistical difference exists in relation with the all dimensions of EO such as, innovativeness, risk taking, proactiveness, competitive aggressiveness, autonomy in between men and women in the segment of micro enterprises. Our results show some similarities with the study of Jelenc et al. (2015) also does not find any differences with regard to dimensions of risk taking and innovativeness. Considering the research of Runyan et al. (2006), one of our results also same with their finding that no difference is in existence in relation to proactiveness among genders. In terms of the dimension of autonomy, another important result of our research is also very similar with the work of Bird (1993) that finds females and males have strong similarities in autonomy. With respect to the competitive aggressiveness, our result is opposed to the research of Lim and Envick (2011). Although we get a result that there is not any significant difference in competitive aggressiveness between females and males, Lim and Envick (2011) prove that males are more aggressive in the competitiveness comparing with females.

As we mentioned above that, no significant differences are found between men and women in relation with all components of EO which are examined in this study. This important result can be related with education levels which the respondents have in our sample. Cowling and Taylor (2001), highlight that there are some proof in some developed countries that women entrepreneurs participate higher education levels more than men and their overall level of education is significantly higher comparing with their men counterparts. According to our data which consists of Czech micro entrepreneurs, 37% of women micro entrepreneurs have university degree whereas only 25% of men micro entrepreneurs are graduated from university. This finding proves the expression of Cowling and Taylor (2001). Furthermore, Carter et al. (2007) provide an explanation that the gender criteria for loan process diminish when higher level of education is taken into consideration. Similarly, Wilson et al. (2007), emphasize that when men and women entrepreneurs access to market, higher education can mitigate the differences between them. By investigating 235 women entrepreneurs in USA, Carter et al. (2003) find that higher educated women entrepreneurs are more prone to get funded by external financing comparing with less educated women. All these studies provide us to make a suggestion that because of being high educated and using the opportunities of market, women micro entrepreneurs in our sample could behave as same as their male counterparts in the dimensions of EO. It can be also a reason for us to have no significant differences in our assessments.

When we consider the education level of micro entrepreneurs, our results show significant differences with regard to innovativeness, competitive aggressiveness and autonomy. However, there is no statistically significant difference exists between various levels of education in relation with competitive aggressiveness so we reject one of our assumptions that higher educated entrepreneurs act more in the competitive aggressiveness than their lower educated counterparts. On the other hand, our results also demonstrate that higher educated micro entrepreneurs perform better in innovativeness and autonomy comparing with their less educated counterparts. In this respect, we get similar findings with Altinay and Wang (2011) that prove education is positively related with innovativeness. But, our results do not show the positive relationship between education and the both dimensions of EO, risk taking and proactiveness which is not same as the study of Altinay and Wang (2011) that finds the positive relationship among these variables.

Moreover, one of our results which is related to autonomy shows some similarities with the research of Ismail (2014). Ismail (2014) finds the differences between the level of education and need for autonomy among Indonesian women entrepreneurs. Although, our results prove that micro entrepreneurs who have university degree are more innovative and autonomous than lower educated micro entrepreneurs, we do not get any result that there are differences exist in between highly educated and lower educated micro entrepreneurs in terms of risk taking and proactiveness. So our results can make some suggestions that highly educated entrepreneurs in our sample could have more knowledge about the process of their business and could have more different competencies in their decision making process so they could be more innovative and autonomous comparing with their lower educated counterparts. Presumably, because of the uncertainty in the Czech market, more educated micro entrepreneurs can act same as their less educated counterparts with regard to risk taking and proactiveness and therefore, our results do not show the differences between education levels.

According to our results in terms of age of firms, we observe that significant differences are exists in regard to innovativeness, risk taking and competitive aggressiveness in between older and younger micro firms. We also receive statistically significant results that younger firms are better than the older firms in three dimensions of EO, such as innovativeness, risk taking and proactiveness. These results demonstrate similarities with the studies of Anderson and Eshima (2013) and Rosenbusch et al. (2011) that also present younger firms perform more actively than older firms in innovativeness, risk taking and proactiveness. Because of their more flexible structure and lower level of processes comparing with older firms, younger firms can make radical decisions to change their operations, production processes or business lines easier than older firms. In this regard, our results suggest that younger firms are more innovative, risk taker and proactive than older firms.

However, our results do not provide any significant differences among older and younger micro enterprises in the context of autonomy and competitive aggressiveness. As we already explained elsewhere, because of being more experienced, older firms can have some opportunities such as having more observation and being aware of market conditions. Having these abilities can give older firms a chance to close the gap between younger firms so as our results suggest they behave as same as younger firms with regard to both dimensions of EO, competitive aggressiveness and autonomy.

CONCLUSION

The objective of the study was to explore the differences in gender and education level of entrepreneurs and enterprises' age in connection with their EO in the segment of micro enterprises. Our data that is created by a survey of the quality of the business environment consists of randomly selected 1650 SMEs in the Albertina database. But our sample includes 1141 of SMEs and 740 of them are identified as micro enterprises. The survey was fulfilled in 2015 in fourteen different regions of Czech Republic. Due to having lack of studies which include all five dimensions of EO, we have analysed all these dimensions namely, innovativeness, risk taking, proactiveness, competitive aggressiveness and autonomy.

The results of our study suggests that university educated micro entrepreneurs are more innovative and autonomous than their lower educated counterparts. Moreover, the results of our research suggest that younger micro enterprises are more innovative, risk taker and proactive than older micro enterprises. However, our results do not find any significant differences between women and men micro entrepreneurs in relation with all dimensions of EO which we have examined in this study. Furthermore, some of our results show no differences between education levels of micro

entrepreneurs in the context of risk taking and proactiveness and also amongst older and younger micro enterprises with respect to their competitive aggressiveness and autonomy. Although we include all dimensions of EO and different characteristics of entrepreneurs and enterprises in our comprehensive research, our study has some boundaries and limitations. For instance, we have limited data that only contains a country namely, Czech Republic. Because of this limitation, we cannot look from a broader perspective and we cannot be aware of the dissimilarities and similarities among different countries. Furthermore, in respect to segments of firms, our only focus is micro enterprises. Another important limitation is that, we have not considered some of demographic characteristics of entrepreneurs and enterprises, such as age of entrepreneurs and location of enterprises and so on. For these reasons, these limitations can give significant opportunities for future research.

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REFERENCES

1. Altinay, L., Wang, C. L. (2011), The influence of an entrepreneur's socio-cultural characteristics on the entrepreneurial orientation of small firms, *Journal of Small Business and Enterprise Development*, Vol. 18, No. 4, pp. 673-694.
2. Anderson, B. S., Eshima, Y. (2013), The influence of firm age and intangible resources on the relationship between entrepreneurial orientation and firm growth among Japanese SMEs, *Journal of Business Venturing*, Vol. 28, pp. 413-429.
3. Arenius, P., Minniti, M., (2005), Perceptual Variables and Nascent Entrepreneurs, *Small Business Economics*, Vol. 24, pp. 233-247.
4. Ayub, A., Razzaq, A., Aslam, M. S., Iftekhhar, H. (2013), Gender effects on Entrepreneurial orientation and value innovation: evidence from Pakistan, *European Journal of Business and Social Sciences*, Vol. 2(1), pp. 82-90.
5. Bartoš, P., Rahman, A., Horák, J., Jáčová, H. (2015), Education and entrepreneurship in the SME segment in economic transformation, *Economics and Sociology*, Vol. 8, No 2, 2015, pp. 227-239.
6. Belás, J., Vojtovič, S., Ključnikov, A. (2016), Microenterprises and Significant Risk Factors in Loan Process, *Economics and Sociology*, Vol. 9, No 1, pp. 43-59.
7. Berrone, P., Gertel, H., Giuliadori, R., Bernard, L., Meiners, E. (2014), Determinants of Performance in Microenterprises: Preliminary Evidence from Argentina, *Journal of Small Business Management*, 52(3), pp. 477-500.
8. Bird, B. J. (1993), Demographic approaches to entrepreneurship: The role of experience and background, *Advances in Entrepreneurship, Firm Emergence and Growth*, 1, pp. 11-48.
9. Brugger, E. and Rajapatirana, S. (1995), New perspectives on financing small business in developing countries, San Francisco, *Institute for Contemporary Studies Press*.
10. Brunow, S., Hirte, G. (2006), Age structure and regional economic growth, *Review of Regional Research*, Vol. 26, pp. 3-26.
11. Carter, N. M., Brush, C. G., Greene, P. G., Gatewood, E., Hart, M. M., (2003), Women entrepreneurs who break through to equity financing: the Influence of human capital, social and financial capital, *Venture Capital*, Vol. 5(1), pp. 1-28.

12. Carter, S., Shaw, E., Lam, W., Wilson, F. (2007), Gender, entrepreneurship, and bank lending: The criteria and processes used by bank loan officers in assessing applications, *Entrepreneurship Theory and Practice*, Vol. 31(3), pp. 427-444.
13. Clercq, D. D., Arenius, P. (2006), The role of knowledge in business start-up activity, *International Small Business Journal*, Vol. 24 No. 4, pp. 339-58.
14. Covin, J. G., Lumpkin G. T. (2011), Entrepreneurial orientation theory and research: Reflections on a needed construct, *Entrepreneurship Theory and Practice*, pp. 855-872. DOI: 10.1111/j.1540-6520.2011.00482.x.
15. Covin, J. G., Wales, G. (2012), The measurement of entrepreneurial orientation, *Entrepreneurship Theory and Practice*, pp. 677-702. DOI: 10.1111/j.1540-6520.2010.00432.x.
16. Cowling, M., Taylor, M. (2001), Entrepreneurial women and men: Two different species? *Small Business Economics*, Vol. 16(3), 167–176.
17. Cressy, R. (1996), Are business startups debt-rationed? , *Economic Journal* 106, pp. 1253–1270.
18. De Winne, S., Sels, L. (2010), Interrelationships between human capital, HRM and innovation in Belgian start-Ups aiming at an innovation strategy, *International Journal of Human Resource Management*, Vol. 21, pp. 1863– 1883.
19. Diaz-Garcia, M. C., Jimenez-Moreno, J. (2010), Entrepreneurial intention: the role of gender, *International Entrepreneurship Management Journal*, Vol. 6, pp. 261-283.
20. Eisenhardt, K.M. (1989), Making fast strategic decisions in high-velocity environments, *Academy of Management Journal*, Vol. 32, pp. 543–576.
21. Goktan, A. B., Gupta, V. K., (2015), Sex, gender, and individual entrepreneurial orientation: evidence from four countries, *International Entrepreneurship and management Journal*, Vol. 11, pp. 95-112.
22. Hausman, A. (2005), Innovativeness among small business: *Theory and propositions for future research*, *Industrial Marketing Management*, Vol. 34, pp. 773-782.
23. Islam, A. M., Khan, A. M., Obaidullah, M. Z. A. and Alam, N. S., (2011), "Effect of entrepreneur and firm characteristics on the business success of SMEs in Bangladesh", *International Journal of Business and Management*, Vol. 6(3), pp. 289-299.
24. Ismail, V. Y. (2014), The Comparison of Entrepreneurial Competency in Woman Micro-, Small-, and Medium-scale Entrepreneurs”, *Procedia - Social and Behavioral Sciences* , Vol. 115, pp. 175–187.
25. Jelenc, L., Pisapia, J., Ivanusic, N. (2015), Demographic Variables Influencing Individual Entrepreneurial Orientation and Strategic Thinking Capability, *10th International Scientific Conference on Economic and Social Development – Miami*.
26. Ključnikov, A., Belás, J., Kozubíková L., Paseková P. (2016), The Entrepreneurial Perception of SME Business Environment Quality in the Czech Republic, *Journal of Competitiveness*, Vol. 8, Issue 1, pp. 66 – 78.
27. Kraus, S. (2013), The role of entrepreneurial orientation in service firms: empirical evidence from Austria, *The Service Industries Journal*, Vol. 33, No. 5, pp. 427 –444.
28. Kato, M., Okamuro, H., Honjo, Y. (2015), Does founder human capital matter for innovation? Evidence from Japanese start-ups, *Journal of Small Business Management*, Vol. 53(1), pp. 114-128.
29. Laforet, S. (2013), "Organizational innovative outcomes in SMEs: effects of size, age and sector", *Journal of World Business*, Vol. 48, pp. 490-502.
30. Langowitz, N., Minniti, M. (2007), Entrepreneurial propensity of women, *Entrepreneurship Theory and Practice*, Vol. 31(3), pp. 341-364.
31. Larson, D. W., Shaw, T. K. (2001), Issues of microenterprise and agricultural growth: do opportunities exist through forward and backward linkages? , *Journal of Developmental Entrepreneurship*, 6(3), pp. 203-220.
32. Lechner, C., Gudmundsson V. S. (2014), Entrepreneurial orientation, firm strategy and small firm performance, *International Small Business Journal*, Vol. 32(1), pp. 36-60.

33. Levesque, M., Minniti, M. (2006), The effect of aging on entrepreneurial behavior", *Journal of Business Venturing*, Vol. 21, pp. 177- 194.
34. Levesque, M., Minniti, M., (2011), Age matters: How demographics influence aggregate entrepreneurship, *Strategic Entrepreneurship Journal*, Vol. 5, pp. 255-284.
35. Liedholm, C. (1990), The dynamics of small scale industry in Africa and the role of policy, Michigan State University, East Lansing, MI (unpublished draft)
36. Lim, S., Envick, E. R., (2013), Gender and Entrepreneurial Orientation: A Multi Country Study, *International Entrepreneurship and Management Journal*, Vol. 9, pp. 465-482.
37. Lumpkin, G. T., Dess, G. G. (1996), Clarifying the entrepreneurial orientation construct and linking it to performance, *Academy of Management Review* 21(1), pp. 135–172.
38. Luo, X., Zhuo, L., Liu, S. (2005), Entrepreneurial firms in the context of China's transition economy: An integrative framework and empirical examination, *Journal of Business Research*, Vol. 58, pp. 277–284.
39. Mamman, A. (2014), Effect of entrepreneurship education on capacity building in Small and Medium Scale Enterprises (SMEs) in Nigeria, *International Journal of Social Sciences and Entrepreneurship*, Vol. 1(11), pp. 1-11.
40. Marques, C. S. E., Ferriera J .J. M., Ferriera, F. A. F., Lages, M. F. S. (2013), Entrepreneurial orientation and motivation to start-up a business: evidence from the health service industry, *International Entrepreneurship Management Journal*, Vol. 9, pp. 77-94.
41. Mengistae, T. (2006), Competition and entrepreneurs, human capital in small business longevity and growth, *Journal of Development Studies*, Vol. 42(5), pp. 812-836.
42. Mervel, M. R., Lumpkin G. T. (2007), Technology Entrepreneurs' human capital and Its effect on innovation radicalness, *Enterprises Theory and Practice*, pp. 807-828.
43. Miller, D. (1983), The correlates of entrepreneurship in three types of firms, *Management Science*, 29(7), pp. 770–791.
44. Minniti, M., Nardone, C. (2007), Being in someone else's shoes: The role of gender in nascent entrepreneurship, *Small Business Economics*, Vol: 28, pp. 223-238.
45. Mintzberg, H. (1973), Strategy-making in three modes, *California Management Review*, 16(2), pp. 44–53.
46. Moreno, A., Casillas, J. (2008), Entrepreneurial orientation and growths of SMEs: A causal model, *Entrepreneurship Theory and Practice*, 32(3), pp. 507–528.
47. Moss, T. V., Neubaum, D. O., Meyskens, M. (2015), The effect of virtuous and entrepreneurial orientations on microfinance lending and repayment: A signaling theory perspective, *Entrepreneurship Theory and Practice*, pp.27-52.
48. O'Gorman, C., Terjesen, S. (2006), Financing the Celtic Tigris: Venture financing and informal investment in Ireland, *Venture Capital*, Vol. 8(1), pp. 69-88.
49. Oosterbeek, H., Van Praag, M., Ijsselstein, A., (2010), The impact of entrepreneurship education on entrepreneurship skills and motivation, *European Economic Review*, Vol. 54, pp. 442-454.
50. Pett, T. L., Wolff, J. A. (2012), SME Identity and Homogeneity- Are There Meaningful Differences Between, Micro, Small, and Medium-Sized Enterprises?, *International Council for Small Business*, pp. 15-18.
51. Powell, M., Ansic, D. (1997), Gender difference in risk behavior in financial decision-making: an experimental analysis, *Journal of Economic Psychology*, Vol. 18 No. 6, pp. 605-628.
52. Rauch, A., Rijdsdijk, S. A. (2013), The effects of general and specific human capital on long-term growth and failure of newly founded businesses, *Entrepreneurship Theory and Practice*, Vol. 37(4), pp. 923-941.
53. Rosenbusch, N., Brinckmann, J., Bausch, A. (2011), Is innovation always beneficial? A meta-analysis of the relationship between innovation and performance in SMEs. *Journal of Business Venturing*, Vol. 26, 441–457.

54. Roxas, B., Chadee, D. (2012), Effects of informal institutions on the performance of microenterprises in the Philippines: The mediating role of entrepreneurial orientation”, *Journal of Asia-Pacific Business*, Vol. 13, pp. 320–348.
55. Runyan, R., Huddlestone, P., Swinney, J. (2006), Entrepreneurial orientation and social capital as small firm strategies: A study of gender differences from a resource-based view, *International Entrepreneurship and Management Journal*, 2(4), pp. 455–477.
56. Sexton, D. L., Bowman-Upton, N. (1990), Female and male entrepreneurs: Psychological characteristics and their role in gender-related discrimination, *Journal of Business Venturing*, 5, 29-36.
57. Skokan K., Pawliczek A., Piszczur R. (2013), Strategic planning and business performance of Micro, Small and Medium-Sized Enterprises, *Journal of Competitiveness*, Vol. 5, Issue 4, pp. 57-72.
58. Thapa, A. (2015), Determinants of microenterprise performance in Nepal, *Small Business Economy*, Vol. 45, pp. 581–594.
59. The Commission of the European Communities (2003), Commission recommendation, *Official Journal of European Union*, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:124:0036:0041:EN:PDF>. Accessed 11 May 2016.
60. Van der Sluis, Van Praag, M., Vijverberg, W. (2005), Entrepreneurship selection and performance: A meta-analysis of the impact of education in developing countries, *The World Bank Economic Review*, Vol. 13(2), pp. 225-261.
61. Wagner, J. (2007), What a difference a Y makes-female and male nascent entrepreneurs in Germany. *Small Business Economics*, 28(1), pp. 1–21. doi:10.1007/s11187-005-0259-x.
62. Welsh, D. H. B., Munoz, J. M., Deng, S., Raven, P. V. (2013), Microenterprise performance and microenterprise zones (MEZOs) in China, *Management Decision*, Vol. 51(1), pp. 25-40.
63. Wilson, F. Kickul, J., Marlino, D. (2007), Gender, entrepreneurial self-Efficacy, and entrepreneurial career intentions: implications for entrepreneurship education, *Entrepreneurship Theory and Practice*, Vol. 31(3), pp. 387-406.

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EXPLORING CONSUMERS' PROPENSITY FOR ONLINE SHOPPING IN A DEVELOPING COUNTRY: A DEMOGRAPHIC PERSPECTIVE

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ABSTRACT:

The advent of the Internet continues to open new frontiers in digital marketing. One visible impact of the Internet in marketing has been the growing increase in online transactions which profits marketers and seemingly satisfies customers. However, in developing countries, the potential of online shopping has not been fully explored, and in some cases, are just non-existent. Lack of online infrastructure has often been attributed to the slower growth in online transactions in Africa, however, the customers' preparedness and inclination to use the service is ignored. Against this backdrop, this study seeks to analyze consumers' propensity to engage in online transactions with a focus on demographic attributes such as age, gender and education. Using customers in Ghana as a case study, key reasons as well as the demographics that fancy online transactions are revealed. The results indicate that delivery problems, poor internet connection, privacy and security issues are some of the reasons preventing customers to shop online

KEYWORDS:

E-Commerce, On-Line Shopping, Consumer Buying Behavior, Ghana

INTRODUCTION

One of the most visible impacts on global marketing has been online shopping (Quelch and Klein, 1996). Its introduction has in many ways significantly reduced transactions in the traditional brick and mortar sector. A report from Nielsen Global Consumer Confidence Survey of 2010 on internet shopping habits of customers, revealed a tremendous increase in the shopping habits of customers from 45% to almost 85% from 2011 to 2015 (Nielsen, 2015). The report further indicated that a chunk of internet users are located in countries with the high internet penetration. New Zealand tops the Asia Pacific region with 95% share of internet penetration; Finland recorded the highest internet penetration with 97% share in European region; Argentina leads with 75% share in Latin America; Middle east and some part's of Africa saw United Arab Emirates(UAE) recording 96% of the share of internet penetration; Canada and the United states of America(USA) as well as the North American continent recorded 97% and 87% respectively with Ghana leading Sub Saharan countries of 99% of mobile penetration ahead of its sister countries Nigeria and Kenya.(Nielsen company, 2015)

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As evidenced from the survey, the African continent in general has been recognized as a very weak internet penetration region with lower eCommerce business transactions and in particular the sub Saharan regions. Accordingly, (Naberesah et al., 2014) investigated the factors that inhibit online buying in two emerging countries in the Western part of Africa, namely Nigeria and Ghana to ascertain the readiness of customer's online buying attitude. Their results revealed many factors such as trust, internet connectivity among others as reasons for customers' inability to shop online, in spite of the perceived benefits accruable to customers. Quarshie and Ami-Narh (2012) reiterated in their findings that apart from the massive mobile penetration in Ghana in this recent times, 46.6%, 33.75% engage in online transactions specifically for educational purpose and news respectively, while 6.35% representing the entire populace make use of the internet for transaction. The area of eCommerce and online transactions is entirely new situation in the African sub region. Despite the Western world in deliberating on topics related to consumer's attitudes and perceptions and also factors influencing their purchasing behaviors in the area of eCommerce and online transactions, much has not been done to delving into consumers' willingness to embark on online buying within the African continent. As a matter of fact, these teething problems create a research space to review efforts as well as the rate of online buying behavior of customers in Africa as a whole, and Ghana in particular being the focus of the research. For that reason, this study is aimed at probing into the tendency for online shopping relations, taking cognizance of some demographic factors in Ghana. The findings of this research will serve as a bait for both Multinationals and international corporations who are bent on entering the African continent with ebusiness ideologies.

This exploratory study is further outlined as follows. The next section is captured with related literature and hypotheses development. The third part is centered on the research methods used for the study whilst remaining section presents the research findings. We conclude this paper by offering a detailed discussion, study's implications, limitations, future research proposal followed by final remarks.

1. THEORETICAL BACKGROUND

1.1 Consumer Behavior and online Shopping

With the upsurge of internet penetration within the entire marketing arena in the past few decades, Consumers have sought the need to embark on online transactions. Online transactions or shopping is defined as the way and manner customers make use of the internet in search of information relating to a particular product, and to make trade-offs with the intensions of finalizing a purchase transaction (Alturkestani, 2004). Thus, how, internet users in general make a retail purchase with the aid of internet connectivity (Swinyard and Smith, 2003). The internet as an influence on consumer behavior cannot be overlooked. Numerous studies have provided empirical evidence indicating that customers who shop online are more likely to behave differently in the overall shopping decision as compared to those who shop through the conventional brick and mortar style. (Donthu and Garcia, 1999; Soopramamien and Robertson, 2007).

In line with the inclination for consumers to purchase online coupled with the rate at which consumers are keen on purchasing online, previous studies have measured these scenarios in different contexts. For instance, Lian and Lin (2008) in their studies pointed out that, the extent of consumer's passion to purchase online stems from the fact that customers are more likely to return to their respective websites of purchase within the next three months or during the year from the initial purchase, hence increasing their online purchase. Again, convenience is measured as and when customers make use of the internet to make purchases. Online shoppers stand the chance of enjoying multiple forms of convenience in the form of less physical effort, flexibility in terms of shopping, lenience in responding to promotions as well as advertisement, and finally accompanied

by some user friendly websites (Soopramamien and Robertson, 2007, Suki et al., 2008). Over again, online shoppers intend to recommend others on particular websites with discounts on sales and other information on some particular websites which induce consumers' willingness to purchase online (Domina et al, 2012)

Conversely, previous literatures have elaborated that customers who embark on online purchasing are less likely to inhibit the anxiety in terms of risk of financial cost (Alfred et al., 2006). Doolin et al. (2007) also reiterated that customers in the fold of online purchasing have a higher propensity of risk leniency. Similarly, it was revealed by (Donthu and Garcia, 1999. Brashear et al., 2009) that such customers are less likely to be risk averse more than the traditional brick and mortar customers. Additionally, consumers are keen on the terms used in purchasing through the World Wide Web (www), (Li and Zhang (2002).

On a broader perspective, literature has been reviewed on the concept and measures of consumer behavior within the domain of online purchasing. Taking grasp of the attitudes and tendency for online shopping, the researcher considered a number of factors in the literature ranging from perceived risk in the internet world of shopping, consumer behavior and convenience, satisfaction and predicaments from the online shopping circumstances. This study is centered on consumer behavior of online shopping from a developing economy, reflecting on the tendency for customers to shop through online.

1.2 Demographic interplay of Online Shopping Behavior

Demographic attributes of respondents towards online shopping has been studied extensively in internet marketing in general and an online purchasing behavior in particular. Accordingly, previous literatures have outlined the association between demographic factors that are linked with online buying from countries to countries. Some of these studies were focused on gender, income, age, and education. Table 1. below presents a review of the most important results of such studies

Table 1: Literature support of some selected demographic factors

Demographic factor(s)	Literature support of the selected demographic factors
Gender	(M Gupta, 2010; Stafford et al. 2004; Burke, 2002; Hague and Mahmoud, 2007; Susskind, 2004; Doolin et al. 2005; Bartel-Sheehan, 1999) as cited by Saleh, (2015) Raman et al, 2015; Kumar et al, 2015; Rigas et al, 2015; Rose et al, 2014; Shuyang et al, 2014; Martín et al, 2011, Nathan et al, 2009, Shen et al, 2007, Sakalauskas et al, 2005, Hansen, 2005; Garbarino et al, 2004; Ellen and Michal, 2004; Marie-Odile et al, 2010
Age	Román et al, 2014, Brecht et al, 2010, Kim and Park, 2005, Bouzaabia et al, 2016; Desai et al, 2015; Román, et al, 2014, Mazur et al, 2012; Niu et al, 2014; Kumar et al, 2015; Hart, M., 2008; Xiang and David, 2006; Rajarshi et al, 2016; Jiunn-Woei and David, 2014; Syed, H, 2012
Education	Beldona, et al, 2011; , 2007; Hansen, T., 2005; Sharma and Sitlani, 2013; Román and Riquelme, 2014, Raman and Pramod, 2015; Jianwei and Kevin, 2014, Luca et al, 2016, Xiang and David, 2006; Syed, H, 2012; Soyeon et al, 1991

Source: (Own research)

2. RESEARCH QUESTIONS AND HYPOTHESIS

Taking into account the findings of the previous studies on consumers' willingness for online shopping. The following research questions were outlined in the study. Borrowing from the words of Maceviciute (2007), cited from Alison Jane Pickard, research questions are stated to propel a research design into specific study. In this research, the under listed research questions are proposed in tandem with the objective of the paper to guide the study:

RQ1: What is the significant relationship between age and gender at how often consumers use internet/online channel for shopping.?

RQ2: Does age have a relationship with channel(s) consumers use to check for the availability of new products.?

RQ3: Does education and age have a relationship with the usage of internet shopping?

2.1 Hypothesis Development

On the basis of the above discussions and previous empirical findings towards demographic interplay of respondents, we stated the following hypotheses prior to the research.

H1: There are no relationships between consumers age and gender on how often the internet is used for shopping.

H2: There are no relationships between consumers age and gender on checking availability of new product

H3: There are no relationship between education and age for consumers on the usage of internet for shopping

3. METHODOLOGY

3.1 Sample and procedure

This study was conducted on the notion of probability sampling. Hence, the random sampling technique was used in the study, indicating that each member of the population has an equal chance to be sampled for the study. In the gist to ascertain a deeper and accurate results of a larger population under study, pertaining to a particular research, it demands the use of simple random sampling (Liu et al,2004). Data collection of our work was prepared in the form of a questionnaire with the help of Google Docs application software. A questionnaire has been used because it is a well-established tool within social science research that aids in acquiring information on the participants' social characteristics, present and past behavior, standards of behavior or attitudes and beliefs and also reasons for action with respect to the topic under investigation (Bulmer, 2004). The questionnaire was prepared entirely on the bases of close ended type with seventeen questions. The period of data collection was between December 2015 to February 2016.

For the sake of the study, the questionnaire was sent through online for respondents to fill. In an attempt to increase the response rate for the study, questionnaires were printed as a hard copy format in Ghana through emails by some resource correspondents to aid in the research. 602 questionnaires were made available for a sample of the targeted population in the capital of Ghana and the second largest city in Ghana, namely Accra and Kumasi respectively. Out of 602 questionnaires that were issued to the respondents, a total of 563 were received, of which 52 of these responses were invalid and hence were omitted from our analyses. However, 511 valid questionnaires were accurately considered for our analyses, demonstrating approximately 88% of the entire questionnaires to the respondents. Adindoft XL starts(2014) software was used for our

evaluation. Table 2. Below shows the frequencies and percentages for some demographic factors of our sample. These consist of gender, age, education and employment level of respondents.

The demographic profile of the respondents' frequencies and percentages are summarized in Table 2. Of the respondents, there were more female (267) representing (52.3%) ahead of males of (244) with (47.7%). The majority of the respondents came from the age group between 18-29, (326) which represents 63.9% out of the total. In terms of education, most respondents were Bachelors or University graduates (293). That is with the first degree representing 57.9% of the total, followed by those who completed postgraduate level, in other words, with masters and PhD studies. Approximately half of the respondents had a job (222) with 43.4% while the other half had no job (204) with 44% as of the time of the research.

The dependence of the given variables, that is the dependence of the aforementioned demographics and the propensity of online shopping was tested by using Pearson's chi-square test at a significance level of $\alpha=0.05$. On the foundations of the interdependence of achieving value of the chi-square statistics (χ^2) as well as the set of data values, it has been ascertained whether the hypothesis set prior to the research should have been accepted or rejected. It must be stated that in most of our assessment of hypotheses, we made use of descriptive statistics with percentage calculations.

Table 2. Socio-demographic profile of respondents

Demographic considerations of the respondents		Frequencies	Percentages %
Gender	Male	244	47.7
	Female	267	52.3
Age	18-29 years	326	63.9
	30-50 years	168	32.9
	51-over years	17	3.2
Education	High school	14	2.7
	Bachelors	293	57.9
	Postgraduate	204	39.4
Employment level	Employed	222	43.4
	Unemployed	225	44.0
	Other	64	12.5

(Source: Own Research)

4. FINDINGS

Survey results are tabulated below: the relationship between how consumers use the internet for shopping with its corresponding age and gender. (Table 3)

Table 3: Shows the statistical testing for Age and Gender on how often consumers make use of the internet for shopping. As the computed p value of both variables (Age=0.3424, Gender=0.6358) are greater than the alpha level ($\alpha=0.005$), it can be deduced that the null hypothesis stated above cannot be rejected, giving the risk by 34.24% and 68.58% separately of age and gender to reject the null hypothesis (H₀). Furthermore, the overall age in percentage accompanied by how often consumers are enticed with the usage of internet for shopping daily, Once per week, twice per month and other means stood at (28.57%, 19.57%, 36.97%, 14.87%) respectively evidenced from the statistical analyses. Again, between the ages of (18-29 years) it was proven that 37.42% of the respondents use the internet Twice per month with the ages between 30-50 years using the internet

twice per month, followed by those respondents whose ages are 50 and beyond also making use of Once per week with the percentage of 35.29% ahead of the other dependent variables.

Conversely, it can be seen from the Table (3) above that gender of our respondents had entirely different suggestions by the respondents after testing our results statistically. Females recorded the highest percentage of regularly using the internet for shopping with 43.45%, slightly above the percentage accrued from their male respondents which also stood at 41.39%, with the use of the internet twice per month.

Table 3: Internet Usage for shopping

	Age				Gender	
	Total	18-29 years	30-50 years	51-over years	Male	Female
Daily	28.57	28.53	29.18	23.53	19.26	22.10
Once per week	19.57	17.18	22.62	35.29	29.10	24.34
Twice per month	36.97	37.42	36.90	29.41	41.39	43.45
Other	14.87	16.87	11.31	11.76	10.25	10.11
Critical values of x2	12.5916				7.8147	
Calculated values of x2	6.7723				1.7052	
DF	6				3	
P value	0.3424				0.6358	

(Source: Own Research)

Table 4. Shows the statistical testing for Age and Gender on what consumers use to check the availability of new products. As the computed p value of both variables (Age=0.0016, Gender=0.0065) are lower than the alpha level ($\alpha=0.005$), it can be construed that the null hypothesis can be rejected, giving the risk by 0.16% and 0.65% to reject the null hypothesis (H₀). Besides, the overall age in percentage complemented with what consumers use to check the availability of new product on the market such as the use of online, Printed media, traditional brick and mortar or any other means ranges from (30-50) with 70.24% followed by (18-29), also with the traditional brick and mortar style hooking at 59.86%. Comparatively, apart from the traditional brick and mortar evaluation by our statistical inferences, it can be seen that customers or the respondents are keen or making use of the Online means in checking the availability of new products as already envisaged. Print media and other means by respondent, however recorded least in percentage so far as our statistical evaluation was concerned.

On the contrary, it can be tracked from the table 7 above that gender of our respondents had different proposition so far as checking availability of new products is concerned. Males recorded highest percentage of checking availability of new products with the variables such as Online, Printed media, Traditional or any other means representing 45.90% (Males) slightly above the percentage accrued from their Female respondents which also stood at 45.32%, with both of them using traditional brick and mortar in checking availability of new products in the market. Again, Online followed suit with respect in checking availability of new products with 35.25%, 34.46% for male and female respectively.

Table 4: Channels used for checking availability of new products

	Age				Gender	
	Total	18-29 years	30-50 years	51-over years	Male	Female
Online	20.74	23.39	17.26	23.53	35.25	34.46
Printed Media	14.87	17.79	8.33	23.53	15.98	10.49
Traditional channel (shop)	59.89	55.83	70.24	35.29	45.90	45.32
Other	4.50	3.9	4.17	17.64	2.87	9.74
Critical values of x2	12.5916				7.8147	
Calculated values of x2	21.4066				12.2849	
DF	6				3	
P value	0.0016				0.0065	

(Source: Own Research)

Table 5. Shows the statistical testing for Age and Education on how consumers advocate the use of the internet for shopping. It is evidenced from our statistical analyses that the computed p value of both variables (Age=0.0001, Education=0.1725) recorded different P values implying that there is a diverse interpretation of both variables under study. Age on the other hand, has its p value smaller than the significance level set before the evaluation ($\alpha=0.005$), while education has a higher p value and hence it can be deduced that the null hypothesis cannot be rejected for age while education can be rejected. However, the overall age in percentage accompanied with the support for internet shopping was 49.31% for as against No respondents recording 50.68%. Yet, between the ages of (18-29 years) it was proven that 60.74% of the respondents from our sample are advocating for the use of the online shopping with ages (50-over years) 70.59% of the respondents also not in agreement with the use of internet for shopping. Unfortunately, (30-50 years) also supported the assertion of not making use of the internet for shopping.

Contrariwise, it can be seen from the table 6. Again, though, that above that educational level of our respondents had entirely different suggestions, even inasmuch as our null hypothesis created cannot be rejected. In the percentage calculations from our statistics, it was ascertained that High school, Bachelors, and Postgraduate levels of our respondents all advocated for the use of internet for shopping, recording 57.14%, 71.01, 76.96 respectively. Post graduate level of our respondents with the bachelor levels on the recorded few disagreement with the usage of internet for shopping (27.99%, 23.04%)

Table 5: Consumers Advocate for the use of internet shopping

	Age				Education		
	Total	18-29 years	30-50 years	51-over years	High school	Bachelor	Post Graduate
Yes	49.31	60.74	29.17	29.41	57.14	72.01	76.96
No	50.68	39.26	70.83	70.59	42.86	27.99	23.04
Critical values of x2	5.9915				5.9915		
Calculated values of x2	46.9926				3.5151		
DF	2				2		
P value	0.0001				0.1725		

(Source: Own Research)

4.1 Reasons for not advocating for online shopping

The figure (1) illustrates the main reason why customers are not keen on making use of the internet for online shopping in Ghana. Customers were much concerned about delivery problem, accounting for (55%) of our respondents' response, should they buy from the internet and hence creating fear and panic in them. Another concern was the slow and poor internet connections in Ghana. The third main reason was that most of our respondents were much particular about security and privacy issues when using the internet in shopping, amidst fear and panic to engage in that means compared to walking straight to the market for purchasing. Almost (20%) of the respondent's was of the view about security and private issues and hence preferred the real life shopping experience. Out of our respondents who undertook our survey, only few attributed their fear to the internet cost that might crop up in the gist to purchase online, that is approximately (10%) while the remaining percentage was addressed to a reason best known to respondents, representing a negligible responses attained from the survey. However, in practice this assertion might differ, for individuals having a diverse views with respect to the problem of fears in purchasing through the internet or online.

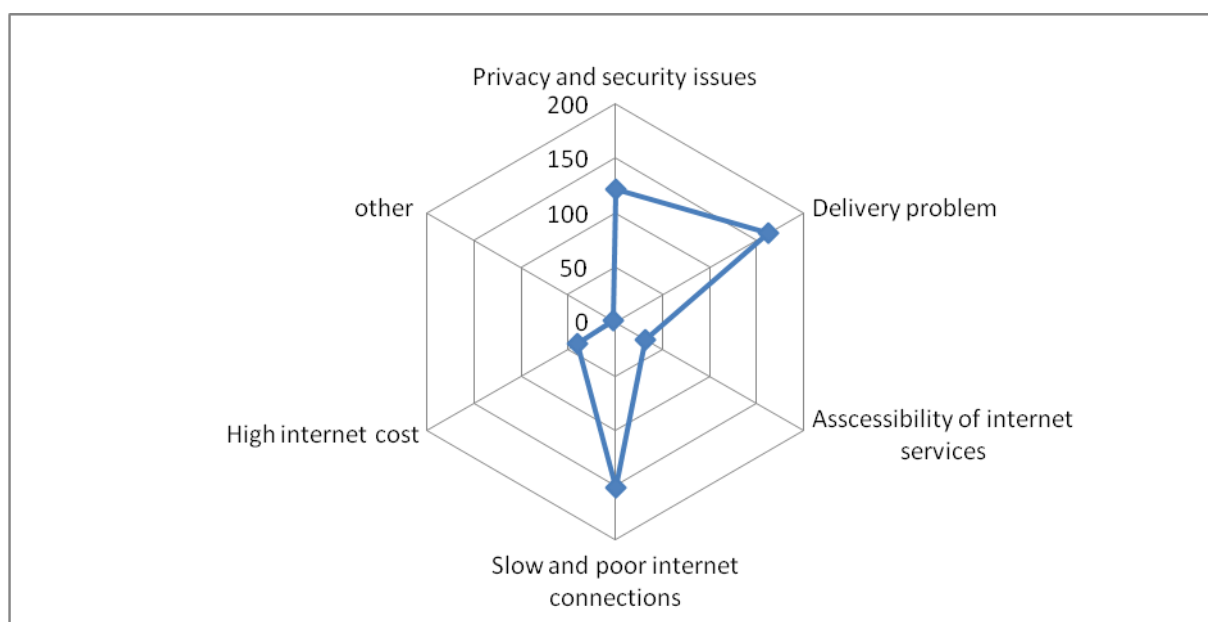


Figure 1: Reasons for not supporting the use of online shopping by respondents in consummate numbers: (Source Own Survey)

4.2 Customer preference for online shopping

Among our respondents who were sampled for our study, more than (50%) preferred using the internet for shopping because of ease and faster access of their required products. In other words, flexibility and convenience attained by them should they shop through online or with the internet. The reasons that most of our respondents quoted for purchasing via the internet centered on the proposition that the internet provides instant services, even at dawn and anytime one feels to make purchase. Infact more than (30%) of our respondents supported the online shopping agenda because of '24/7' connectivity unlike the traditional brick and mortar shopping that has a time span for assessing a product or a commodity. As it can be seen from the figure above, comparison of prices before initiation was one of the main disposition that was addressed through our evaluation and hence a pertinent reason for admiration of our respondents'. Lately, there are different kinds of brands as well as products, of which customers will like to check before making payment for a particular product. This necessitated for the preference of respondents to choose shopping online ahead of any other means. Lastly, respondents were ardent on choosing online shopping because of the availability of checking different kinds of products via the internet within a space of time.

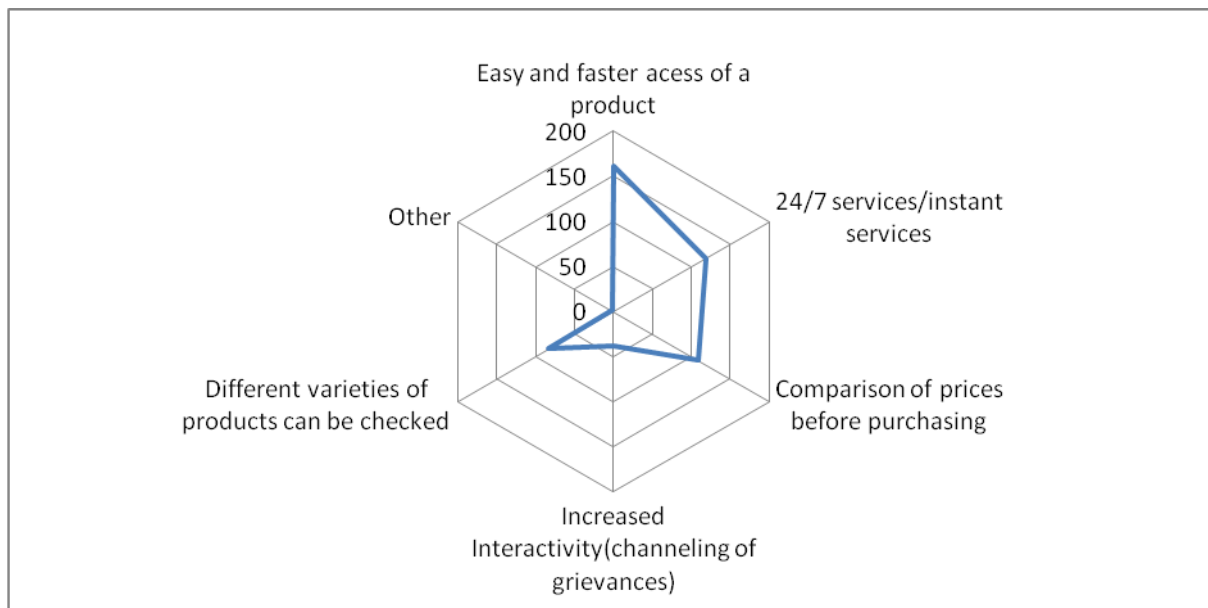


Figure 2: Customer preference for shopping through the internet.(Source Own survey)

5. DISCUSSIONS AND CONCLUSIONS

This study was conducted on the premise of demographic variables in a developing country pertaining to the current disposition of online shopping behavior of customers. In other words, how these demographic attributes negatively or positively affect the inclination of online shopping pattern of customers in a developing country. Three main constructs were focussed on for the study as independent variables, namely age, gender, and education with its corresponding dependent variable. The outcome of this research indicated that customer preference for online shopping in Ghana and for that matter developing economies is relatively lower compared to the conventional brick and mortar style of shopping for customers. The study also went on to analyze some possible reasons that might hinder or influence customer's predilection to embark on online shopping in this era of technological dispensation.

The results of our hypothesis (H1) confirmed that there is no significant association between age and gender on the rate at which customers make use of the internet in shopping. It can be concluded that our hypothesis (H1) were approved. From the onset of our research, it was ascertained that there is no relationship between age and gender on the frequency of how customers make use of the internet, that is whether daily, once per week, twice per month or any other means. However, our final evaluation indicates that indeed there is no association between the variables under study.

In terms of the channels consumers' use in checking the availability of products in the market with its corresponding demographic variables in a the study, our hypothesis (H2) set prior to the study was disapproved. Thus, age and gender play an instrumental role in checking availability of new products, giving the channels under investigations, namely; online. Printed media, traditional and other means. It was disapproved that customers age and gender has a greater association with the aforementioned channels.

On the other hand, there was an entirely different result of our hypothesis (H3) regarding the support and advocacy of the general usage of internet for shopping. Surprisingly, age had a different result attesting to the fact that there is no association connecting the support of internet usage in Ghana. Hence, our hypothesis cannot be rejected signifying that the categories of age have no interrelationship between the support of online shopping. However, education with its investigative

variables such as high school, bachelors or post graduate had a relationship with the support of internet usage for shopping. With this, our hypothesis that there is no relationship between education and the support of internet usage could be rejected hence there was a relationship.

5.1 Recommendations and Future research

This article has provided a vivid quantitative and theoretical overview which could possibly serve as a keynote to marketers in the international and local purview, in an attempt to channel their attention to the developing countries with fully established eCommerce and internet marketing ideologies. Moreover, this study has brought to the fore how demographic variables affect the relationship between online buying behavior of customers and intentions to purchase through online in a developing country.

Notwithstanding the valuable contribution of this study to existing knowledge, marketers should work harder to inform consumers about the convenience and ease to adapt the online buying phenomenon. This is evidenced from our results indicating that in spite of most respondent's been keen on their conventional way of shopping, yet most of the responses indicated their desire for online shopping. Therefore is feasible for marketers who are bent on entering the developing fold and for that matter the African continent and to be precise Ghana to create the awareness of online shopping. It is unarguably clear that any successful business is centered on the outcome of having a deeper understanding of consumer behaviour of its customers, that is, which factors influences their purchasing behaviour, including demographics. In the light of this, an indepth revelation of customers in a developing country notably Ghana can assist marketers who are bent on entering the market to be able to position themselves interms of segmentation of customers, creating effective customer relationships, enriching competitive positioning of the business, designing affable websites to attract the needed customers.

Again, in spite of the valuable contributions to academia and industry in general regarding the findings of online buying behavior in a developing country, the author is quick to point out one of the major limitations of the current study. The key limitation of the study is that the construct (demographics) for analyzing the propensity for online shopping with its limited study in particular the sub Saharan regions of Africa, in the developing country cannot be described as overly exhaustive, given the limited coverage of existing literature in the sphere of study.

On a final note, the next step in this particular study will be to consider an additional demographic variance using different algorithms in the evaluation coupled with a large sample size. On this note, the author recommends that interested scholars should channel their attention to the magnitude of online buying phenomenon in a developing country, specifically the African sub regions. Given the background that the internet has become part of us and is no longer leaving sooner or later.

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REFERENCES

- Addinsoft (2014). XLSTAT 2014, Data analysis and statistics with Microsoft Excel, Paris, France
- Akhter, S.H., 2012. Who spends more online? The influence of time, usage variety, and privacy concern on online spending. *Journal of Retailing and Consumer Services*, 19(1), pp.109-115.
- Alturkestani, H. (2004). E-marketing application on Saudi business sector. E-commerce Symposium, 1, King Khaled University, Abha, Kingdom of Saudi Arabia, 257-265
- Beldona, S., Racherla, P. and Mundhra, G.D., 2011. To buy or not to buy: Indian consumers' choice of online versus offline channels for air travel purchase. *Journal of Hospitality Marketing & Management*, 20(8), pp.831-854.
- Bouzaabia, O., Bouzaabia, R. and Capatina, A., 2016. Determinants of Internet Use by Senior Generation: A Cross Cultural Study. *International Journal of Technology and Human Interaction (IJTHI)*, 12(1), pp.63-82.
- Brashear, T.G., Kashyap, V., Musante, M.D. and Donthu, N., 2009. A profile of the Internet shopper: Evidence from six countries. *Journal of Marketing Theory and Practice*, 17(3), pp.267-282.
- Burke, R.R., 2002. Technology and the customer interface: what consumers want in the physical and virtual store. *Journal of the academy of Marketing Science*, 30(4), pp.411-432.
- Chakraborty, R., Lee, J., Bagchi-Sen, S., Upadhyaya, S. and Rao, H.R., 2016. Online shopping intention in the context of data breach in online retail stores: An examination of older and younger adults. *Decision Support Systems*.
- Chakraborty, R., Lee, J., Bagchi-Sen, S., Upadhyaya, S. and Rao, H.R., 2016. Online shopping intention in the context of data breach in online retail stores: An examination of older and younger adults. *Decision Support Systems*.
com/news/Online Shopping.shtml
- Desai, K., Chewning, B. and Mott, D., 2015. Health care use amongst online buyers of medications and vitamins. *Research in Social and Administrative Pharmacy*, 11(6), pp.844-858.
- Domina, T., Lee, S.E. and MacGillivray, M., 2012. Understanding factors affecting consumer intention to shop in a virtual world. *Journal of retailing and consumer services*, 19(6), pp.613-620.
- Donthu, N. and Garcia, A., 1999. The internet shopper. *Journal of advertising research*, 39(3), pp.52-52.
- Doolin, B., Dillons, S., Thompson, F. and Corner, J.L., 2007. Perceived risk, the Internet shopping experience and online purchasing behavior: A New Zealand perspective. *Electronic commerce: Concepts, methodologies, tools, and applications*, pp.324-345.
- Fang, X. and Yen, D.C., 2006. Demographics and behavior of Internet users in China. *Technology in Society*, 28(3), pp.363-387.
- Garbarino, E. and Strahilevitz, M., 2004. Gender differences in the perceived risk of buying online and the effects of receiving a site recommendation. *Journal of Business Research*, 57(7), pp.768-775.

- Hansen, T., 2005. Understanding consumer online grocery behavior: Results from a Swedish study. *Journal of Euromarketing*, 14(3), pp.31-58.
- Hart, M., 2008, October. Do online buying behaviour and attitudes to web personalization vary by age group?. In *Proceedings of the 2008 annual research conference of the South African Institute of Computer Scientists and Information Technologists on IT research in developing countries: riding the wave of technology* (pp. 86-93). ACM.
- Hou, J. and Elliott, K., 2014. How do online bidders differ from non-bidders?. *Journal of Retailing and Consumer Services*, 21(1), pp.18-25.
- Internet Shoppers up 40% in Two Years*. Retrieved September 15, 2012 from <http://nz.nielsen>.
- Kumar, A. and Dash, M.K., 2015. Effectiveness of electronic service dimensions on consumers' electronic buying behaviour and exploration of different groups. *International Journal of Business Innovation and Research*, 9(1), pp.81-99.
- Li, N. and Zhang, P., 2002. Consumer online shopping attitudes and behavior: An assessment of research. *AMCIS 2002 Proceedings*, p.74.
- Li, X., 2007. Agent-based consumer learning in e-commerce. *International journal of networking and virtual organisations*, 4(1), pp.65-75.
- Lian, J.W. and Lin, T.M., 2008. Effects of consumer characteristics on their acceptance of online shopping: Comparisons among different product types. *Computers in Human Behavior*, 24(1), pp.48-65.
- Lian, J.W. and Yen, D.C., 2014. Online shopping drivers and barriers for older adults: Age and gender differences. *Computers in Human Behavior*, 37, pp.133-143.
- Liu, H., Sadygov, R.G. and Yates, J.R., 2004. A model for random sampling and estimation of relative protein abundance in shotgun proteomics. *Analytical chemistry*, 76(14), pp.4193-4201.
- Maceviciute, E., 2007. Review of: Pickard, Alison Jane. *Research methods in information London: Facet Publishing*, 2007.
- Mohd Suki, N., Ramayah, T. and Mohd Suki, N., 2008. Internet shopping acceptance: Examining the influence of intrinsic versus extrinsic motivations. *Direct Marketing: An International Journal*, 2(2), pp.97-110.
- Nabareseh, S., Osakwe, C.N., Klímek, P. and Chovancová, M., 2014. A comparative study of consumers' readiness for internet shopping in two African emerging economies: Some preliminary findings. *Mediterranean Journal of Social Sciences*.
- Niu, H.J. and Chang, C.T., 2014. Addiction in cyberspace: flow experience on e-shopping. *International Journal of Web Based Communities*, 10(1), pp.52-68.
- Panzone, L., Hilton, D., Sale, L. and Cohen, D., 2016. Socio-demographics, implicit attitudes, explicit attitudes, and sustainable consumption in supermarket shopping. *Journal of Economic Psychology*.
- Quarshie, H.O. and Ami-Narh, J., 2012. The growth and usage of Internet in Ghana. *Journal of Emerging Trends in Computing and Information Sciences*, 3(9), pp.1302-1308.

- Quelch, J.A. and Klein, L.R., 1996. The Internet and international marketing. *MIT Sloan Management Review*, 37(3), p.60.
- Richard, M.O., Chebat, J.C., Yang, Z. and Putrevu, S., 2010. A proposed model of online consumer behavior: Assessing the role of gender. *Journal of Business Research*, 63(9), pp.926-934.
- Rigas, D. and Riaz, N., 2015. E-Commerce Purchase Intention in Emerging Markets: The Influence of Gender and Culture. In *Cross-Cultural Design Applications in Mobile Interaction, Education, Health, Transport and Cultural Heritage* (pp. 90-100). Springer International Publishing.
- Román, S. and Riquelme, I.P., 2014. Personal Determinants Of Online Shopping Frustration And Its Influence On Consumers'positive Word Of Mouth. *Journal of Electronic Commerce Research*, 15(2), p.87.
- Rose, S. and Dhandayudham, A., 2014. Towards an understanding of Internet-based problem shopping behaviour: The concept of online shopping addiction and its proposed predictors. *Journal of behavioral addictions*, 3(2), pp.83-89.
- Sakalauskas, D.P. and Ibeh, K.I., 2005. Internet marketing and the realty sector: some cross-national insights from Canada and the UK. *Journal of Euromarketing*, 14(4), pp.53-76.
- Saleh, M.A.H., Assessing the Consumers' Propensity for Online Shopping: A Demographic Perspective.
- San Martín, S. and Jiménez, N.H., 2011. Online buying perceptions in Spain: can gender make a difference?. *Electronic Markets*, 21(4), pp.267-281.
- Sharma, S. and Sitlani, M., 2013. Online Shopping Among Higher Education Students In Indore: A Factor Analysis Approach. *Indian Journal of Marketing*, 43(1), pp.44-53.
- Shim, S. and Mahoney, M.Y., 1991. Electronic shoppers and nonshoppers among videotex users: Shopping orientations, videotex usages, and demographics. *Journal of Direct Marketing*, 5(3), pp.29-38.
- Shuyang, C., Meng, S. and Haotong, L., 2014, October. The comparative study between China and South Korea on online shopping. In *Management of e-Commerce and e-Government (ICMeCG), 2014 International Conference on* (pp. 16-19). IEEE.
- Soopramanien, D.G. and Robertson, A., 2007. Adoption and usage of online shopping: An empirical analysis of the characteristics of "buyers""browsers" and "non-internet shoppers". *Journal of Retailing and Consumer Services*, 14(1), pp.73-82.
- Swinyard, W.R. and Smith, S.M., 2003. Why people (don't) shop online: A lifestyle study of the internet consumer. *Psychology & marketing*, 20(7), pp.567-597.
- The Nielsen Company. (2015) *Over 875 Million Consumers have Shopped Online - the Number of*
- Village, S.K., No, P. and Park, R.G.I., 2015. A Study on user perception and awareness Related to online privacy during online Shopping. *Journal of Theoretical and Applied Information Technology*, 77(3).

Xue-wu, S., Gui-hua, N. and Ling, S., 2006. Gender-based differences in the effect of web advertising in e-business. In *2006 International Conference on Management Science and Engineering*.

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THE MOST IMPORTANT ATTRIBUTES OF ENTREPRENEURS. CASE STUDY OF THE ENVIRONMENT OF CZECH SMES.

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ABSTRACT

The aim of this paper was to define and quantify the most important attributes of entrepreneurs in the segment of small and medium-sized enterprises. The partial objective was to compare the opinions of the entrepreneurs in relation to their gender, age and level of education. Scientific questions, defined in this paper, were verified through empirical research conducted in the Czech Republic in 2015 on a sample of 1,141 entrepreneurs. In our research, we found that entrepreneurs consider expertise, responsibility and perseverance to be the most important personal characteristics and skills. Propensity to risk and decisiveness are ranked right after them. The same group of three most important attributes is presented by all defined groups of entrepreneurs, which means that the assessment of the importance of these attributes remains the same regardless of gender, age and level of education of the entrepreneur. It is interesting that the weight of the expertise increases with the age of the entrepreneur. This trend is caused by the fact that men significantly more intensively presented this opinion. When evaluating the attitudes of entrepreneurs to other characteristics and skills no significant differences in relation to gender, age and education were identified.

KEYWORDS

entrepreneur, small and medium-sized enterprises, personality traits and skills

JEL

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INTRODUCTION

The research of the business environment of small and medium-sized enterprises (SMEs) is very current in economic theory, and is focused on different attributes of the activities of these companies, which constitute an important part of the economic system of each country.

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While evaluating the significance of SMEs to the economic system the opinion about their exceptional status to tackling unemployment, their substantial benefit to the diversity of the market offers and to the development of innovation activities prevails (Fetisovová et al., 2012, Synek et al., 2006).

Economists and politicians pay particular attention to the adjustment of external business conditions, to the creation of business environment and laws governing business activities. *"Almost no, or just a very small attention is payed to the fact that the implementer of entrepreneurship is a man, who has his own ideas, desires, motives, and attitudes, which lead him to doing business, to found a company, to become a self-employer"* (Flešková, Babiaková, Nedelová, 2011).

In this context, we consider to be necessary to examine the views and attitudes of entrepreneurs in the SME segment. The contribution of this paper consists in the definition of the most important personal characteristics (attributes) and skills of entrepreneurs, quantification and comparison of these attitudes in terms of gender, age and the level of education of entrepreneurs. The acquired knowledge can help to optimize the parameters of the educational system, resp. to form the new economic policy approaches to this segment.

1. THEORETICAL BACKGROUND

The business environment is determined by personality characteristics and motives of individual entrepreneurs. Business situations are often unique in their unpredictability, complexity and changing requirements during the business process. Entrepreneurs must be capable to have the features of several personalities at once and as one person to demonstrate the ability to act as investors, inventors, accountants, dispute investigators, leaders, technologists, marketing specialists and top sellers. For this reason, the more knowledge and skills the entrepreneur is capable to demonstrate the better (Frese, Gielnik, 2014).

According to Deáková, Drážovská, Grznárik and Kondášová (2010) the most important personal qualities for an entrepreneur are: courage, self-reliance, responsibility, determination, perseverance, proactive approach, creativity and scholarship in a particular area, where this entrepreneur intends to do business.

Kvietok (2013) states, that decision to take on the business risk is symptomatic of a certain type of people. A significant part of the motivation to take risks in business follows from the success motivation. To achieve the set goals, successful people are willing to take on reasonable risks associated with feedback about the level of achieved results. Entrepreneurs are sort of being managed with an inner feeling, which means that they feel that their personal fate is the result of their own efforts. They are independent, autonomous, and rely on themselves, what are the characteristics of entrepreneurial personalities.

According to Beugelsdijk and Noorderhaven (2005), entrepreneurs differ from the general population and from paid employees in a lot of characteristics. They are more individually oriented; they have a greater individual responsibility and effort. In this context Omerzel and Kušce (2013) indicate that the inclination to take risks, self-efficacy and the need for independence are the most important factors affecting personal performance of the businessman. Individuals who demonstrate increased risk aversion are more likely to become entrepreneurs (Hvide, Panos, 2014).

According to Honjo (2015) individual who believe that they have knowledge, skills and experience in the field of business management, are more willing to become an entrepreneur in their

professional life. Moreover, opportunity seeking behaviour is found to positively affect the entrepreneurship process and entrepreneurship choice. Individual age is not found to be a significant predictor of entrepreneurship choice and thus it shows the irrelevancy of individual age to business start-ups. Moreover, positive effect of risk taking ability to the process of entrepreneurship was found. When someone is not afraid of risk taking, he/she can and is willing to invest in entrepreneurship projects.

Innovation is significantly affected by the business experience and a positive tendency of innovation can help the person to become an entrepreneur (Plotnikova, Romero, Martinez-Roman, 2016).

People with masculine values are competitive, aggressive and motivated to gain wealth through business development. On the other hand, people having such feminine attributes as cooperation, adaptability, aware of others, flexibility etc. are also required to have a successful business operation by maintaining harmonization in the workplace (Goktan, Gupta, 2015).

According to Kautonen, Down, and Minniti (2014) people are interested to have their own business especially until the age of 40. On the other hand, older individuals would like to enjoy more free time with their families and as a result they do not want to engage in any other business activities.

2. OBJECTIVES, METHODOLOGY AND DATA

The aim of this paper was to define and quantify the most important attributes of entrepreneurs in the segment of small and medium-sized enterprises. The partial objective was to compare the opinions of the entrepreneurs in relation to their gender, age and level of education.

In this paper we define these scientific questions:

SQ1: What are the most important personal predispositions and skills for doing business?

SQ 2: Is a willingness to take risks the most important prerequisite for doing business.

SQ 3: Are there any significant differences in the attitudes of entrepreneurs in relation to their gender, and the level of education exist?

Statistically significant differences between the designated groups of entrepreneurs were compared through Pearson statistics at significance level of 5%. If the calculated p-value was lower than 5%, we rejected the null hypothesis and the alternative hypothesis was adopted. The calculations were made through the free software available at:

<http://www.socscistatistics.com/tests/ztest/Default2.aspx>.

The survey of the quality of the business environment was carried out in the first half of 2015 through a questionnaire on a sample of 1,141 respondents in the Czech Republic. The method of choosing companies was as follows. We randomly selected a total of 1650 companies from the Albertina database. These companies were contacted via email, where the business owners were asked to complete a questionnaire, which was placed on the website: https://docs.google.com/forms/d/1U9coaC5JRL0N2QOOO6Xb8j3mnaZXdSM47Kugt4EDGFo/vie_wform?usp=send_form. If these companies had not responded to our mail, we addressed them by telephone.

The structure of the respondents was as follows: 75% men, 25% women; 48% of respondents reported that they have secondary education, 34% had the university degree and 18% reported that they have secondary education without graduation; 65% of the total number of companies are

microenterprises, 27% are small enterprises and 8% are medium-sized enterprises. 62% of companies' owners stated that the company exists for more than 10 years, 21% of them stated that they operate a maximum of five years and 17% of them reported that the company belongs to an interval of five to ten years of existence.

Respondents were representing the following sectors: trade (33%), manufacturing (23%), construction (14%), transport (6%), agriculture (3%), and other services (39%).

3. THE RESULTS AND A BRIEF DISCUSSION

Table 1 presents the results of the evaluation of the most important personal characteristics (attributes) and skills by the Czech entrepreneurs in the SME category.

Tab. 1: The most important attributes of entrepreneurs

Attributes and skills of entrepreneurs.	Men 861	Women 280	HE 392	OE 749	35- 279	36-45 320	45+ 542
1. Don't be afraid of a risk: 46,36%	408 *47,39	121 43,21	186 47,45	343 45,79	149 53,41	148 46,25	232 42,80
2. Expertise: 54,25%	456 *52,78	163 58,21	220 56,12	399 53,27	128 45,88	164 51,25	327 60,33
3. Perseverance: 51,10%	448 *52,03	135 48,21	197 50,26	386 51,51	166 59,50	158 49,38	259 47,79
4. Responsibility: 52,94%	449 *52,15	155 55,36	201 51,28	403 53,81	136 48,75	172 53,75	296 54,61
5. Decisiveness: 39,18%	343 *39,84	104 37,14	164 41,84	283 37,78	113 40,50	133 41,56	201 37,08
6. Other	654	220	305	569	240	239	395
Total number of answers:	2.758	898	1.273	2.383	932	1.014	1.710
Z-score:							
p-value 1.	0,3271		0,8572		0,3953	0,0910	0,4533
p-value 2.	0,2627		0,6818		0,1310	0,0004	0,0524
p-value 3.	0,3898		0,5687		0,1868	0,0751	0,7566
p-value 4.	0,4902		0,3843		0,1527	0,0719	0,8181
p-value 5.	0,4965		0,3735		0,5093	0,7795	0,2937

Note: entrepreneurs could mark more possibilities; the minimum was 3 possibilities. HE – higher education, OE – other type of education, 35 – entrepreneurs under 35 years old, 35-46 – entrepreneurs in between 35 and 45 years old, 45+ – entrepreneurs older than 45 years. * - the value is in %.

In our research, we found that entrepreneurs consider expertise (54.25%), responsibility (52,94%) and perseverance (51.10%) to be the most important personal characteristics and skills. Propensity to risk (46.36%) and decisiveness (39.18%) are ranked right after them. The same group of three most important attributes is presented by all defined groups of entrepreneurs, except for the case of the youngest entrepreneurs, who reported propensity to risk as the second most important factor. No significant differences were identified within the defined groups of entrepreneurs. The only interesting fact is that the significance of the expertise of entrepreneurs increases with the age (p-value = 0.004).

Tab. 2: The most important attributes according to male entrepreneurs

<i>Attributes and skills of entrepreneurs.</i>	Men HE 284	Men OE 577	Men 35- 193	Men 36-45 233	Men 45+ 435
1. Don't be afraid of a risk	132	276	113	105	190
2. Expertise	158	298	85 *44,04	114 48,93	257 59,08
3. Perseverance	146	302	122	118	208
4. Responsibility	145	304	97	118	234
5. Decisiveness	121	222	82	95	166
6. Other	225	429	164	175	315
Total number of answers:	927	1.831	663	725	1.370
<i>Z-score:</i>					
p-value 1.	0,5619		0,1902	0,0601	0,7039
p-value 2.	0,6101		0,1236	0,0008	0,0836
p-value 3.	0,6171		0,2937	0,0643	0,5093
p-value 4.	0,5157		0,3952	0,1615	0,6384
p-value 5.	0,4839		0,6818	0,8729	0,5157

We did not find any significant differences in the evaluation of the most important characteristics (attributes) and skills of entrepreneurs in relation to the level of education and the age in the group of male entrepreneurs. The only exception is the finding that the weight of expertise increases with the age of entrepreneur (p-value = 0.0008, means that there are statistically significant differences between the youngest and oldest entrepreneurs in the assessment of this factor).

Tab. 3: The most important attributes according to female entrepreneurs

<i>Attributes and skills of entrepreneurs.</i>	Women HE 108	Women OE 172	Women 35- 86	Women 36-45 87	Women 45+ 107
1. Don't be afraid of a risk	55	67	37	43	42
2. Expertise	62	101	43	50	70
3. Perseverance	51	84	44	40	51
4. Responsibility	56	99	39	54	62
5. Decisiveness	43	61	31	38	35
6. Other	80	140	76	64	80
Total number of answers:	347	552	270	289	340
<i>Z-score:</i>					
p-value 1.	0,1141		0,6892	0,6241	0,3576
p-value 2.	0,8729		0,6599	0,1416	0,2937
p-value 3.	0,8337		0,4179	0,6599	0,6818
p-value 4.	0,4902		0,1770	0,2113	0,8887
p-value 5.	0,5419		0,5485	0,6384	0,2670

We did not find any significant differences in the evaluation of the most important characteristics (attributes) and skills of entrepreneurs in relation to the level of education and the age in the group of female entrepreneurs.

Tab. 4: The most important qualities - a comparison between men and women according to the level of education and age.

<i>Attributes and skills of entrepreneurs.</i>	Men/Women HE 284/108	Men/Women OE 577/172	Men/Women 35- 193/86	Men/Women 36-45 233/87	Men/Women 45+ 435/107
1. Don't be afraid of a risk	132/55	276/67	113/37	105/43	190/42
2. Expertise	158/62	298/101	85/43	114/50	257/70
3. Perseverance	146/51	302/84	122/44	118/40	208/51
4. Responsibility	145/56	304/99	97/39	118/54	234/62
5. Decisiveness	121/43	222/61	82/31	95/38	166/35
6. Other	225/80	429/140	164/76	175/64	315/80
Total number of answers:	927/347	1.831/552	663/270	725/289	1.370/340
<i>Z-score:</i>					
p-value 1.	0,4715	0,0854	0,2077	0,8729	0,4654
p-value 2.	0,7263	0,2627	0,2113	0,5353	0,4413
p-value 3.	0,6455	0,4777	0,4473	0,3320	0,9362
p-value 4.	0,8259	0,4654	0,9442	0,3576	0,6171
p-value 5.	0,7566	0,4965	0,7039	0,9840	0,3524

When comparing the views of men and women within the defined categories (level of education and the age of entrepreneurs) no statistically significant differences in the assessment of personal characteristics (attributes) and skills of entrepreneurs were identified.

SQ1 was answered. Our research defined the most important personal characteristics (attributes) and skills of entrepreneurs.

The answer on SQ2 was negative. We found that the willingness to take risks is not the most important characteristic of the entrepreneur.

The answer on SQ3 was negative.

The results of our research are mostly compatible with the results of Frese, Gielnik (2014), Deáková, Drážovská, Grznárik and Kondášová (2010), Honjo (2015). On the other hand, our results refute the statements of Kvietok (2013), Omerzel and Kušce (2013) who featured the vital importance of willingness to take risks.

In the context of the assessment of the characteristics of entrepreneurs Srpová and Řehoř (2010) define the false myths about the entrepreneurship. "Many people never become an entrepreneur because they fear the prejudices, that one must be born an entrepreneur. They believe that one cannot learn to do business, and that most of the new companies will go bankrupt anyway. Others, by contrast, throw themselves into the business with a vision to finally be their own man". The authors refute these myths and define two elementary conditions for doing business – entrepreneurial spirit and success.

Doing business is a long-term, arduous and complicated process, which is accompanied by many obstacles, and therefore requires appropriate preconditions and personal attributes. Entrepreneur

must be resistant against uncertainty through a high level of self-motivation, free decision making and initiative to overcome the fear and apprehension of the future (Ilouga, Mouloungni, Sahut, 2014). Emotional stability and internal self-control which help to trust in their decisions (Caliendo, Fossen, Kritikos, 2014), the need for success, self-sufficiency and extroversion (Lee and Tsang, 2002) are the important characteristics of the entrepreneurs.

CONCLUSION

The aim of this paper was to define and quantify the most important attributes of entrepreneurs in the segment of small and medium-sized enterprises, and to compare the opinions of the entrepreneurs in relation to their gender, age and level of education.

In our research, we found that entrepreneurs consider expertise, responsibility and perseverance to be the most important personal characteristics and skills. Propensity to risk and decisiveness are ranked right after them. The same group of three most important attributes is presented by all defined groups of entrepreneurs, which means that the assessment of the importance of these attributes remains the same regardless of gender, age and level of education of the entrepreneur.

It is interesting that the weight of the expertise increases with the age of the entrepreneur. This trend is caused by the fact that men significantly more intensively presented this opinion. When evaluating the attitudes of entrepreneurs to other characteristics and skills no significant differences in relation to gender, age and education were identified.

The results of our research, where among others outcomes showed that the willingness to take the risk is not the most important attribute of an entrepreneur, can enrich economic theory and help to tune the approach of the state, universities or other institutions to education and the needs of entrepreneurs.

LITERATURE

1. Beugelsdijk, S., Noorderhaven, N. (2005). Personality characteristics of self-employed; An empirical study. *Small Business Economics* 24(2), 159-167. DOI 10.1007/s11187-003-3806-3
2. Caliendo, M., Fossen, F., Kritikos, A. S. (2014). Personality characteristics and the decisions to become and stay self-employed. *Small Bus Econ* 42, 787 – 814.
3. Deáková, K., Drážovská, K., Grznárik, D., Kondášová, I. (2010). *Entrepreneurship*. Bratislava: SOPK.
4. Fetisovová, E. akol. (2012). *Aktuálne problem financií malých a stredných podnikov*. Bratislava: Ekonóm.
5. Flešková, M., Babiaková, B., Nedelová, G. (2011). Preferencie vysokoškolských študentov v profesionálnom živote a ich predstavy o vlastnom podnikaní. *E+M Ekonomie a management*, 1/2011, 97-111.
6. Frese, M., Gielnik, M. M. (2014). The Psychology of Entrepreneurship. *Annual Review of Organizational Psychology and Organizational Behavior*, Vol. 1, pp. 413-438. DOI 10.1146/annurev-orgpsych-031413-091326
7. Goktan, A. B., Gupta, V. K. (2015). Sex, gender, and individual entrepreneurial orientation: evidence from four countries. *International Entrepreneurship and management Journal*, Vol. 11, pp. 95-112.
8. Honjo, Y. (2015). Why are entrepreneurship levels so low in Japan? *Japan and the World Economy*, 36, 88-101.
9. Hvide, H. K., Panos, G. A. (2014). Risk tolerance and entrepreneurship. *Journal of Financial Economics*, 111: 200 – 223.

10. Ilouga, S. N., Mouloungni, A. C. N., Sahut, J. M. (2014). Entrepreneurial intention and career choices: the role of volition. *Small Bus Econ*, 42: 717 – 728.
11. Kautonen, T., Down, S. and Minniti, M. (2014). Ageing and entrepreneurial preferences, *Small Business Economics*, Vol. 42, pp. 579-594.
12. Kvietok, A. (2013). *Psychological profile of the entrepreneur*. Retrieved March 24, 2014, from <http://www.psyx.cz/texty/psychologickeprofilpodnikatele.php>
13. Lee, D. Y., Tsang, E. W. K. (2002). The effects of entrepreneurial personality, background and network activities on venture growth. *Journal of Management Studies* 38(4), 583 – 602.
14. Omerzel, G. D., Kušce, I. (2013). The influence of personal and environmental factors on entrepreneurs' performance. *Kybernetes* 42(6), 906-927. <http://dx.doi.org/10.1108/K-08-2012-0024>
15. Plotnikova, M., Romero, I., Martinez-Roman, J. A. (2016). Process innovation in small business: the self-employed as entrepreneurs. *Small Business Economics*, 23 May, pp. 1-16. DOI 10.1007/s11187-016-9743-8
16. Srpová, J., Řehoř, v. a kol. (2010). *Základy podnikání*. Praha: Grada.
17. Synek, M. a kol. (2006). *Podniková ekonomika*. Praha: C. H. Beck.

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THE COMPARISON OF COMPETITIVE BALANCE BETWEEN SUPER RUGBY (SANZAR) AND ENGLISH PREMIERSHIP RUGBY: A CASE STUDY FROM 1996-2014 SEASON OR NOT ATTRACTIVE – NO PEOPLE – NO MONEY

Robert KUCHAR¹ and Andy MARTIN²

ABSTRACT

Most sports are attractive because they are almost unpredictable. The more the competitiveness of league teams, the harder to predict the games and as a result, that league will be more attractive. Message is: more attractive leagues= bigger audience= more attractive for sponsorship= more money in sport. Competitive balance (CB) refers to the balance in sport capabilities of teams. The aim of this paper was to compare the competitive balance between Super Rugby league named SANZAR, which consist of three nations (New Zealand, Australia and South Africa) and English Premiership Rugby League in 1996-2014 seasons and compare them. The data were secondary and collected from the final tables.

It was used five models in this study: the three-club and five-club concentration ratio (C3 and C5) and C3/C5 index of competitive balance (C3ICB/C5ICB) were used to analyse the data. The less the index C3ICB/C5ICB and C3/C5 are, the more competitive balance is, and conversely. Standard deviation of game results, the ratio of actual and ideal standard deviation wins, numbers of winners and a placement in the k-th place.

The results showed that the Salary cap in Premiership League does not work very effectively and the competitive balance is in last few seasons still worst and worst. Super Rugby has mirror position to Premiership. Last few years are the competitive balance on the right track. Comparison result is for Super Rugby strategy with involving more teams to the league.

KEY WORDS

Competitive Balance, Sanzar, Super Rugby, Premiership Rugby, Salary Cap

INTRODUCTION

In 1996 as SANZAR was formed, the Super 12 was created, a professional competition and the first official 'international domestic' tournament featuring the strongest teams – which would become franchises – across New Zealand, South Africa and Australia. Five franchises were created in New Zealand, merging the 26 domestic unions. The Kiwi sides are representative of their 'catchment areas' (the collection of unions that make up the franchise). The three Australian teams were the traditional rugby states of New South Wales and Queensland and a new team from the ACT called the Brumbies. For the first three years of the competition, South Africa determined its sides via qualification in the Currie Cup, with the four semi-finalists from the previous season taking part,

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before they loosely followed the Kiwi model and created franchises from combined Currie Cup unions. In 2006 Super 14 came into fruition, with the Western Force and Cheetahs joining the fold, naturally extending the round-robin regular season competition, while the Super Rugby Final's Series format of the top four playing semi-finals continued. Effective in 2011, Super Rugby expanded to 15 teams – with the Melbourne Rebels the new franchise - and split into three conferences, each with five teams and based in one of the three nations. At the same time, the regular season expands to 16 matches (8 homes, 8 away). Each team will play a double round-robin within its home conference, and play single matches against four teams from each of the other conferences.³

The world's most competitive domestic rugby union competition is now Aviva Premiership Rugby.

The top flight league has evolved over time since beginning in 1987 when the Courage Leagues were formed - a league pyramid that had more than 1,000 clubs playing in 108 leagues - each with promotion and relegation. Previous to this, only friendlies were played and a regional cup competition existed. The official sponsors of the league had been changed couple time in the history. By the end of the 1990s the Premiership had become the Zurich Premiership and had developed into the most competitive club competition in the world. Over the years the format of the league developed and evolved, with the play-offs and a wildcard introduced. Aviva Premiership Rugby consists of 22 rounds with round 22 taking place on Saturday 16th May 2015. The club that tops the Aviva Premiership Rugby table after round 22 will automatically qualify for home advantage in the Aviva Premiership Rugby semi-final against the club that finishes fourth. The club that finishes second will qualify for home advantage in the other Aviva Premiership Rugby semi-final against the club that finishes third. The two Aviva Premiership Rugby semi-final matches take place over the weekend of 22nd/23rd/24th May 2015 and the winning clubs went forward to the prestigious Aviva Premiership Rugby Final at Twickenham on Saturday 30th May 2015. The club that wins the Aviva Premiership Rugby Final is being Aviva Premiership Rugby Champions.⁴

The advantages of professionalism in sport are very common – to start providing money for making sport was a stimulus for players and teams to maximize their success and to give athletes the best resources to perform at the very best of their ability. However, professionalism can increase the display, the impact of money, it can also undermine the competitiveness of competitions. Several studies have shown that professional sports are under a huge weight by what Neale (1964) termed the 'peculiar economics of sport'. In particular, the problem of money torments the industry, to the point that it has become an appropriate factor. Clearly money and the wealth of people plays have an increasingly important role in sport. In the context of professional rugby, the wealthy have the ability to purchase international rugby clubs and to have the luxury of being able to afford the top international players. In competitions where there is instability of wealth across teams, money has the effect of reducing the distribution of player talent and effectively creating uneven teams (McMillan, 1997). Result is that, sporting competitions need some limitations on economic competition to create competitive balance as well as to incite sustainability.

The question of how the estimated demand for sporting events is influenced by the probability of the teams wins, sport economists have addressed from the outset of this scientific discipline. In the 50s and 60s of the 20th century came to the view that heavy dominance is killing interest and reduced demand. As an outcome was that, consumers demand uncertainty and the result of increasing demand uncertainty increases. This theory became the basis for many of the recommendations in this field.

³ Official web side of SANZAR Rugby: (<http://www.sanzarrugby.com/superrugby/about-super-rugby/>)

⁴ Official web side of Premiership Rugby: (www.premiershiprugby.com/history/)

Competitive balance relates to the balance in sport and among sport teams (Michie et al., 2004). The uncertainty in sports results is analyzed through various methods; however Szymanski (2003) differentiates among three kinds of uncertainty:

- a) Match uncertainty that relates to uncertainty about a result of a particular game (between two teams)
- b) Season uncertainty that relates to uncertainty about results in the course of a season
- c) Championship uncertainty that relates to dominance of limited number of teams in a league or several consecutive seasons

However, every attempt to attract attention and audience through competitive balance can be seen as inappropriate from a special team's or fans' point of view, especially if the suspect that the probability of winning is high (Jennet, 1984). If the result of the game is predictable, the people will be more worried than if the game starts soon (Jennet, 1984). That is why the league management should provide appropriate reasons to increase competitive balance (Konig, 2000). It is obvious that the competitions need a certain level of competitive balance to survive and to increase quality. Without competitive balance, the games are easily predictable and as a result they lose attractiveness. The lack of competitive balance means that the number of viewers (both at the stadium and in front of a TV) is not at its maximum (Michie et al., 2004). Quirk and Fort (1992) claim that one of the reasons why people love teams sports is excitement resulting from uncertainty of results of league competitions.

To attract fan's attention, all strengths and weaknesses should be assessed so that the uncertainty of results is possible (Quirk et al., 1992). Competitive balance is important due to the fact that provided all the factors are considered the same, the uncertainty of the game result will attract people's attention and their interest to watch matches (on TV or at the stadium). If the league is not balanced, it is very hard to gain earnings from tickets or selling TV rights. The same applies to the relations with sponsor; if the league is not appealing to viewers, it is not attractive for sponsors either. That is the reason why it is very important to increase and keep competitive balance so that the demand after sports clubs, matches, league and sports product overall is maximized. That is the main reason why different sports (leagues) adopted regulation measures to redistribute revenues in order to influence the balance of the competition. Competitive balance leads to balanced league as well. On the contrary, unbalanced leagues can face various problems and threats such as bankruptcy, corruption, threats from competing leagues, etc. Stronger and richer teams advance to premier leagues where they earn more financial resources and become even richer. This way, the gap among the teams widens even further. Competitive balance is crucial for league attractiveness. (Michie et al., 2004)

Match uncertainty

Impact match result uncertainty in demand and interest in this battle is being studied mainly through two characteristics. These are the number of spectators at the stadium and the TV audience. The level of turnout uncertainty match can be measured in several ways. Currently, the most used pre-match odds betting, which are generated in a competitive market and reflect the likelihood of match result uncertainty. But this is not completely smooth. One of the drawbacks is that the classes are created in a moment in time than that when viewers are buying tickets available. Empirical studies that examine this issue, however, the hypothesis of great interest and attendance at the great uncertainty in the results do not confirm much. On the contrary, many of them show that audiences want to see his primary victory of the home team, so number of spectators is higher if the home team is the favorite high price. So the theory of turnout uncertainty does not match up to the same weight as previously thought. More recently, however, it examines how a match uncertainty impact on the audience viewing transmissions on television. Viewers, who watch matches at home, are not

as interested in the outcome of the match and prefer mainly viewing experience transfer. In this case, the results may be wrestling uncertainty analysis of the relationship and the TV audience different than it is in attendance.

League uncertainty

Theory uncertainty league results described it, what is the probability that one team or group of teams have dominated the competition in a particular season or over several seasons. League is a long-term competition and so there is no need independent variable, such as odds betting, which defines the level of uncertainty league results. The key question is what should be the division victories for items between teams in order to maximize overall attendance of league. Does the controversy whether increasing uncertainty league results has resulted in an increase of the total viewing attendance? The issue was or it currently spends time many sports economists and empirical studies associating attendance at matches and won the teams, but do not always have identical results. Some studies even show that less balanced competition can achieve higher overall spectator attendance as balanced competition.

From the above information indicates that there is no clear answer as to whether the increasing uniformity and increasing insecurity is increasing interest and demand for sports competition.

Salary Cap

The salary cap is defined as a form of wage maxima, which may be imposed on total payments to players of a club or the league as a whole (Dabscheck, 2004). "Effectively, a salary cap restricts how much teams can pay their players, ultimately preventing the inflation of salaries" (Staudohar, 1999: 3). The idea of salary caps was introduced by Rottenberg (1956) who anticipated salary caps "as a possibility, let teams bid for players and players accept offers, subject only to the constraint that a ceiling is imposed on the salaries that may be paid to individual players" (256-257). It was proposed that the salary cap allowed a team to assemble a more competitive roster paying less than the maximum. As mentioned above, the rising salaries are having huge consequences on the success of sports competitions and the salary cap is a way to limit its effect.

The salary cap is designed to ensure that all teams are spending equal amounts on player salaries, so that money cannot be used by wealthy teams to stock their teams with the all the best players. Ideally, if all teams are spending under the salary cap and have somewhat equal resources in terms of coaches and management, the competition should be fairly balanced. Furthermore, the appeal of the cap to owners is that it is a way to control salary costs. Vrooman (2000) also suggests salary caps act as a binding rule and restrict the mobility of professional players as well.

In conclusion, competitive balance has been investigated in world leagues and in various years. The present study attempts to investigate the competitive balance between the Super Rugby league and English Premiership League from 1996-2014 and compare them.

MATERIALS AND METHODOLOGY

This study is descriptive and the data are secondary and were collected from valid documents and league tables. This study aims to investigate competitive balance between to leagues. Premiership with salary cap regulation and Super Rugby, with no regulation in 1996-2014 seasons and compare them. Five models were used in this study:

1. The Three and Five-Club Concentration Ratio, also we can call it real values (C3 and C5) and the C3 and C5 Index of Competitive Balance, also we can call it empirical values (C3ICB, C5ICB)
2. Standard deviation of game results
3. Relative standard deviation (RSD)- The ratio of actual and ideal standard deviation wins
4. Number of winners
5. A placement in the k-th place

The above models were used in many studies (Dejonghe, 2006; Novotny, 2006; Szymanski, 2003; Feddersen, 2006; Tenreiro, 2006; Brunelli, 2006; Gouget et al., 2006; Michie et al., 2004). As these models were economic and mathematic indexes, it was not necessary to approve their validity and reliability.

1. In a totally balance league, **C3ICB and C5ICB** always equals 100 (Michie et al., 2004). An obtained C3ICB and C5ICB>100 shows a lower balance in that league. Index is an indicator of the static competitive equilibrium. C3 and C5 (“ideal values”) in a totally balanced league changes by a change in the number of teams and as the leagues of this study consist of 12, 14 and 15 teams:

C3= 0.25 in a 12-team league C3=0.214 in a 14-team league C3=0.2 in a 15-team league
 C5=0.416 in a 12-team league C5=0.357 in a 14-team league C5=0.333 in a 15-team league

C3/C5 ratio= total points won by the top five clubs/total number of points won by all clubs

C3/C5 Index of Competitive Balance= C3 or C5 ratio / (3 or 5/N) * 100

or, is it possible to say

Empirical value (CICB) = (ideal value/real value)*100

Where “N” is the number of teams in the league.

2. **Standard deviation of game results** show us how to win in the league diverted from the league average. In the case of competition where matches cannot finish in a draw the league average of 0.5.
3. **RSD** - the ratio of actual and ideal standard deviation extends the previous indicator of relationship to the situation which would occur in ideal distribution victories. It allows us to compare the actual deviations from the ideal state. Standard deviation in the ideal state in the tender without draws calculated as: $\sigma_i = 0.5 / N$, where N is the number of matches that each team plays.
4. **Number of winners**, respectively frequency of champions examines how often changing over time teams to master position. This method presents and is regularly substituted and even distribution of champions or a small group of teams, respectively one team in the competition dominates. It is an easily measurable indicator of clear meaningful.
5. **A placement in the k-th** positions is the latest way of measuring the competitive equilibrium, which is used in this paper. We are interested not only who is at the first place, but how many teams are placed in positions in the second, third, fourth, respectively k-th positions. It allows us to determine whether these positions receive wide number of teams or they are just points of the domain of a small group of clubs. What to do k-th place finish in the period more teams, the competition is more balanced.

RESULTS

Table 1 and charts shows C3/C5 (ideal value), C3/C5 ratio (real value) and C3/C5 Index of Competitive Balance (C3ICB /C5ICB) for the selected seasons.

Table 1: C3ICB/C5ICB, C3/C5 ratio, C3/C5 – ideal value in selected seasons

Super Rugby League							Premiership League						
Year*	C3I CB (E.V)	C5I CB (E.V)	C3 ratio (R.V.)	C5 ratio (R.V.)	C3 (I. V.)	C5 (I.V.)	Year*	C3I CB (EV)	C5I CB (EV)	C3 ratio (RV)	C5 ratio (RV)	C3 (IV)	C5 (IV)
1996 (12)	146. 34	135. 37	0.37	0.56	0.2 5	0.42	1995- 1996 (10)	161. 11	142. 22	0.48	0.71	0.3 0	0.5 0
1997 (12)	150. 60	132. 29	0.38	0.55	0.2 5	0.42	1996- 1997 (12)	148. 48	140. 91	0.37	0.59	0.2 5	0.4 2
1998 (12)	142. 86	132. 14	0.36	0.55	0.2 5	0.42	1997- 1998 (12)	153. 03	137. 27	0.38	0.57	0.2 5	0.4 2
1999 (12)	135. 02	127. 19	0.34	0.53	0.2 5	0.42	1998- 1999 (14)	147. 44	137. 69	0.32	0.49	0.2 1	0.3 6
2000 (12)	139. 34	129. 01	0.35	0.54	0.2 5	0.42	1999- 2000 (12)	150. 56	138. 88	0.38	0.58	0.2 5	0.4 2
2001 (12)	134. 94	125. 06	0.34	0.52	0.2 5	0.42	2000- 2001 (12)	143. 49	130. 67	0.36	0.54	0.2 5	0.4 2
2002 (12)	153. 75	144. 14	0.38	0.60	0.2 5	0.42	2001- 2002 (12)	141. 25	128. 28	0.35	0.53	0.2 5	0.4 2
2003 (12)	145. 03	130. 53	0.36	0.54	0.2 5	0.42	2002- 2003 (12)	135. 81	127. 30	0.34	0.53	0.2 5	0.4 2
2004 (12)	125. 88	121. 41	0.31	0.51	0.2 5	0.42	2003- 2004 (12)	142. 77	131. 58	0.36	0.55	0.2 5	0.4 2
2005 (12)	156. 42	138. 99	0.39	0.58	0.2 5	0.42	2004- 2005 (12)	135. 47	125. 59	0.34	0.52	0.2 5	0.4 2
2006 (14)	148. 96	136. 88	0.32	0.49	0.2 1	0.36	2005- 2006 (12)	130. 90	123. 99	0.33	0.52	0.2 5	0.4 2
2007 (14)	136. 82	134. 27	0.29	0.48	0.2 1	0.36	2006- 2007 (12)	130. 81	125. 50	0.33	0.52	0.2 5	0.4 2
2008 (14)	143. 67	137. 80	0.31	0.49	0.2 1	0.36	2007- 2008 (12)	134. 38	128. 71	0.34	0.54	0.2 5	0.4 2
2009 (14)	134. 33	129. 55	0.29	0.46	0.2 1	0.36	2008- 2009 (12)	128. 68	125. 52	0.32	0.52	0.2 5	0.4 2
2010 (14)	138. 04	132. 27	0.30	0.47	0.2 1	0.36	2009- 2010 (12)	139. 67	130. 23	0.35	0.54	0.2 5	0.4 2

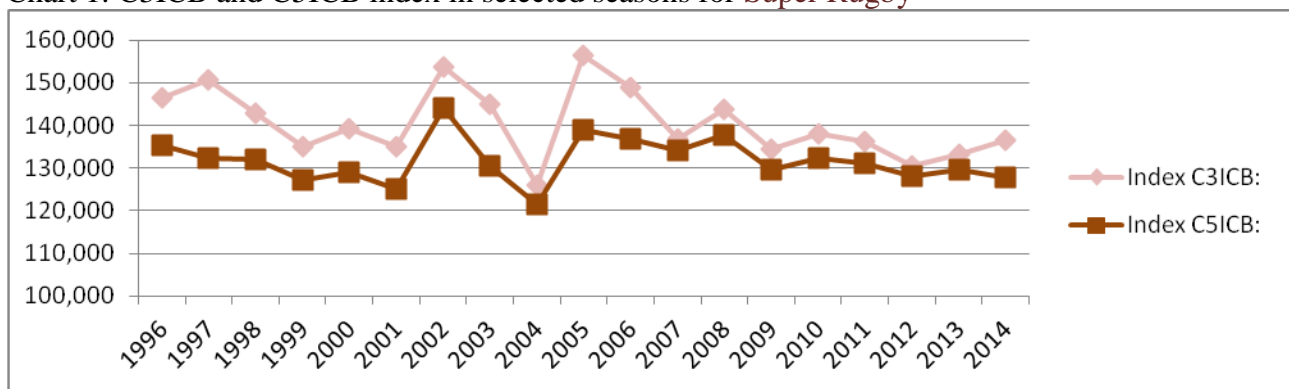
2011 (15)	136. 24	131. 04	0.27	0.44	0.2 0	0.33
2012 (15)	130. 37	128. 16	0.26	0.43	0.2 0	0.33
2013 (15)	133. 10	129. 72	0.27	0.43	0.2 0	0.33
2014 (15)	136. 60	127. 84	0.27	0.43	0.2 0	0.33

2010- 2011 (12)	142. 58	134. 71	0.36	0.56	0.2 5	0.4 2
2011- 2012 (12)	140. 95	131. 81	0.35	0.55	0.2 5	0.4 2
2012- 2013 (12)	138. 36	130. 19	0.35	0.54	0.2 5	0.4 2
2013- 2014 (12)	148. 91	139. 44	0.37	0.58	0.2 5	0.4 2

*number in parenthesis show numbers of clubs in the league

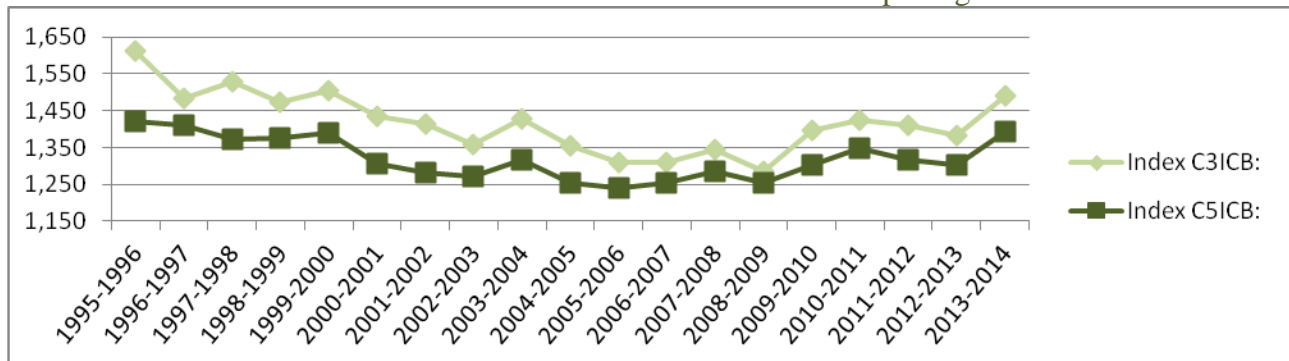
Source: Author

Chart 1: C3ICB and C5ICB index in selected seasons for Super Rugby



Source: Author

Chart 2: C3ICB and C5ICB index in selected seasons for Premiership League



Source: Author

How we can see from the chart 1 the both index (C3ICB and C5ICB) in the case of Super Rugby has decreasing tendency from the year 2005, which is signalized, that the competitive balance is still better and better. The most balanced seasons was the year 2004, where both index s are at the minimums. It looks like the Super Rugby is on the right track every season.

Chart 2 showing us that competitive balance in Premiere League has worst results from the beginning, but after they introduced their Salary Cap in order (1999), the both index were decreasing. Till the season 2010 the competitive balance was one of the best in the rugby world. But last few seasons are dramatically growing, which is warning signal for English Rugby Union. Maybe the salary cap does not work anymore, hard to say wright now.

Table 2 plus charts 3 and 4 shows to us standard deviation of game results. That shows us how to win in the league diverted from the league average in the selected seasons.

Table 2: standard deviation of game results in selected seasons

Super Rugby League					Premiership League				
Season	ASD	ISD(0,25)	ISD(season)	ISD(His.)	Season	ASD	ISD(0,25)	ISD(season)	ISD(His.)
1996	0.200	0.131	0.150	0.131	1995-1996	0.268	0.102	0.117	0.043
1997	0.186	0.131	0.146	0.131	1996-1997	0.228	0.092	0.105	0.043
1998	0.206	0.131	0.150	0.131	1997-1998	0.218	0.092	0.105	0.043
1999	0.197	0.131	0.147	0.131	1998-1999	0.199	0.085	0.097	0.043
2000	0.208	0.131	0.148	0.131	1999-2000	0.222	0.092	0.105	0.043
2001	0.157	0.131	0.151	0.131	2000-2001	0.195	0.092	0.106	0.043
2002	0.278	0.131	0.151	0.131	2001-2002	0.172	0.092	0.105	0.043
2003	0.214	0.131	0.151	0.131	2002-2003	0.150	0.092	0.104	0.043
2004	0.167	0.131	0.148	0.131	2003-2004	0.219	0.092	0.104	0.043
2005	0.231	0.128	0.144	0.131	2004-2005	0.144	0.092	0.104	0.043
2006	0.212	0.120	0.136	0.131	2005-2006	0.151	0.092	0.104	0.043
2007	0.182	0.120	0.137	0.131	2006-2007	0.145	0.092	0.104	0.043
2008	0.231	0.120	0.136	0.131	2007-2008	0.185	0.092	0.105	0.043
2009	0.201	0.120	0.138	0.131	2008-2009	0.160	0.092	0.105	0.043
2010	0.214	0.120	0.137	0.131	2009-2010	0.169	0.092	0.102	0.043
2011	0.199	0.106	0.120	0.131	2010-2011	0.204	0.092	0.105	0.043
2012	0.233	0.108	0.125	0.131	2011-2012	0.181	0.092	0.105	0.043
2013	0.197	0.108	0.123	0.131	2012-2013	0.187	0.092	0.105	0.043
2014	0.150	0.108	0.124	0.131	2013-2014	0.251	0.092	0.105	0.043

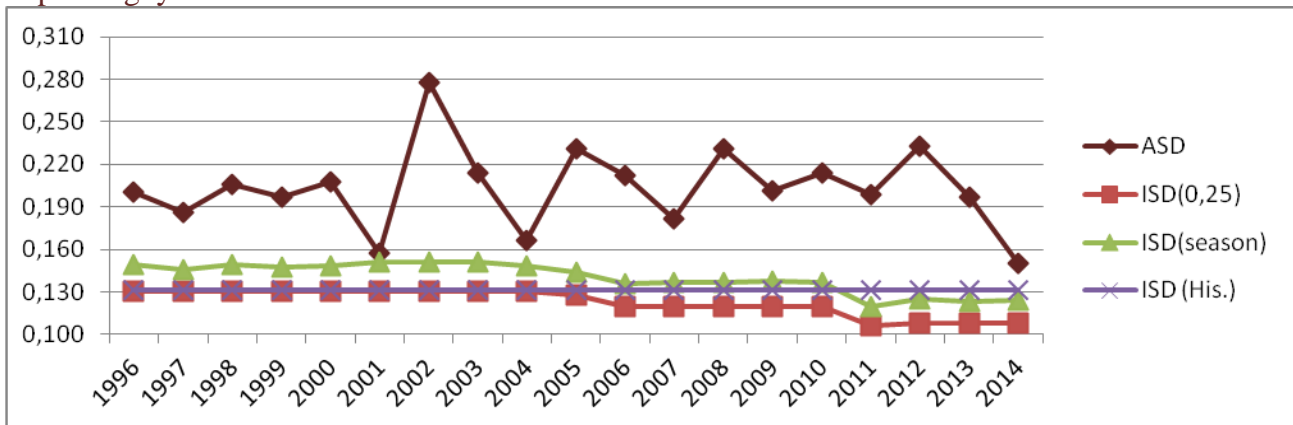
Source: Author

ASD -calculate winning % as $(\# \text{ of wins} * 2 + \# \text{ of ties}) / (\# \text{ of games played} * 2)$, and then Stdev.s
 ISD (0,25) - $[(1-p)/4n]^{1/2}$, where p is the probability of a tie under the equal playing strength assumption and n is the number of games played. In this case $p=0,25$

ISD (season) - $[(1-p)/4n]^{1/2}$, where p is the probability of a tie under the equal playing strength assumption and n is the number of games played. In this case p is calculated for every each one seasons.

ISD (His.) - $[(1-p)/4n]^{1/2}$, where p is the probability of a tie under the equal playing strength assumption and n is the number of games played. In this case p is calculated like an average from season 1996 to 2014.

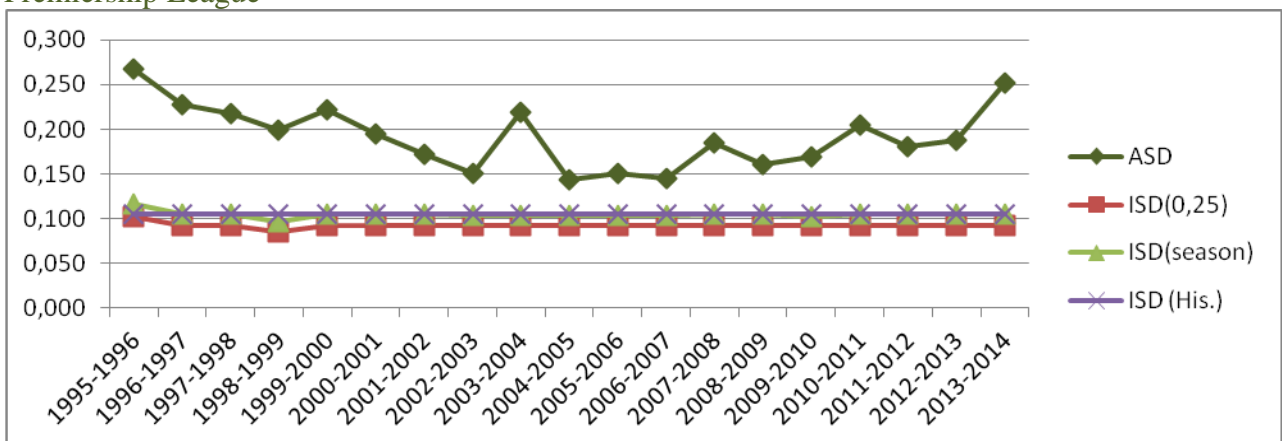
Chart 3: standard deviation of game results and ideal standard deviation in selected seasons for Super Rugby



Source: Author

How we can see from the chart 2 the Actual standard deviation is mostly flowing between the range 0.190 and 0.230, which is not bat at all. Even two times in the history (2001 and 2004) the ASD met the ISD. Does not matter if we are looking at ideal standard deviation of historical value or season value or with probability of $p=0,25$. The most extreme season was 2002 were Crusader won every match and also they became champions without losing any point. On the other hand the Bulls and Lions were defeated every time. That was only one time in history were the club won the league without losing any point and also there was the biggest different between the first and second position in history (12points). From the season 2012 is standard deviation of game results decreasing rapidly and the last played season almost hit the goal again. Maybe it is caused, because the league has more teams so the winner points are split or divided more broadly. It will be interesting to see what will be happened to next season.

Chart 4: standard deviation victories and ideal standard deviation in selected seasons for Premiership League



Source: Author

The English Premiership League are more constant than Super Rugby, but the actual standard deviation is addicted on the numbers of team in the season, so that is the reason why is Super Rugby more changeable. From the year when they introduced the salary cap were ASD very close to ISD. Only the season 2003-2004 had more significant change. It happened because Rotherham Titans lost all 22 games. This was only second time in history that the team could not win any game. First time it was in first observed season (1995-1996) with the team West Hartlepool.

Table 3 and charts shows relative standard deviation - the ratio of actual and ideal standard deviation extends the previous indicator of relationship to the situation which would occur in ideal distribution victories. Is often attributed to Noll (1988) and Scully (1989). How mention about the ASD was is addicted on numbers of teams in the seasons, so in this case is better to use Relative standard deviation.

Table 3: relative standard deviation

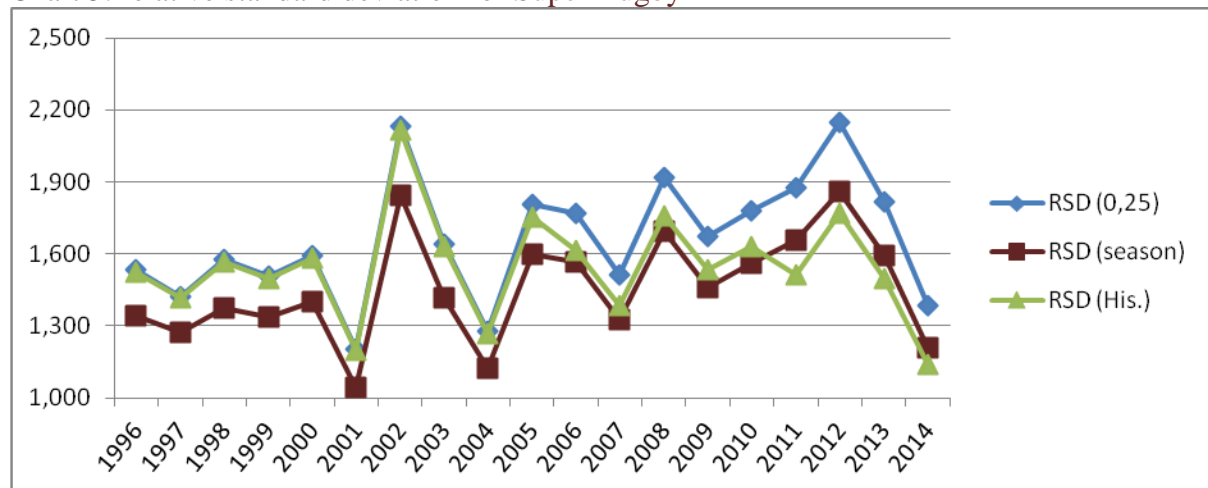
Super Rugby League			
Season	RSD (0,25)	RSD (season)	RSD (His.)
1996	1.536	1.340	1.527
1997	1.424	1.272	1.416
1998	1.578	1.377	1.569
1999	1.507	1.335	1.498
2000	1.592	1.400	1.583
2001	1.206	1.044	1.199
2002	2.131	1.845	2.118
2003	1.640	1.420	1.630
2004	1.277	1.123	1.270
2005	1.806	1.599	1.756
2006	1.768	1.566	1.617
2007	1.513	1.325	1.383
2008	1.922	1.692	1.757
2009	1.676	1.459	1.533
2010	1.781	1.560	1.629
2011	1.874	1.656	1.514
2012	2.149	1.861	1.772
2013	1.816	1.593	1.497
2014	1.384	1.209	1.141

Premiership League			
Season	RSD (0,25)	RSD (season)	RSD (His.)
1995-1996	2.626	2.287	2.558
1996-1997	2.469	2.171	2.175
1997-1998	2.361	2.077	2.080
1998-1999	2.338	2.048	1.895
1999-2000	2.408	2.117	2.121
2000-2001	2.110	1.841	1.859
2001-2002	1.863	1.645	1.641
2002-2003	1.630	1.444	1.436
2003-2004	2.368	2.108	2.087
2004-2005	1.557	1.380	1.372
2005-2006	1.636	1.456	1.442
2006-2007	1.575	1.396	1.387
2007-2008	2.006	1.757	1.767
2008-2009	1.734	1.531	1.528
2009-2010	1.833	1.651	1.615
2010-2011	2.214	1.947	1.951
2011-2012	1.955	1.720	1.723
2012-2013	2.030	1.785	1.789
2013-2014	2.721	2.384	2.397

*Relative standard deviation is calculating = ASD/ISD

Source: Author

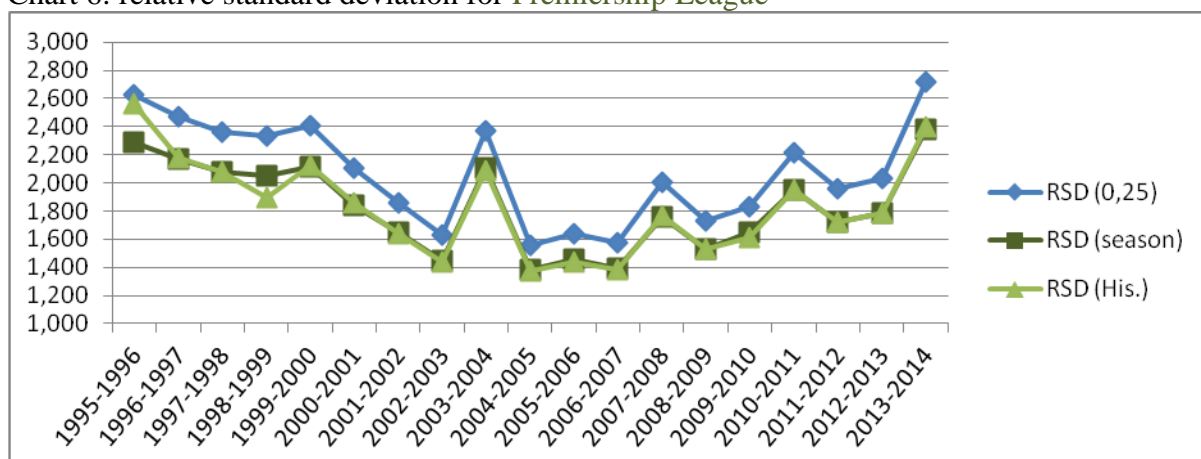
Chart 5: relative standard deviation for Super Rugby



Source: Author

How we can see from the chart the relative standard deviation is clearly much higher than the ideal standard deviation. It is almost two times higher. We can approximately say, that all three types of RSD are flowing between the ranges from 1,3 to 1,9 most of the times. Most important is RSD (season), because it is most reflecting one the changes during the period.

Chart 6: relative standard deviation for Premiership League



Source: Author

How we can see from the chart the Premiere League has relative standard deviation higher than the Super Rugby. Most of the time is flowing between the range 1.500 and 2.000. And the last observed season had the worst result ever for the RSD season. We can clearly say, that last three seasons, are still worst and worst.

Charts 7,8,9 and 10 shows Number of winners, respectively frequency of champions examines how often changing over time teams to master position. But we still can take a look on this model from two different sides. First one is regular season and who became a champions and the other one is play of part. It can be different result, because the winner of regular season could not be a winner of play of. Next four charts are showing the differences in both cases.

Chart 7: number of winners in regular seasons for Super Rugby



Source: Author

How we can see this model bring to us little bit different result, as the others one before. The league from the models used before signaled, that is it not very balanced. But this model shows us, that in the last nineteen regular seasons the league had eight different winners from fifteen teams. Which is pretty good result. It is hard to predict who will be won the league. Let's take a look on play off chart.

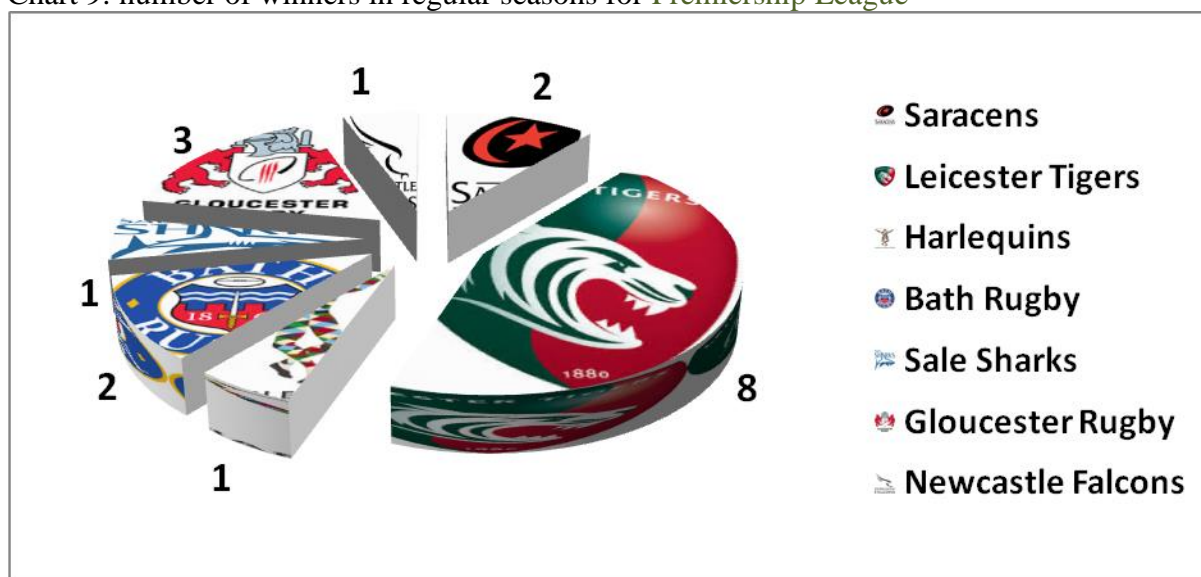
Chart 8: number of winners in play off for Super Rugby



Source: Author

The play off chart has little bit different result than one before (regular season). The numbers of winner are two less and there is a stronger domination of team Crusaders.

Chart 9: number of winners in regular seasons for Premiership League



Source: Author

The result from the regular seasons charts shows that during the nineteenth observed seasons were seven different winners from seventeen teams. But we also can see the dominations of Leicester Tigers, which won eight times. So it not very competition balanced. Let's take a look on play off chart.

Chart 10: number of winners in play off for Premiership League



Source: Author

How we can see, there is opposite effect than in the Super Rugby. The numbers of winner in play off part are bigger than in the regular season, truly from eight to ten teams. But the dominations of Leicester Tigers are even bigger, because they won ten times from nineteen possibilities. The salary cap did not bring the difference to this model.

Table 5 and 6 shows a placement in the k-th positions is the latest way of measuring the competitive equilibrium, which is used in this paper. We are interested not only who is at the first place, but how many teams are placed in positions in the second, third, fourth, respectively k-th positions. It is interesting from the reason that the first four teams are playing the play off.

Table 5: placement in the k-th positions for Super Rugby

Placement in the k-th positions from 1996-2014					
	first	second	third	fourth	Together to 4.
Waratahs	1	3	2	1	7
Crusaders	4	7	0	4	15
Sharks	0	1	3	2	6
Brumbies	3	1	2	2	8
Chiefs	1	2	0	1	4
Highlanders	0	0	2	2	4
Hurricanes	0	1	3	2	6
Force	0	0	0	0	0
Bulls	2	1	3	0	6
Blues	3	1	0	2	6
Stormers	1	2	1	0	4
Lions	0	0	1	1	2
Reds	3	0	1	1	5
Cheetahs	0	0	1	0	1
Rebels	0	0	0	0	0
Cumulative	8	10	13	13	
Kings are not counted-played only one season					

Source: Author

How we can see from the last used model placement in the k-th positions, the top two it is not so much changeable. Cumulative result shows us, that most of the seasons are first two places are occupant by the same clubs. It is only one or two different clubs per season, which are substitutes the strongest one. But the in the top four during the selected observed period were almost every each one team, instead of three of them. So it means that almost every team in the league had a change to win the title in play-off.

Table 6: placement in the k-th positions for Premiership League

Placement in the k-th positions from 1996-2014					
Team	first	second	third	fourth	together to 4.
Saracens	2	2	3	2	9
Northampton Saints	0	3	2	4	9
Leicester Tigers	8	5	2	3	18
Harlequins	1	1	3	2	7
Bath Rugby	2	2	3	3	10
Sale Sharks	1	1	1	0	3
London Wasps	1	5	0	2	8
Exeter Chiefs	0	0	0	0	0
Gloucester Rugby	3	0	3	1	7
London Irish	0	0	2	1	3
Newcastle Falcons	1	0	0	0	1
Worcester Warriors	0	0	0	0	0
Bristol Shoguns	0	0	1	0	1
Richmond	0	0	0	0	0
Leeds Tykes	0	0	0	1	1
Rotherham Titans	0	0	0	0	0

Bedford Blues	0	0	0	0	0
cumulative	8	9	11	12	
London Scottish	played only one seasons - no counted				
West Hartlepool	played only one seasons - no counted				

Source: Author

How we can see from the table 6 the Premiership has the same cumulative result as Super Rugby on the first position. However the second, third and the fourth are not growing so much from the position to position. That is reflecting worst competitive balance. From the seventeen teams five of them never played play off and even three of them was in best four once (on the third and fourth position). Only once the Leicester Tigers miss the play-off games. It is very strong domination from this team, and other three - five more. The rest are lucky if they had change to take a look in play-off games.

DISCUSSION

The issue of the paper was to compare two different rugby leagues in the nineteen seasons period. It starts from the year 1996 to the last played season 2014. The paper used the secondary data and results from the league standings. One League is from Europe – English Premiere League, where they had applied salary cap in the 1999 in order and the second one is Super Rugby which is consist of three different nations (Australia, South Africa and New Zealand). The main issue was took a look on competitive balance in those leagues, because they are working on the different principles. In the Super Rugby, there are now restrictions, only the money gates sharing, but the league in the observed period grow from original 12 teams to 15 and there are still some discussion about next growing. So the first issue was take a look if is it helpful for competitive balance to involved still more and more teams to the league. On the other hand there was English Premiere League with salary cap restriction. Salary cap is one of the most powerful restriction, because, the most strongest and richest clubs can spend on salary the same sum of money as the weakest, so they do not have a change to collect all the best players, because they cannot pay them the salary as they are worthy. The salary cap comes from the US leagues. But the salary cap is only one of the restrictions. In USA, they have also the draft, money sharing, luxury tax and licensing model. So it is more compact. The second issue was to take a look how the salary cap helps to bring competitive balance in the Premiere league. And on the end compere these two results. In the paper were used four different models to measuring the competitive balance. Each one is looking at competitive balance from a different point of view.

CONCLUSIONS

The result of the first issue (competitive balance in Super Rugby) is that the involving the more clubs into the league is a good choice for them. From the beginning of the observed period the league were little bit more competitive balanced, how we can see from the RSD in the chart 5, but last few years there is strong decline in the curve. Also last five years the league had every season different champions. All models are showing that the Super Rugby is on the right track. It will be interesting to continue in this research after few more seasons. And also could be interesting to compare with the effect on the average attendance. This additional research can bring interesting outcome for potential sponsors and company whose are thinking about sponsorship and propagating himself. Plus recently were the world cup in rugby in final Australia and New Zealand what can have a strong influence on attendance and money in rugby in those countries, so we can expect also some changes in competitive balance after few years.

The result of the second issue (competitive balance in Premiership League) is that after they had involved the salary cap the RSD was much better than before. But last few years look like the salary cap stops working. The curve has increasing tendency and output is reaching the worst result from the observed period. The others models are also against that the salary cap is working. From the outputs we can see, that there is a domination of the team Leicester Tigers, even after the league involved the salary cap. Only one positive result is that the last four seasons has four different champions. But still the league is constantly spinning around few teams in final four.

The result of the third issue (comparison of competitive balance between the leagues) show, that better result comes out from the Super Rugby League than from the Premiership League. The Super Rugby won in almost every each one models. Only in the numbers of play-off winners are little bit worse than Premiership League. So we can clearly say that the strategy of involving the more clubs to the league is better than salary cap. That is does not mean the salary cap is not effective, but maybe it needs to be supported by others restrictions, like a drafts or something else. Maybe it can be much more worthy to think about make a connection with France Rugby League Championship 14, but this is just author idea.

Next few studies will be about compering the competitive balance with the average attendance and the link between those inputs and also to comperere competitive balance with other rugby leagues in the world.

REFERENCES

1. ANDREFF, Wladimir, SZYMANSKI, Stefan, Handbook of the Economics of Sport. 1.vyd. Cheltenham: Edward Elgar Publishing Limited, 2006. ISBN 1-84376-608-6
2. BRUNELLI M. The impact of UEFA Champions League upon domestic championships: the Italian Serie A. Nyon: UEFA/IASE Seminar; May 2nd, 2006.
3. DABSCHECK, B. (2004). Industrial Relations in Australasian Professional Team Sports. Otemon Journal of Australian Studies, 30 (4), 13-17.
4. DEJONGHE T. The evolution of Belgian football over the last decades. Nyon: UEFA/IASE Seminar; May 2nd, 2006.
5. FEDDERSEN A. Economic consequences of the UEFA champions' league for national championships; the case of Germany. Nyon: UEFA/IASE Seminar; May 2nd, 2006.
6. GOUGET JJ, PRIMAULT D. The economic impact of the UEFA Champions League on the French football championship. Nyon: UEFA/IASE Seminar; May 2nd, 2006.
7. JENNETT N. Attendances, Uncertainty of Outcome and Policy in Scottish Football League. Scot J Polit Econ. 1984; 33:176-198.
8. KONING RH. Balance in competition in Dutch soccer. The Statistician. 2000; 49(2):419-431.
9. McMILLAN, J. (1997). Rugby meets economics. New Zealand Economic Papers, 31(1), 93-114.
10. MICHIE, J., OUGHTON C. Competitive Balance in Football: Trends and Effects. London: The Sports Nexus; 2004.
11. NEALE, W. C. (1964). The peculiar economics of professional sports. The Quarterly Journal of Economics, 78(1), 1.
12. NOVOTNY J., Sport economics – 1st Ed. Prague: Wolters Kluwer CZ, 2011. ISBN 978-80-7357-666-0
13. QUIRK J, FORT R. Pay Dirt: The Business of Professional Team Sports. Princeton: Princeton University Press; 1992.
14. ROTTENBERG, S. (1956). The baseball players' labour market. The Journal of Political Economy, 64(3), 242-258.

15. STAUDOCHAR, P. D. (1999). Salary caps in professional team sports. *Competition Policy in Professional Sports: Europe after the Bosman Case*, 71-89.
16. SZYMANSKI S. The Economic Design of Sporting Contests. *J Econ Lit.* 2003; 41:1137-1187.
17. TENREIRO F. Can European football David's equal their Goliath's? The Portuguese case assessment. Nyon: UEFA/IASE Seminar; May 2nd, 2006
18. VROOMAN, J. (2000). The economics of American sports leagues. *Scottish Journal of Political Economy*, 47(4), 364-398.

Internet references:

1. Official web side of SANZAR and Super Rugby:
(<http://www.sanzarrugby.com/superrugby/about-super-rugby/>)
2. Official web side of Premiership Rugby: (www.premiershiprugby.com/history/)

