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The publication presents the results of current scientific research of Russian and foreign scientists, teachers, post-graduates and students. All studies are united by the one goal − to create conditions for the human welfare. The consideration of the problem of assessment and management of welfare is based on the multi disciplinary approach of Economics and Sociology, Medicine and Psychology, Physical culture and sports, IT technology. Special attention is paid to the welfare of the elderly, social media, ageing of the population. Also consider the financial, social and environmental aspects of wellbeing.

Dear participants of the Scientific Symposium «Lifelong wellbeing in the world»!

This event, devoted to the problems of wellbeing, is held at the Tomsk Polytechnic University for the second time.

On the 27–30 of March Department of Economics and other departments of the Institute of Humanities, Social Sciences and Technologies and the Institute of Cybernetics organized and held the International Scientific Symposium «Society and lifelong wellbeing».

This symposium was held with the assistance of the Russian Fund of Federal Property, foreign and Russian partners, the Bank "VTB", the Company "Omega".

Researchers from Tomsk, Omsk, Novosibirsk, Kemerovo, Krasnoyarsk, Angarsk, Voronezh, Moscow, and also from Great Britain, the Czech Republic, Vietnam, Germany, Italy and other countries took part in the symposium.

At the moment we are holding the scientific symposium with the participation of our colleagues from Italian University of Trento in the part of the implementation the Government Decree 220 on attracting highly qualified foreign specialists.

Tomsk Polytechnic University initiated the international symposium on wellbeing not accidentally. The University established the International Scientific Educational Laboratory for the Improvement of Wellbeing Technologies of Older Adults at the Department of Economics.

The scientific laboratory supervisor and chairman of the symposium organizing committee is Professor Fabio Casati.

The major objectives of the scientific symposium:

– establishment of a creative platform for scientists, experts, managers in the sphere of lifelong wellbeing;

– presentation and discussion of scientific problems relating to wellbeing and development of strategies for solving problems;

– development of conceptual approach for the major components which allow us to evaluate social and economic wellbeing.

Human and social wellbeing is an essential component of sustainable economic development in the 21st century.

Research, which is aimed at finding ways to improve life quality and lifelong wellbeing, is in increasingly high demand in the modern world of science. All the people in the world care deeply about these issues, because the progress we achieve is aimed at making people much happier in terms of life quality.

Due to the rapid demographic growth in most countries around the world in the 20th century, special attention will need to be given to the problem of lifelong wellbeing.

This global demographic triumph affected all aspects of life and human being: social, economic, political, cultural, psychological and spiritual.

Nowadays many countries are facing the problems of development and population aging at the same time and they need to start solving these problems.

Particular attention is paid to the green economics, the creative economics, economics of happiness and economics of attention. There is an unsolved problem in philosophy and sociology – the problem of a "good society", high expectancy of active

life, subjective satisfaction and social interaction. Engineering and medical projects are also aimed at solving problems to prolong life and to improve health and living conditions.

The department of economics in cooperation with other departments of the Institute of humanities, social sciences and technologies (Departments of sociology, philosophy, sports disciplines) and the Institute of cybernetics (Department of applied mathematics) are actively involved in research of lifelong wellbeing. Postgraduate students are engaged in the research as well and they are planning to defend candidate's and doctor's theses in the framework of different aspects of this subject.

Study of wellbeing factors, evaluation and measurement of real events are very important tasks of modern multidisciplinary research.

We wish all participants an effective work and a successful collaboration!

Professor Galina A. Barysheva

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ECONOMIC ASPECT OF PROBLEMS OF HEALTH, WELLBEING, ECOLOGY, RESOURCES

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Abstract. The general Assembly of the UN proclaimed carrying out the first decade of the twenty first eyelid to fight for poverty eradication, the solution of environmental problems and completion of resources and health of the population of a planet. Problem of wellbeing, ecology, completion of resources and health of the population of a planet it is more expedient to solve on the basis of uniform health of preserving green economy.

Keywords: Structural modernization of economy, Fiscal rules, Health saving-up uniform economy, Balance between economic and social stability.

1. Introduction

Demand for health at the population of 100%. The people want to live here and now. Therefore it is expedient to form health preserving economy. If it is realized at the current stage, equilibrium pricing stabilizes health preserving economy for future generations with purchasing power of the population, including younger generation and pensioners, a consumer basket of goods and services of healthy activity. Healthy activity (healthy lifestyle) keeps health to the person and will create the healthy population.

Uniform health the preserving green economy creates conditions for a practical embodiment of creative activity and production of material benefits for a healthy lifestyle of each person. It is promoted by just professional solutions of the authorities and action of participants of economic processes. Authorities have to define legal conditions fair health of preserving economy for disclosure and realization of talents. Legal conditions have to give opportunity to each conscientious participant of economic processes and social programs to get the right to necessary requirements of a healthy lifestyle observance of all its rules. For this purpose it is necessary to make and hold intersectoral and other balances at the level of the equilibrium prices [1-10].

To solve the problems proclaimed the United Nations General Assembly, the institutionalization health of preserving uniform green economy has to realize the budgetary, innovative, investment, self-supporting and self-financed economic processes proportional, interfaced and coordinated on time and territorially, on branches, on natural and human resources, on intellectual and production property, on supply and demand, on quality and quantity, on expenses and profit, on a salary and the price, on ensuring prosperity of each person and a family, on completion of resources, without violation of conditions of restorability of environment. Economic processes of all kinds of activity have to work for health and wellbeing of the person, ecological safety and society development.

Transition to uniform health to preserving green economy is carried out on the basis of three financial balances. First, financial balance of the population of urban and rural areas, as balance of the income of the population and cost of products, goods and services of healthy activity [10]. Secondly, financial balance of regions which is formed on the basis of financial balances of the population of urban and rural areas of the region. Thirdly, the financial balance of the country made on the basis of financial bal-

ances of regions and financial balance of the population of city and rural territories of the country.

2. Economic model of global wellbeing

Key parameter of financial balance of the population of territories is the starting norm of healthy activity for all conscientious participants of economic processes and social programs. This balance allows to embody Christian ideology in real economy.

Criterion of realization of key parameter: the quantity of money in economy of territories has to be always enough for production and consumption of products, goods and services of healthy activity by the population living on it.

Realization mechanism: uniform regulation of pricing taking into account a demographic situation and changing demand and offers in the market.

Financial balances green health of preserving uniform economy provide all participants of economic activity and social programs with finance for healthy activity [9-10].

Let PC - product cost,

QPG - quantity of production-goods,

MCG - market cost of the goods,

QPCO - quantity of participants in a commodity output,

QMCO – quantity of manufacturers of a commodity output,

D – demand,

MP – market profit,

DPF – deductions from profit in funds;

AP – appropriated profit,

SENHL – social and economic norm of healthy life,

LP – labor productivity.

Then

$$QPG \times (MCG – PC) = MP;$$
$$AP = MP – DPF;$$
$$AP/SENHL = QPCO;$$
$$QPG/QMCO = LP.$$

At 100 % demand for healthy life D ≥ QPG и AP provides all its participants with the finance for healthy life. Deductions from market profit, first, arrive in budgetary fund and are spent under the state order in budgetary sphere. Secondly, arrive in social funds of support of children, parents looking after kids and pensioners.

Strategic priority directions innovative health saving up uniform economy are, first, maintenance of the population with the goods, services and conditions of a life of healthy ability to live, secondly, completion of resources, thirdly, environment ecology.

Maintenance of the population with starting social and economic norm of healthy life is carried out by uniform regulation of pricing from a position of realization of the future demand for healthy ability to live.

Let {Xi} – set of the goods in the market, where i = 1 … … … … n;

Xi – quantity of i-th goods;

Ci – cost of resources on manufacture Xi of the goods;

Ki – quantity of employees participating in manufacture and realization Xi of the goods;

NHL – norm of healthy ability to live;

WFi – a wages fund of employees participating in manufacture and realization Xi of the goods; where WFi ≥ (Ki x NHL) for all i;
Pi – profit on realization Xi of the goods in the market, where Pi > WFi for all i;
Уi - the price of i th goods in the market;
К – quantity of the population;
Р – cumulative market profit, where Р = Σ Pi;
If Уi > (WFi + Ci): Ki for all i; that Р : К ≥ NHL;   (1)
If WFi < (Ki x NHL) increases Уi, that Уi > (WFi + Ci) : Ki.
If financial balances of all levels provide performance of a condition 1, they maintain social and economic stability of society of providing population with starting norm of healthy activity (Schedule 1).
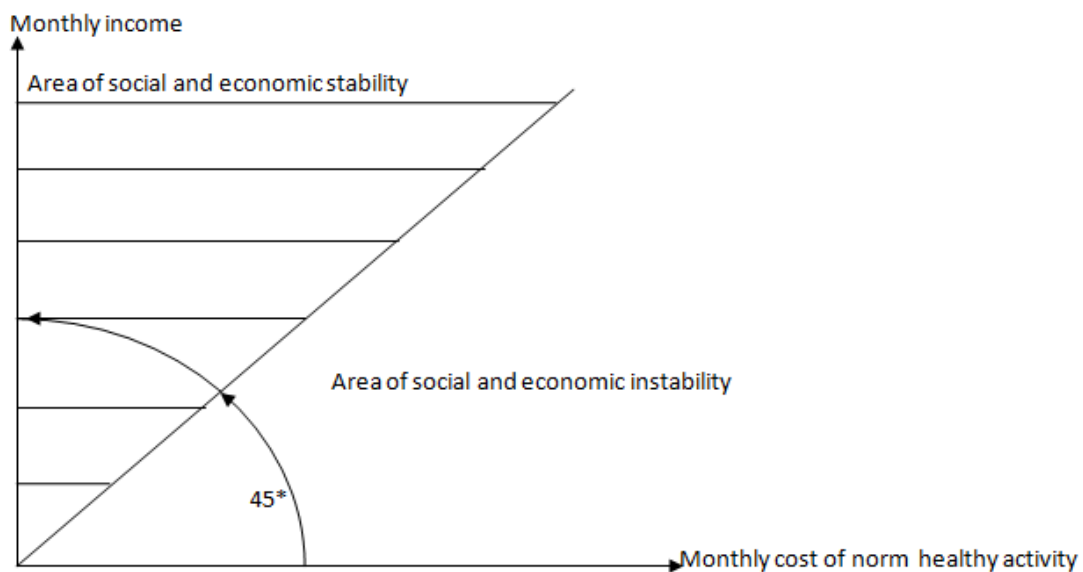
Schedule 1.

Financial balances are formed taking into account the main indicator of social and economic stabilization [10]. Providing with norm of healthy activity everyone is the main indicator of social and economic stabilization. The indicator is defined by the relation of a ceiling price of a consumer basket, services and life goods to the minimum income. The minimum constant monthly income bigger or equal to the maximum monthly cost of norm of healthy activity is a condition of social and economic stabilization.
The government of the country, the power of regions and the cities together with departments and the enterprises of various branches of economy count balances of the country, regions, the cities and their inhabitants which have to provide financially realization of products, goods and services of healthy activity and their consumption.
The state sets the fiscal rule for heads of the enterprises:
  - to provide with a salary of each conscientious employee of not less monthly cost of products, goods and services of healthy activity.
Regulation mechanisms for deduction of a ratio of the price, a salary, costs of production (products of goods of services) turn on and arrived within social and economic stability:
1. Market mechanism of regulation by the enterprises increase of labor productivity and quality of production.

2. Market mechanism of regulation by sectors of economy and branches equilibrium prices.

3. It is market - the state intersectoral mechanism of regulation of a ratio 1 on limit of social and economic stability adjustment of the equilibrium prices.

4. State mechanism of regulation of system violation of a ratio 1 enterprises, sectors of economy and branches establishment of the equilibrium prices.

And also fiscal rules of economy work:

A. Lack of speculative operations.

B. The prices if quality (products, goods and services) didn't decrease don't change. The prices if quality worsened decrease.

C. Taxes are collected for payment of the immaterial optimized work.

D. Realization (products of goods of services) in territories is optimized.

Drawing up financial balance of the population of urban and rural areas requires definition of financial security of activity of subjects of managing and local governments, coordination of material and material and financial and cost proportions at micro level, definition of sources of formation and volume of financial resources of subjects of managing and local governments, definition of the directions of use of financial resources by subjects of managing and local governments. The financial balance of the population of urban and rural areas represents the set of all income and expenses. It considers professional opportunities of a labor resource, economic and economic opportunities of territories for their development and improvement of quality of life of the population. It helps to pursue effective migratory policy in territories of the country.

The characteristic of social and economic capacity of the territory is a basis of development of programs of development health of preserving economy of territorial division. Social and economic capacity of the territory is a cumulative ability of cash labor, material, financial, natural and other resources of providing maximum in these conditions of output of products, goods and services of healthy activity for full satisfaction of individual and collective requirements of the population of the territory and creation of conditions for development uniform health of preserving green economy of this urban or rural area.

Possibilities of accumulation of social and economic potential define extensive and intensive factors. Growth of volumes of resources belongs to extensive factors: labor, material, financial, natural. Improvement of quality of all types of resources, increase of efficiency of their use belongs to intensive factors.

Important factor is proportionality and balance between different types of resources and potential components. Absence or insufficient quantity of one of its components becomes an obstacle of realization of the others.

Component of social and economic capacity of the territory is the labor potential which serves as the characteristic of ability of the population to economic and economic and innovative activity. As carriers of labor potential a manpower acts. Determination of labor potential demands the accounting of number of a manpower and their professional opportunities and working capacity. It allows to determine the cost of a manpower on a labor market, distribution by branches and sectors health of preserving economy. to define balance of a manpower, to reveal the innovative potential of a manpower, to trace a demography of a manpower. Territorial social services make groups on a floor and age, by training and qualifications, on occupations and professions, on branches and economy sectors, on a condition of working capacity and labor productivity. Classification of a manpower by professions allows to distribute

workers in concrete forms of labor activity, effectively to use them and to solve a problem of their reproduction of spheres and kinds of activity, forms of ownership with division on city and rural territories, and the most important to keep balance of a manpower. The balance of a manpower is important for security of the territory with a manpower for implementation of programs of the territory for the concrete period. The professional aspect of the population defines its differentiation of economic activity. Employment and redistribution of a labor resource is carried out through a labor market according to supply and demand of employers on their qualification.

The financial balance of the population of the territory considers its fixed assets and their reproduction, wear and balance. Fixed assets are the part of territorial wealth created in the course of production of fund the forming branches. Them treat and not material assets, such as the software, original literary works and arts and other intellectual property. Balance of fixed assets are data which characterize volume, structure, their reproduction on branches and economy sectors, on forms of ownership.

In financial balance of the population of the territory its revolving funds are reflected. Revolving funds are production stocks (raw materials, materials, fuel, spare parts), tools, landing materials, a stern and animals, a work in progress, finished goods and goods for resale, and also material reserves.

The system of indicators of current assets includes structure of current assets, security with revolving funds, movement of current assets and their turnover. The structure of current assets includes natural and material indicators, financing sources, the location, branches and economy sectors. Indicators of movement of current assets characterize their change within a year: replenishment and leaving. One of the main purposes of current assets – ensuring production with them.

Turnover of current assets is characterized by number of turns of revolving funds for this period, lasting one turn.

The financial balance of the population of territories gives a clear idea of volume and structure of release of products, goods and services of healthy activity, of level and structure of the income and expenses of institutional units, of financial opportunities of the territory, of quality of life of the population.

Finance as blood system of economy, play huge role in structure of the market relations and in the mechanism of their regulation. In the territory financial means form financial streams.

The financial balance of the population of the territory gives the qualitative and quantitative scheme of financial resources: their stability, liquidity, structure, streams of their redistribution and expenses. It shows, what part of financial resources remains at the disposal of the territory, how many means go on social payments to the population, what components of financial resources of the enterprises for sources of formation and to use directions.

Correctly made financial balance of the population of urban and rural areas maintains market balance of supply and demand.

Balance is based on the following postulates:
• as the main tool of life of society the controlled market serves, and the major kind of activity is production of goods and services;
• economic activity is carried out in the conditions of free competition under state control, and regulated prices develop under the influence of supply and demand according to a condition of 1;
• the purpose of producers — receiving profit and performance of a condition 1;

• the purpose of consumers — receiving products, goods and services of healthy activity;

Macroeconomic balance is a result of joint actions of the state and business, factors of production, supply and demand at which a way of use of limited production resources for creation of various products, goods and services and their distribution between citizens of the population are balanced. Balance is stable use of all resources and optimum realization of economic interests of all citizens of the population in all sectors, spheres, structural elements of economy.

At the heart of balance the following ratios lie:

$$CO = CD$$

where CO - the cumulative offer,
CD – cumulative demand.

$$VE = I$$

where VE – the volume of expenses,
I – income.

$$GS = GI$$

where GS – the general savings,
GI – the general investments.

Dynamic balance is reached by regulation of pricing and intersectoral balance the equilibrium prices.

The effective mechanism of stabilization of economy is carried out by purchasing power, solvent demand, an equilibration of the prices, optimum increase of pensions and grants, instead of injection of money in the economy, not provided with goods and services.

3. Conclusion

Opportunities of use of standard measures of regulation of a macroeconomic situation of modern market economy are exhausted. Financing of social, economic and ecological parameters of a sustainable development aren't provided. Youth unemployment threatens with loss of economic potential of the whole generation.

To translate the world community on world uniform health preserving green economy it is possible by modernization of modern market economy and Bretton-Vudsky payment world system [1-10]. It is necessary for modernization:

- to create infrastructure uniform health of preserving green economy on realization of the budgetary, innovative, investment, self-supporting and self-financed economic processes proportional, interfaced and coordinated on time and territorially, on branches, on natural and human resources, on intellectual and production property, on supply and demand, on quality and quantity, on expenses and profit, on a salary and the price, on ensuring prosperity of each person and a family, on completion of resources, without violation of conditions of restorability of environment;

- to enter norm of goods, a life and services of healthy activity as starting;

- to keep starting norm of goods, a life and services of healthy activity to all conscientious participants of economic processes and social programs uniform expeditious regulation of pricing by the equilibrium prices;

- to use as investments and the credits for release of goods and providing a life and services of healthy activity deposits of banks on the basis of individual share;

- investment and crediting of projects for individual share in them financial maintenance;

- to use only electronic calculations with the automated control of the income with expenses;
- to ensure safety of electronic calculations at failures of the equipment and from unfair citizens;
- effective use and completion of natural resources;
- ecology protection by the economic activity which isn't violating conditions of restorability of environment;
- ensuring starting norm of healthy activity for all participants of market economy and social programs by means of balance of the income and expenses of the population of all managing territories;
- to balance use and completion of a professional, cultural and healthy human resource by transition to a spiritual healthy lifestyle, and health preserving economy;
- global economic stabilization by pricing regulation on the basis of the equilibrium prices;
- providing ecology of environment;
- creation bio - the technological industry;
- ensuring reproduction a gene of containing resources;
- global social stabilization by unemployment elimination by labor market use in restoration and preservation of ecology of managing territories;
- to sign the international economic memorandum of use of resources for the good of peace activity and to exercise control.

Everything that the person creates, becomes as a result either household, or the industrial waste, polluting environment and breaking its ecology. Purely not where clean and where don't litter. It is necessary to change economic activity in a root, to provide reproduction a gene of containing resources, to develop ecological biotechnologies, to create bio - the technological industry and harmonious (equal) acritical (uniform) health preserving green economy.

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INFORMATION TECHNOLOGIES MATCHING WITH GENERAL CRITERIA FOR COMPUTATIONAL THINKING

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Abstract. This paper is an attempt to generalization and development approaches to the interdisciplinary analysis of computer science, formed in the scientific school of NRNU MEPhI and MIPT. In interpreting the perspective of computing in modern literature there is no unity and the state of research and a region of the expanded understanding of information science is most clearly manifested in the separate analysis of concepts of computing and of notions of computer science. When comparing it becomes possible to find some deserving interest area, and its characterization is explored in this paper. As a result, it is able to come to an explanatory system, giving rise to an analysis of contemporary issues, and develop formulation and the approach to the problem of expansion and development of an improved understanding of the conceptual foundations of computer science. In this paper it is shown that this problem is decomposed to 4 main subtasks.

1. Introduction

This paper argues that a relatively new phenomenon of *computational thinking* gives an interdisciplinary understanding of modern trends in computer science [1].

In interpreting the perspective of computing in modern literature there is no unity and the state of research and a region of the expanded understanding of information science is most clearly manifested in the separate analysis of concepts of computing and of notions of computer science [2]. When comparing it becomes possible to find some deserving interest area, and its characterization is explored in this paper. As a result, it is able to come to an explanatory system, giving rise to an analysis of contemporary issues, and develop formulation and the approach to the problem of expansion and development of an improved understanding of the conceptual foundations of computer science. In this paper it is shown that this problem is decomposed to 4 main subtasks.

First, in the system of foundations the problem of separating the bases of two components: the *basic principles* and *key actions*, or *practices*, is to be solved. *Basic principles* are the statements and descriptions of immutable laws and recurrence relations that shape and constrain all the computing technology. *Basic practices* are the skill field and abilities, in which specialists in the computations can show different levels of performance type: beginner, competent, and experienced.

Second, a degree of irreducibility of computing to a combination of notions on the basis of full or partial borrowing conceptual foundations of mathematics, science or engineering, and transferring it to the area of computing is under the estimation. Since computing as an area is in its infancy, then it requires the development of more private conceptual basis that is consistent with the observed facts and phenomena and having predictive power.

Third, the necessary extent expansion of known concepts, leading to the requirement for the formation of an improved and updated "computational thinking" is under analysis. Computational thinking can be regarded either as a style of thought organization, which encompasses known practices, or as independent practice. It is understood as the ability to interpret the world in the form of algorithmically driven transformations, which algorithmically controlled by the transformations of inputs into outputs.

Fourthly, an idea of objects, their interaction with environment, based on the new requirements for "computational thinking" is forming. Thus the explanatory system is formed and piloted for the study of both natural and artificial information processes.

The results of this interdisciplinary analysis are used in the educational practice in NRNU MEPhI and MIPT. Computational thinking has to be a fundamental part of the way not only specialists in Information Technologies but the people think and understand today's world [3].

2. An approach to computation modeling

There is a practical need in developing of methodology and characterization of the fundamental bases of computer science from the standpoint of ideas about the *computational process*. The computational process appears to be a basic building block of computing, and this is based on common principles and practices, as well as the dynamics of their relationship, which will express the area of computer science as a field of science, based on deep and enduring fundamental principles. In today's world computer science is increasingly beginning to play a key role, providing multiple and highly dynamic connection between science, technology and society.

2.1 Computing as activities

The most fundamental concept in computer science considered the computation performed on the computer -- computing. Computing is also considered as activities aimed at the development and application of computerized part of the information technology [1].

2.1.1 Area and discipline of computing
Computing area is assumed as generalized area of knowledge, which includes computer science, software engineering, design of hardware platforms and other disciplines, somehow related to information technology. The discipline of computing usually refers to systematic study of algorithmic processes of information descriptions and transformation.

2.1.2 Lack of a narrow understanding of computing
Such a standpoint, deliberately narrowed to frames of engineering, for observing the computing is clearly insufficient. Such a narrow interpretation currently leads to damage in the implementation of innovation, doing research in science and technology development. This is reflected not only in the development and financing of education and research, but also on the attitude of the society to computing, as well as on the choice of direction for young generation career growth.

2.2 The need for computing own grounds

There is an urgent need to develop own computing bases. The current situation highlights the apparent lack of full or partial borrowing conceptual foundations of mathematics, science or engineering, and transferring it to the area of computing [2]. Since

the computing area itself is in its infancy, then it requires the development of more private conceptual basis that is consistent with the observed facts and phenomena and having predictive power [3]. For example, Web-science requires systematic application of partially defined functions, a special understanding of the domains on which variables range, intensive development of the descriptions apparatus, etc. Information processes require consideration of functions as processes regardless of prior ascertain their domains and/or ranges, as is customary in ordinary mathematical practice.

The accumulated to date results in the application of computing, confirm a necessity to establish its widespread expanded understanding and development of improved conceptual framework. An importance of computing in the structure of modern society, its essential interdisciplinarity, its key role in assessing the dynamics of the relationship of science, technology and society, poor drafting its logical and methodological bases indicate the urgency of establishing the expansion and development of an improved understanding of the conceptual foundations of computer science.

3. Proposed methods and approach

The proposed method of research computing with objects is as follows. The logical and philosophical concepts are selected and developed of: interaction of objects with each other; the interaction; the interaction of objects with the environment.
Each of these representations is understood as follows.

(1) *The interaction of objects with each other*. The very idea of the object is developed. This is studied in the framework of applicative computational systems, models and technologies with the least possible today formal constraints.

(1') *The interaction*. The representation of interaction as such is developed, that in the world practice today is essentially unstudied question.

(2) *The interaction of objects with the environment* (i.e., the environment of "computation", of result formation, and the like). Thus it is necessary to develop a representation of the environment itself. This is studied in the framework of semantics of applicative computational systems, in particular, in semantics of programming language constructs and, in a part, in semantic networks.

The proposed approach to the *construction of an explanatory system* for computations with objects is as follows. The principle of "natural explanation" is formulated and adopted. An idea to explain the objects and their behavior *naturally* requires the adoption of certain principles. Then, based on the principles, *explanatory system* is developed. It is necessary to select the central beliefs that will fully characterize the range of the effects, in this case the *computational* ones. So, there is the entity -- *object*, -- and another entity -- *environment*.
Object interacts with the environment so that the result of evaluation *is placed* in the environment. On the other hand object in the interaction with the environment receives from it the values and/or parameters.

The proposed approach to understanding the *structuring of environment* is as follows. The structure of the environment should cause quite comfortable feeling: this is the place where the values of the objects are stored. Hypothetically, the environment is a universe where there is a "deep" part and "peripheral" part. The details of the deep one are unknown, but its structure can make a reasonable assumption. Peripheral part, to the contrary, is good "seeing" and not only its structure is known, but also all of its components.

Expected results and overall work plan are following. Overall task is an ongoing project. Work on the project is broken down into three annual stages. In general, based on ideas about the interaction, the "process interpretation" of information processes is developed, reflecting the current understanding of implementation research.

The result of steps 1-3 is a series of articles, and the general result is the preparation of the monograph material and preparation of software allowing to assess modeling of object interaction and their interaction with the environment.

(Step 1) The first stage attempts to express computer science as a field of science which is based on deep and enduring fundamental principles. The system has two components: the *basic principles* and the *main actions*, or *practices*.

Basic principles are the statements and descriptions of immutable laws and recurrence relations that shape and constrain all the computational technology. They can be summarized in seven categories: - computation, - communication, - coordination, - reorganization, - automation, - evaluation, - designing (Table 1).

Table 1. Basic categories for a science of computer science

Category No	Category Formulation
1	Computation
2	Communication
3	Coordination
4	Reorganization
5	Automation
6	Evaluation
7	Designing

This is not necessarily mutually exclusive groups of principles, but windows that give specific perspectives relating to the computation. For example, the Internet is a technology that derives its operating principles, above all, from communication, coordination and reorganization, and its architecture is derived from design and evaluation.

*Basic practice*s give the field of skills and abilities, in which specialists in the computations can show different type levels of their performance: the beginner, competent, and experienced ones. There are four basic practices: - programming, - development of systems, - modeling, - application.

Computational thinking can be regarded either as a style of thought organization, which encompasses known practice or as a fifth practice. It is understood as the ability to interpret the world in the form of algorithmically driven transformations, which algorithmically controlled by transformations of inputs into outputs.

(Step 2) In the second stage, the answer to the question why the computation, -- computing, -- is much wider than programming. This is in connection with the analysis of a kind of movement that became known as "computational thinking".

By its supporters the computational thinking is assumed as a new way to characterize what is the core research direction, the lever to reduce the number of studying the computer science and argument in favor of the adoption of computer science as a le-

gitimate field of science. This movement is controlled in accordance with a plan to implement the four main objectives, listed in Table 2:
- the inclusion of computer science in the science (as a partner on equal terms, rather than as software);
- finding out the ways to make computer science more attractive in the eyes of students specializing in it, and in the eyes of others, located in adjacent scientific fields;
- revival of ongoing research deeper issues inherent in computer science [8,9];
- displaying fundamentality of computation that often in most cases cannot be eliminated, the efforts made to turn this understanding into faith.

Table 2. Main direction of evolving the computational thinking.

Direction No	Direction Formulation
1	The inclusion of computer science in the science (as a partner on equal terms, rather than as software)
2	Finding out the ways to make computer science more attractive in the eyes of students specializing in it, and in the eyes of others, located in adjacent scientific fields
3	Revival of ongoing research deeper issues inherent in computer science
4	Displaying fundamentality of computation that often in most cases cannot be eliminated, the efforts made to turn this understanding into faith

(Step 3) The third step is working on the formulation of general principles, using which one can try to respond to the still unresolved question: "What is computer science?".
Experts take care of that movement for computing thinking movement is not engaged solely in the minds of people fixing a narrow understanding of this trend, but to emerging needs in such thinking, coming from other disciplines or from people to be raised. There is concern that there is no going beyond a predetermined package, and very understanding is just wrapped in new paper and a new bandage tape.
In this regard, of particular interest are two *key questions*:
- whether computing thinking is a unique and distinctive characteristic of science,
- whether computational thinking is an adequate characteristic of science.
Apparently, both of these questions need to give a negative answer. But in structures, surrounding the basic principles of science, when trying to answer them, everything is vice versa, and these questions have to give a positive response. This is sufficient reason for the deep divisions accompanied by discussions. This is due to the inadequacy of the name itself.

4. Expanded understanding of computer science and related works

The subtasks above, in couple, can give solving the problems. Each of them, separately, is important for science, technology and society, seen in conjunction. Their importance, relevance and novelty are confirmed by the latest discoveries. Over the last decade in studies in other fields of knowledge the *natural information processes* have

been discovered, confirming the independent status of computing/computer science as a science.

Older definition of science as "the study of phenomena surrounding computers", which was given by A. Perlis , G. Forsythe and A. Newell, and dates back to around the year 1970, gives "the study of information processes, natural and artificial". Shift in the direction of the computer as an object of research on the computer as a tool enables us to re-engage deep questions of our knowledge, presented in a new light when the computation is considered a lens through which one examines the world [4].

Another aspect of novelty is in detecting irreducibility of computing/computer science to mathematics or engineering. This stemmed from the recognition that computing is a unique combination of paradigms of mathematics, science and engineering. It is a combination of a compound and, since none of these paradigms is not individually explaining and did not cover the entire field of computing [2].

In the foundations of mathematics and theoretical computer science for a long-established tradition of objects treated as abstract entities, endowed with certain properties. Among the most profound attempts to analyze objects and ways to manipulate them, determining their fundamental role for logic and philosophy is especially important for modern science to recognize the contribution of M. Schoenfinkel, H. Curry and D. Scott. As part of the research program H. Curry [5] received justification of logic and philosophy approach of operating objects based on a single metaoperator of *application* allowing the action of one object to another. Objects, occurring in the systems, form the *applicative computational system* (ASC) and the direction of research spawned in the 1940s -- 1960s a whole range of scientific schools worldwide. As is known, a direct attempt to build the logic on this basis leads to contradictions, the most famous of which is the Curry's paradox.

The most successful attempt to overcome this difficulty were methodological conceptions of D. Scott, who proposed in the 1970s build a system of objects in continuous lattices endowed with a special topology [6,7]. The *theory of computation* built on this basis gave growth to scientific discipline called *semantics of programs*, and D. Scott for his contribution to the development of logical and methodological foundations of computer science was awarded the Turing Award.

Appearance and, in particular, the development of computer science in modern times with special urgency is raising the question about the objects, but in the context of the avalanche growth of information technologies and their achievements, and their impact on science and society in general. In the field of computer science, applicative computing systems, or ASC, play a great role, which is relatively new phenomenon to science and technology. It has been proved in ASC [8,9] that the objects behave as functional entities, having the following features: (1) arity, or number of argument places for object is not fixed in advance, but displays itself gradually, in interactions with other objects; (2) in combining of a composite object, one of the original objects – function, -- is applied to the other one -- the argument, -- and in other contexts, they can turn their roles, that is, functions and arguments are treated as objects on equal rights; (3) self-applicability of functions is permitted, that is the function can be applied to itself.

Such methodological setting helps producing a unified view of artificial and natural information processes, which gives an element of novelty. As can be shown, with the

approach overcomes the disadvantages of Schoenfinkel-Curry's system, contributing to the development of "computational thinking" for the extended area of knowledge.

Finally, the analysis and accommodation of computational thinking to modern conditions also characterizes the novelty of perspective project. Already in 1975 the Nobel Prize in Physics Ken Wilson put forward the idea that the modeling and computation became a full way of doing research that was previously unavailable. K. Wilson discoveries were made on the basis of computational models, the use of which led to a radical change in the understanding of phase transitions in materials. At the beginning of the 1980s he teamed up with other leading scientists from other fields of knowledge, who believed that the major scientific problems can be solved on the basis of computations and asked the government to expedite the process of creating a network of supercomputer centers [4]. They argued that the computation was the third pillar of science, along with the traditional theory and experiment. In their deliberations, the term "computational thinking" was used. The observed motion of computer science (computational science), eventually grew into a huge interagency initiative of high performance computations (HPC), culminating in the US Congress bill funding initiatives HPC in 1991.

This movement has confirmed that both the ideas of computation and computational thinking are essential for the development of science. This gave rise to a powerful political movement, which included this performance, e.g., in US federal law. In our country, such initiatives are also known, some of which are included in the priority list of areas of science and technology of RF.

5. Conclusion

This is a review paper on ongoing project aimed to expanding the range of understanding the computer science.

1. As was shown, the observed motion of computer science (computational science), eventually grew into a huge interagency initiatives of governmental level. To succeed the modern computer science people need using the computational thinking as a means to turn computer science to a full scope science. This could be achieved using the ideas of natural computation where data objects can be observed as the information processes.

2. This general task can be easier achieved when decomposing the problem to 4 main subtasks. Briefly, they are: basic principles as a couple of basic principles and basic practices; self standing conceptual foundations; improved understanding of computational thinking; understanding data objects as information processes.

The question for future study was earlier debated as whether the computing assigns to the field of engineering or science. There is a need to overcome the limitations of narrow understanding of computing.

6. Acknowledgement

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COMPARATIVE INVESTIGATION OF THE WELFARE OF THE POPULATION BASED ON THE DATA OF THE KRASNOYARSK AND STAVROPOL REGIONS BY REGRESSION MODEL

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Abstract. The article touches upon the issue of well-being of population in the different part of the Russian Federation. Much attention is given to the construction of econometric regression models for these subjects of the Russian Federation as the Krasnoyarsk and Stavropol Territory. The article gives a detailed analysis of the impact of various factors on life expectancy. There is a comparative characteristic of the results of the investigation. There are the conclusions and recommendations based on the values of predictive features.

1. Introduction

Today's world focuses on the challenges related to human development, human factor in general. Of course, quite a lot of attention is paid to life expectancy, since this fig-

ure is an indicator in assessing the degree of development of the country. Today, many countries, as well as parts of the country thinking about how and what methods may increase the named parameter.

The purpose of this paper is the construction of econometric regression models parts of Russia, such as Krasnoyarsk region (Siberian Federal District) and the Stavropol region (North-Caucasian Federal District); comparison of welfare of the population of subjects of the Russian Federation, by analyzing the impact of various factors on life expectancy.

By way of subjects of the Federation mentioned subjects were chosen, as they are comparable in terms of population: Krasnoyarsk region - 2851757 ppl. [1], Stavropol Territory - 2,794,500 ppl. [2].

2. Construction of econometric models of well-being

In constructing the resulting factor to influence all other factors life expectancy was chosen. The factors that can affect the well-being of population, as well as factors that will be components of an econometric regression model, the following were selected: GDP per capita, the incidence per 1,000 population, the most common emissions of air pollutants (thnd tons) and CPI.

Comparison criteria were selected on the basis of available information sources. The sample set consists of 49 items, which includes data for each quarter in the time span from 2000 to 2012. The number of sample elements exceeds the number of factors is almost ten times that speaks about the reliability of the regression model.

2.1 Construction of the model for the subject of the Russian Federation Stavropol region

In analyzing the data of the Stavropol Territory has received the following multiple regression equation:

$$Y = 55,06765 + 1,99E-05 * x1 + 0,02265 * x2 - 0,08161 * x3 + 0,058617 * x4,$$

There are explanations: x1 – GDP per capita;

x2 – The incidence per 1,000 population;

x3 – The most common emissions of air pollutants (thnd tons)

x4 – CPI (Consumer price index);

P-values for all of the analyzed factors in this case do not exceed 5% at levels of reliability model equal to 95%. Therefore, all the factors are significant, and there is no need to exclude any factors.

From this model it follows that the GRP has no significant effect on life expectancy and changes in proportion to the welfare indicator by an insignificant amount. Greatest importance in assessing welfare is the most common criterion for emissions of air pollutants that, but its effect is inversely proportional to that common sense. Also quite the impact of this criterion as the incidence per 1,000 populations.

Next, you need to build graphics - dependence on the time factor variables, as well as determine the trend - the trend of the time factor for the accuracy of the fit of a particular model. Accuracy and quality of the selected model can be determined by referring to the coefficient of determination [0, 1]. Define the direction of trends of all factors of multiple regressions.

GDP per capita. As the trend line for such factors as the GRP was chosen second-degree polynomial, since the coefficient of determination in this case is the maximum - 0.9959, respectively. This model is described by the equation $y = 36,986 x2 +1017,9 x +17985$. Trend line indicates that the GDP per capita of the subject will increase over the next years.

$$y = 36{,}986x^2 + 1017{,}9x + 17985$$
$$R^2 = 0{,}9959$$
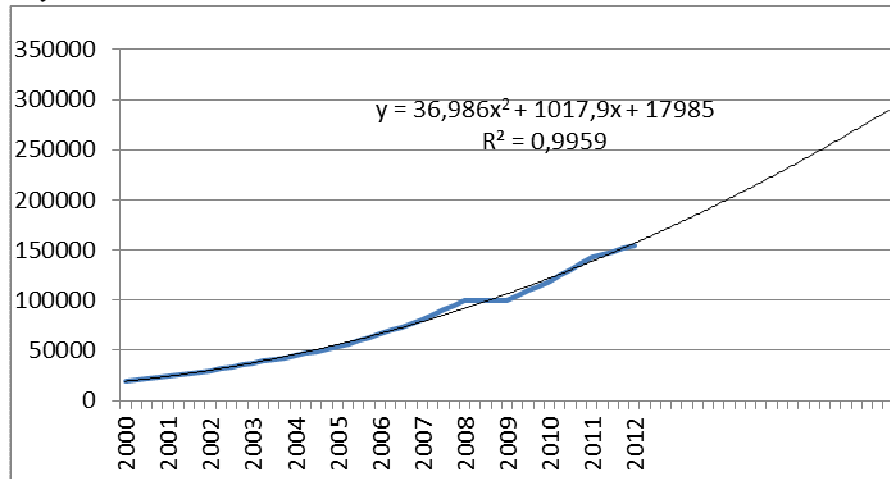
Fig. 1. The changes of the GDP per capita in the Stavropol region between 2000 and 2012

$$y = 0{,}0752x^2 - 2{,}2705x + 517{,}22$$
$$R^2 = 0{,}9417$$
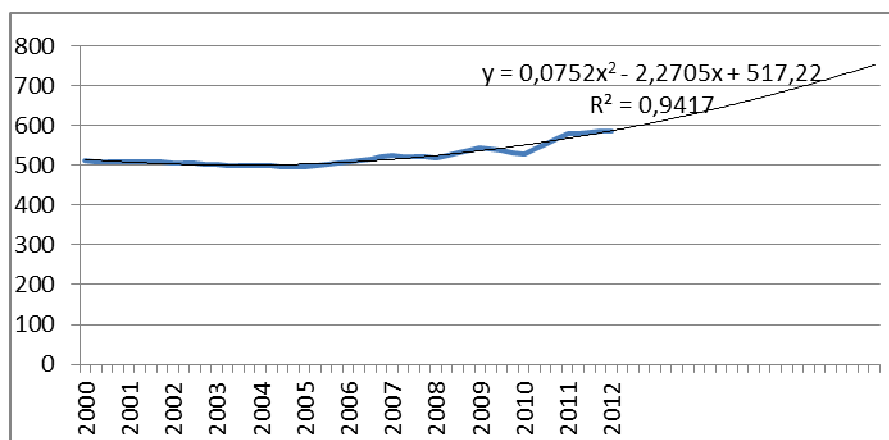
Fig. 2. The changes of the population morbidity in the Stavropol region between 2000 and 2012

Incidence per 1000 people. Another factor is the disease of the population in the Stavropol Territory in 1000 ppl. In this case, second-degree polynomial was also selected as a trend.The equation describing the model $y = 0.0752 * x2-2.2705x2 +517.22$. Judging by the forecast value of the number of cases of the population, but it is real enough; the incidence of various diseases will increase. It is necessary to pay attention to when looking for ways and methods that contribute to an increase in life expectancy.
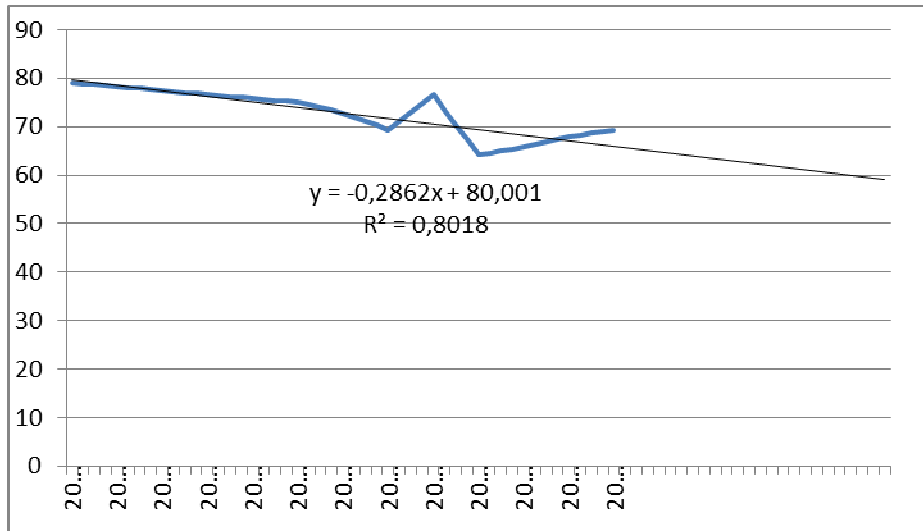
Fig. 3. The changes of the emissions of the most common air pollutants in the Stavropol region between 2000 and 2012
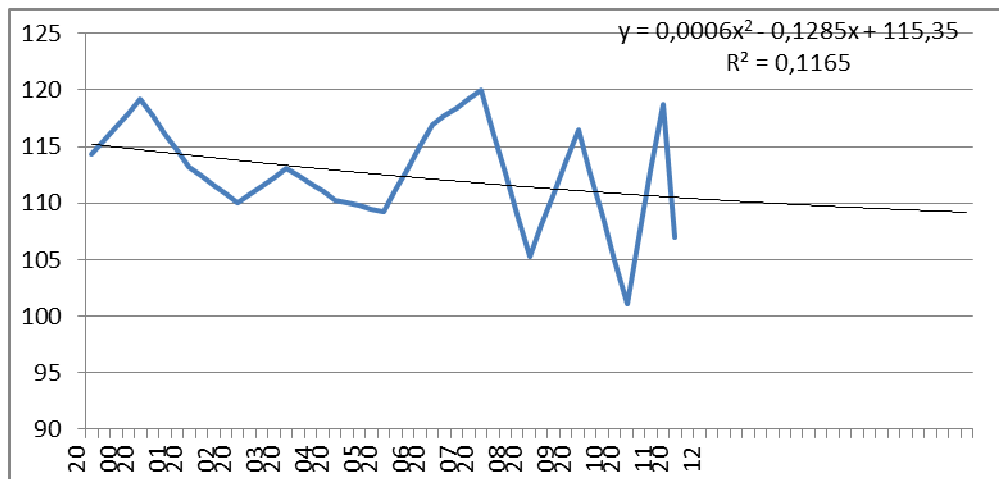
Fig. 4. The changes of the consumer price index in the Krasnoyarsk Territory between 2000 and 2012

Emissions of the most common air pollutants (thousand tonnes). For this indicator as a trend line was selected linear trend function, as it is more consistent with the actual situation. Forecasted the trend reflects the real situation is observed not only in the analyzed region of Russia, but also in other regions. Certainly, the power thinks about how to reduce emissions, but, nevertheless, as can be seen in the graph, the number of emissions increases. Paying attention to this figure as the basis of the above regression equation for the Stavropol region, this factor has the greatest impact on life expectancy of all the factors presented. Recall that the relationship of this factor with effective feature is inversely proportional to that we show the coefficient of the regression equation - (-0.08161).

Consumer Price Index. As for the consumer price index, in this case, the value of reliability of approximation model is rather low - the coefficient of determination is 0.1165. As the trend line was selected second-degree polynomial. According to the forecast value can be concluded that the CPI will undergo changes, but overall will decline.

Thus, it is necessary to build a graph showing the predicted values of life expectancy for the Stavropol Territory:
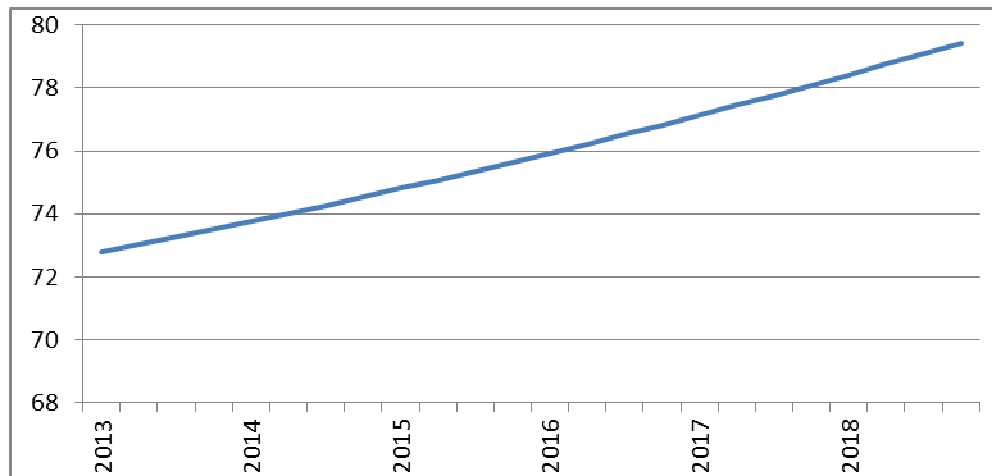
Fig. 5. Forecasted values of life expectancy in the Stavropol region for the next 8 years

Based on the model, we can conclude that in the Stavropol region in the presence of the factors considered and their impact on the score will be a sign of a positive trend - an increase in life expectancy.

2.2 Creating a regression model for the well-being of the Krasnoyarsk Territory

In the analysis of statistical data in the Krasnoyarsk Territory has received the following multiple regression model

$$Y = 38,5932 + 1,71E\text{-}05x_1 + 0,006619x_2 - 0,00354x_3 + 0,152853X_4$$

Where, X1- GDP per capita
X2 - population incidence
X3 - Emissions of the most common air pollutants (thousand tones)
X4 - consumer price index (relative to the end of the previous year).
This model suggests a direct dependence of all the factor variables except for emission to the environment. P-values in the table are obtained regression 2,81 E-21; 6,64 E-05; 0.025986; 3,15 E-06 (less than 5%) at 95% confidence level, which also speaks about the suitability of the above model for applied calculations. The coefficient of determination (R^2) is equal to 0.971757, which also indicates a high level of fit. In the constructed model, all factors are significant, despite the difference between the values of the coefficients of factor variables as to consider the effect of scaling.
In the course of further research according to the factors of time parameters have been built. Analysis is to ensure that a trend line for each factor variable, choosing the most appropriate function, trace forecast values of all the criteria to 2020 and forecast values to build a productive attribute in which in this case is the average life expectancy.

GRP per capita When constructing a trend line in terms of GDP per capita the most appropriate model is the following third degree polynomial function $y = -2{,}6091 x^3 + 302{,}32 x^2 - 1140{,}3 x + 72037$, which was selected on the basis of values of the coefficient of determination $R^2 = 0{,}9829$. There are significant deviations between 2008 and 2010, which is a consequence of the economic crisis. Trend line, built on eight years ahead, indicates a gradual rise of this indicator since the slowdown.
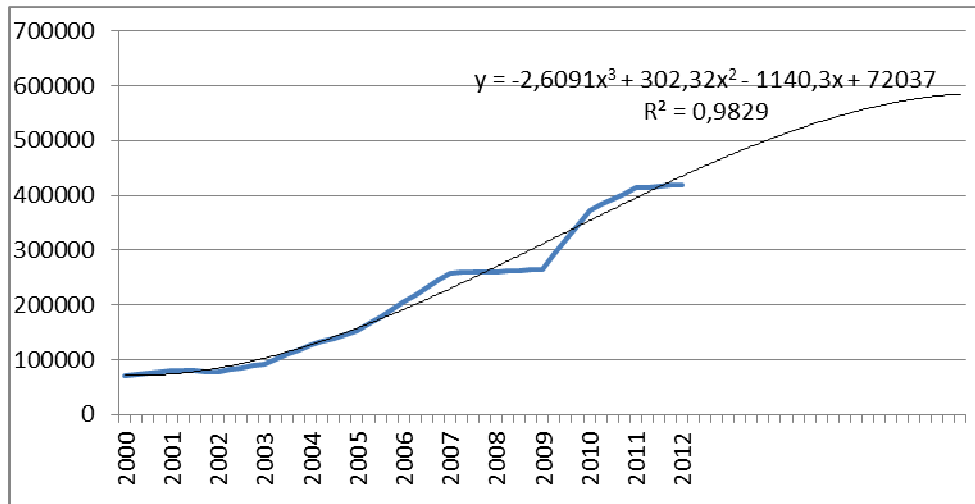
Fig. 6. The changes of the GDP per capita in the Krasnoyarsk Territory between 2000 and 2012

Population morbidity. In analyzing the effect of the incidence rate it is appropriate to consider several cases. Highest coefficient of determination $R^2 = 0{,}9455$ achieved in establishing the trend line a third degree polynomial. However, following common sense, the incidence of the population cannot decline sharply in subsequent periods. So power function as the trend line was also reflected $y = 1848{,}5x^{0{,}0628}$, more realistically reflect the situation, namely the increasing incidence at low rates.
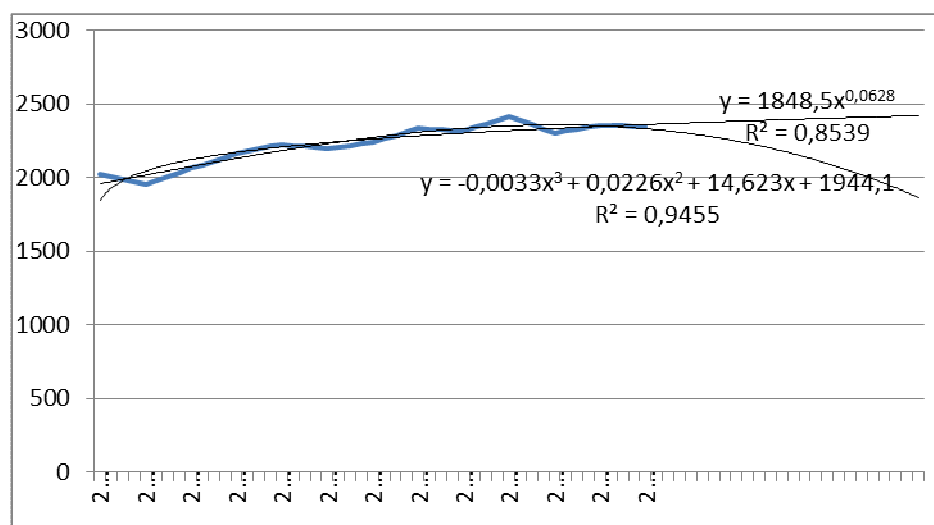
Fig. 7. The changes of the population morbidity in the Krasnoyarsk Territory between 2000 and 2012

Emissions of the most common air pollutants. In the analysis of this factor there are big jumps, so the highest coefficient of determination, which can be achieved, does not exceed 0.5708. In this case, the subsequent periods will be described third-degree polynomial $y = 0,0011 x3 + 0,1 x2 - 8,8134 x + 2619,1$. Therefore, in this case for the analysis we should take advantage of the latest data (2006 to 2012). In general, the value of future periods of this factor will increase.
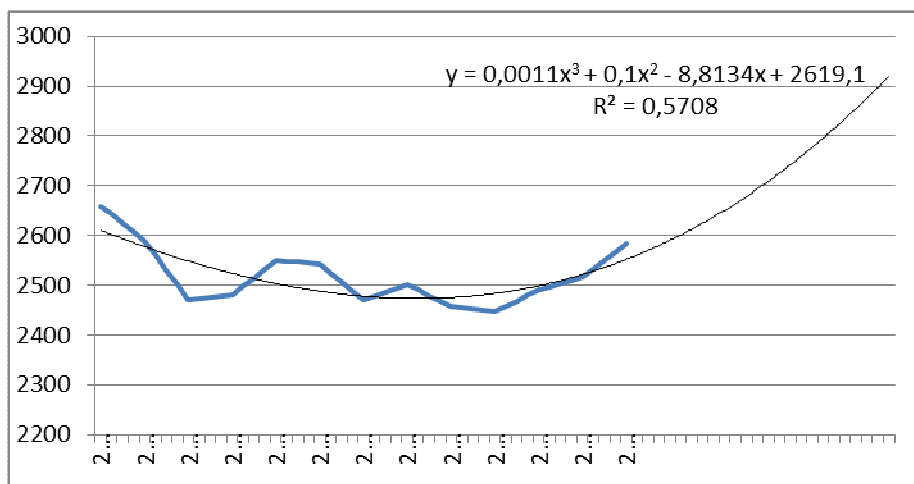
Fig. 8. The changes of the emissions of the most common air pollutants in the Krasnoyarsk Territory between 2000 and 2012

Thus, it allows making the model more accurate. In this case, a second-degree polynomial $y = 0,749 x2 - 11,787 x + 2504,8$ is used with the coefficient of determination $R^2 = 0,969$, which is valid for accurate forecasts. Both of the above graphs indicate a rapid increase in emissions.
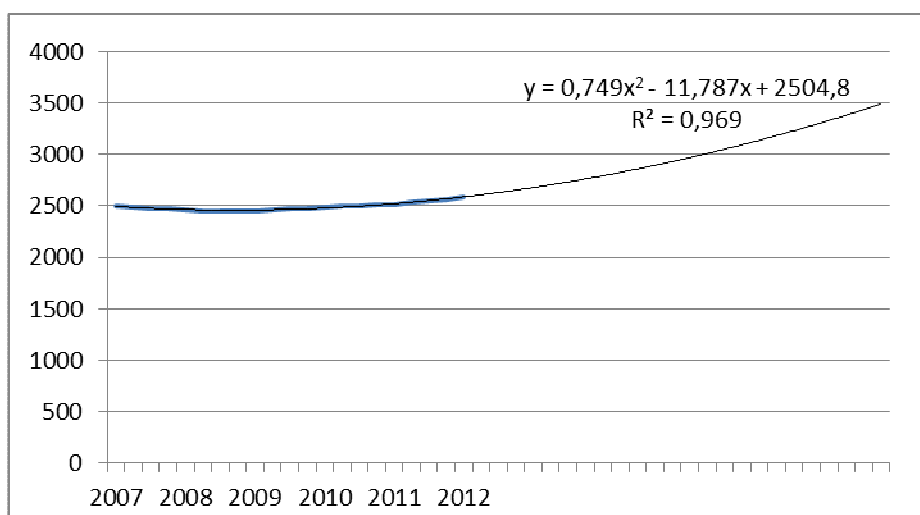
Fig. 9. The changes of the emissions of the most common air pollutants in the Krasnoyarsk Territory between 2006 and 2012

Consumer price index. In the analysis of the consumer price index was also taken of the third degree polynomial function y= -0,0003 x^3 + 0,0291 x^2 - 1,211 x + 126,4 to determine the predictive values. R^2 value is valid. There is a trend to reduce this figure.
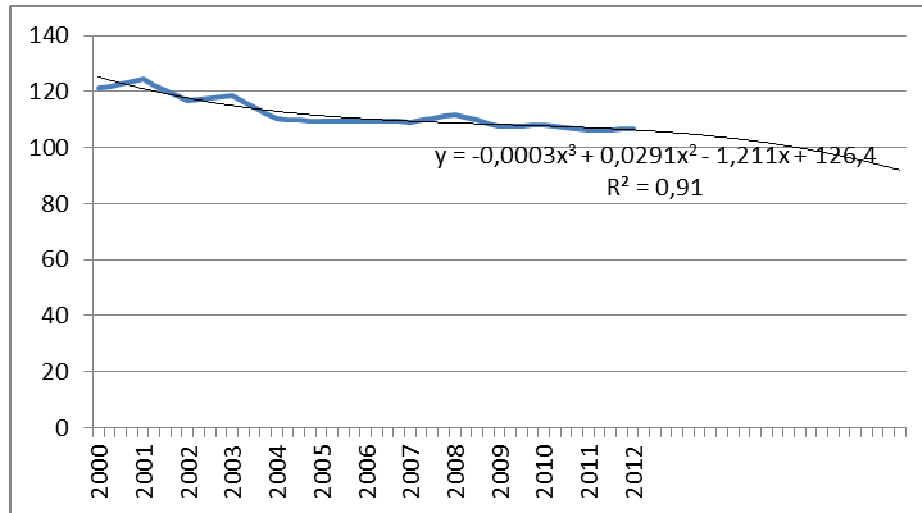
Fig.10. The changes of the consumer price index in the Krasnoyarsk Territory between 2000 and 2012

Thus, the study of the four factors that influence the well-being of the population, predicted values of life expectancy were obtained in the Krasnoyarsk Territory for the next 8 years.
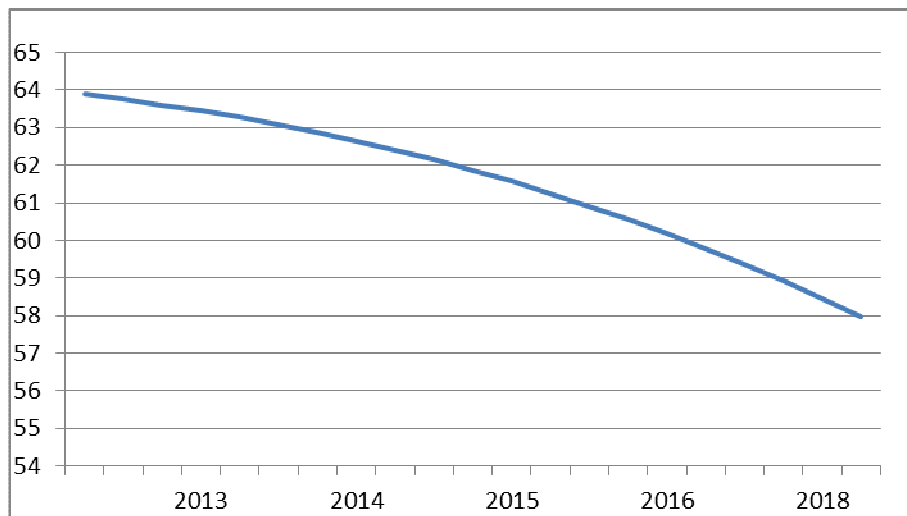
Fig. 11. Forecasted values of life expectancy in the Krasnoyarsk Territory for the next 8 years

It is important to say that the outlook is not reassuring. Predictive values are gradually declining, falling below 50 years. This is affected by:

1) Negative dependence factor variable emissions and at the same time a positive trend in this indicator;

2) The consumer price index, which increases in the model   and statistical significance of this factor is reducing;

3) Reduction in the incidence of that model has a direct relationship with life expectancy.

3. Conclusion

Thus, based on the foregoing investigation, the following conclusions:

• Initially, the population of the two entities of the Russian Federation is comparable, but different trends are vital: in the Krasnoyarsk Territory population declines throughout the period from 2000 to 2012, and in the Stavropol Territory population increases;

• With regard to life expectancy, in the Stavropol region these figures initially surpassed values Krasnoyarsk Territory;

• Incidence rates of Stavropol Territory is almost four times lower than in the Krasnoyarsk Territory;

• There are differences between the indices of GDP per capita: in 2000 GRP per capita Krasnoyarsk and Stavropol regions were equal to 71281 and 19600 rubles, respectively, in 2012 - 419586.9 and 154500 rubles.

• Krasnoyarsk Territory has emissions on average 30 times higher than the figure in the Stavropol Territory;

• Regression models have been constructed based on the official data that describe the welfare of the population in different regions of Russia (One of them is located in the Siberian Federal District, and the other is located in the North Caucasus Federal District);

• Completely different forecast values resultant were obtained variable, namely life expectancy, Stavropol and Krasnoyarsk regions. In the first case there is a positive trend in this indicator, in the second case, the forecast is not optimistic.

• It should be noted that at zero values of all factor variables, life expectancy in the Stavropol region is 55 years, in the Krasnoyarsk region is 38 years only, which speaks to the high variability of standards of living in different regions of Russia.

• Differences in the dynamics of indicators such as morbidity, emissions of harmful substances into the atmosphere, and the consumer price index influence at such a difference in terms of efficiency characteristic;

• Research can have a large practical importance, such as the development of federal programs to increase the level of welfare of the population in different regions of Russia and other countries. Using these tools may have an impact on the life expectancy of the population by acting directly on the factors that are significant in the regression model.

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BETTER LIFE INDEX AS A METHOD OF WELLBEING ASSESSMENT IN SIBERIAN REGIONS

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Abstract. The article considers Better Life Index as a substantial method of assessing people's wellbeing. The advantages and disadvantages of this approach were determined. The authors have interpreted the indicators of Better Life Index with account of Russian statistical system which resulted in the comparative study of people's wellbeing in different regions of the Siberian Federal District. The authors also describe the level of human wellbeing in Tomsk region.

Keywords: Wellbeing, Better Life Index, Measurable indicators, Comparative study.

1. Introduction

The study of dynamics, evaluation of the level of national wellbeing and its forecasting are extremely important for the sustainable, balanced and incremental society development in general.

Wellbeing is a wide, capacious notion which represents complex socioeconomic phenomenon. It combines and includes various characteristics of levels, style and quality of human's life [1]. To a large extent the society wellbeing is defined by its possibilities or potential, which is called national wealth.

The purpose of this research is to find a substantial method, concept, approach of evaluation of people's wellbeing and to apply it for the comparative analysis of the level of social wellbeing in different regions of the Siberian Federal District.

2. Measuring Wellbeing

2.1. International studies

For the complete and sufficient evaluation of the level of people's wellbeing, tangible and intangible aspects of this phenomenon should be considered. These include a wide range of people's lives' characteristics such as income and job, health and longevity, education and career opportunities, safety and law and order, civic engagement and quality of governance, environment, life satisfaction and etc.

In world practice there is a number of indicators designed for estimation and comparison of the level of quality of life and people's wellbeing in different countries. These include: Human Development Index (HDI) composed by the United Nations Organization (UNO);gaining popularity Happy Planet Index (HPI) which was developed by the British think-tank New Economics Foundation; Legatum Prosperity Index - an annual ranking, designed by the Legatum Institute.

Another example of wellbeing indictor is Better Life Index, developed by the Organization for Economic Cooperation and Development (OECD).This index was chosen as a basis for the comparative analysis of the level of people's wellbeing in different regions of the Siberian Federal District.

2.2 Better Life Index: overview

Better Life Index was launched in May 2011 by the OECD's Better Life Initiative. Recent studies (comparative research?) cover the data for 34 OECD member countries as well as Russia and Brazil.

The creators of BLE allocate 11 "dimensions" that reflect what the OECD has identified as essential to wellbeing in terms of material living conditions (housing, income, jobs) and quality of life (community, education, environment, governance, health, life satisfaction, safety and work-life balance). Each topic is built on one to four specific indicators (25 in total) [2]. The data for this research come from official sources such as the OECD or National Accounts, United Nations Statistics, National Statistics Offices. A couple of indicators are based on data from the Gallup World Poll that regularly conducts public opinion polls in more than 140 countries around the world.

However the fundamental difference between this index from other indices is that authors deviate from traditional concept of constructing a composite or synthetic index but rather present a dashboard of 25 headline indicators.

To rank countries creators offer to summarise the information from the 25 headline indicators using a "traffic light" approach. According to this approach, among every indicator the top 20% of countries which show relatively better performance get into the "green zone"; the bottom 20% of countries which show relatively worse performance get into the "red zone" and the middle 60% of countries which show average performance get into the "yellow zone".

Then analyzing each country's performance the authors divide all countries into 3 groups:
- First group of high-performing countries;
- Second group of countries which display average performance;
- Third group of relatively low-performing countries.

The detailed description of the composition of the index, data for the recent research and cross-country analysis can be found in the "How's Life? 2013" – the second edition of a bi-annual report on assessment people's wellbeing in OECD countries and in selected emerging economies.

2.3 Advantages and disadvantages of Better Life Index

Such approach of assessing people's wellbeing – dashboard of indicators + "traffic light" approach – has a number of advantages.

Firstly, the dashboard approach covers a wide range of indicators in every essential sphere of people's wellbeing making this concept a substantial method of assessing people's wellbeing. It also makes possible to distinguish which of 11 aspects of life determine the overall performance of countries.

Secondly, dividing countries into zones allows determining each country's most developed and less developed aspects of people's wellbeing. From this point of view, this approach becomes valuable for the development of economic and social government policy.

Thirdly, "traffic light" approach allows making a comparative study of countries' wellbeing performance. Since this approach is based on relative concept, it enables to determine the country's place in each sphere of wellbeing, compare its performance

with its neighbour's results. But that can be achieved only if the data of the analysis was collected for the same period of time.

However, this method has some *drawbacks*.

The dashboard of indicators builds a more complex picture which is more difficult to understand than a rating of countries, especially for not well-informed users. A table with colourful boxes may confuse users contrary to a simple ranking on integral indicator.

Another difficulty lies in measuring indicators. While some of the indicators are widespread and are calculated in every country (such as personal earnings, employment rate, life expectancy, etc.), others are rarer. For instance, some indicators are based on social surveys, but for some reasons in some countries such surveys are not being held, or if they are, the data collection may be irregular. These provisions worsen the quality of analysis, because in that case, when data for different indicators (or even within indicator) are gathered in different periods of time, the entirety of the research is disturbed.

Also this method doesn't allow determining country's progress in time, since it focuses on relative performances among countries in one particular moment of time. Moreover, since indicators display only outcomes, they don't explain the reasons behind such results and there is no way to predict how performance of each country will change in the future.

Considering all the points mentioned above, Better Life Index was chosen as a basis for the comparative study of people's wellbeing in Siberian regions.

2.4 Comparative study of people's wellbeing in Siberian regions

The first stage of the research involved the selection of analogue indicators. Based on the data of the Federal State Statistics Service of the Russian Federation the following 15 indicators have been selected for the research.

Because of the limitations of Russian statistics facilities, only 15 analogue indicators were chosen in 9 "dimensions" (except for Community and Life Satisfaction). This occurred due to the fact that social surveys determining the level of life satisfaction and quality of support network are held across the country, but not in each region.

The second stage of the research involved compiling the dashboard of indicators (tabl.2). Statistical data used in their search were obtained from official sources such as the Federal State Statistics Service and the Central Election Commission of the Russian Federation.The data were collected for 12 regions in Siberian Federal District for 2012 (except for the dimension "Environment" 2011). Applying "traffic light" approachthe boxes of the dashboard of indicators (tabl.2) were painted respectively: 20% higher-performing regions – light grey; 20% low-performing regions – dark grey; 60% average-performing regions – white. According to that concept, all the regions were divided into 3 groups:

- First group of high-performing regions. Region-leaders are Novosibirsk Region and Krasnoyarsk Territory, as well as Kemerovo Region and Omsk Region.

- Second group of regions which display average performance. Leaders of this group are Republic of Khakassia and Republic of Altai followed by Irkutsk Region, Republic of Buryatia, Altai Territory and Tomsk region.

- Third group of low-performing regions. More than a half of indicators of people's wellbeing in Republic of Tuva turn up relatively lower than the same indicators in other Siberian regions. Trans-Baikal Territory

Table 2. Analogue indicators for the comparative study of people's wellbeing in Siberian regions.

Dimension	Indicator	Definition
Housing	Dwellings with basic facilities	The percentage of the dwellings with drainage of total number of dwellings, [%]
	Housing expenditure	Expenditure of households in housing and maintenance of the house as a percentage of the household gross adjusted disposable income, [%]
	Average residential premises	The total square of a dwelling divided by the number of persons living in the dwelling, [m2]
Income	Household disposable income	Household disposable income divided by the number of persons of the household per month, [rub]
Jobs	Employment rate	It is the number of employed persons aged 15 to 72 over the population of the same age, [%]
	Personal earnings	Average monthly wages per full-time equivalent dependent employee, [rub.]
	Long-term unemployment rate	The number of persons who have been unemployed for one year or more as a percentage of the labour force, [%]
Education	Employed in the economy with high education	The number of employed in the economy with high education over the total employment, [%]
Environment	Air quality	The number of air samples exceeding MPC air pollutants over total number of air samples, [%]
	Provision of clean drinking water	The number of water samples with safe and conditionally safe drinking water over the total number of water samples, [%]
Civic engagement	Voter turnout	Ratio between the number of individuals that cast a ballot during an election of President of Russian Federation in 2012 to the population registered to vote, [%]
Health	Life expectancy at birth	Number of years to be lived by a person from a birth, assuming the mortality level for every age remains the same as in the years for which the rate is calculated
	Population morbidity	The number of recorded cases of patients with first diagnosis in life, per 1,000 population
Safety	Assault rate	The number of crimes associated with violent acts against victims per 1,000 population
Work-Life Balance	Average weekly hours	Average actual weekly working hours

Table 2. Dashboard of indicators of people's wellbeing in Siberian regions.

Dimension	Housing			Income		Jobs		Education
Indicator	Dwellings with basic facilities	Housing expenditure	Average residential premises	Household disposable income	Employment rate	Personal earnings	Long-term unemployment rate	Employed in the economy with high education
Republic of Altai	32,1	10,89	18,9	14246,6	89,9	14278	4,1	29,9
Republic of Buryatia	48,9	11,75	20,2	11912	92	17119	2,2	27,4
Republic of Tuva	36,3	9,36	13,2	10857,5	81,7	11933	10,9	35,7
Republic of Khakassia	66,5	9,23	21,6	17538,4	92,3	15991	2,5	24,4
Altai Territory	64,9	11,35	22,4	14209,1	93,8	13629	2,6	20,7
Trans-Baikal Territory	49,5	11,92	20	15993,6	89,5	17336	4,4	21,9
Krasnoyarsk Territory	71	10,5	22,9	23211,1	95,5	22138	0,9	26,7
Irkutsk Region	66,4	10,16	22,1	16566,2	92,1	17720	2,2	25,9
Kemerovo Region	71,9	11,5	22,7	15193	93	18386	2,2	23,5
Novosibirsk Region	74,5	11,87	22,2	16264,3	94,4	20637	1,7	31,7
Omsk Region	65,2	11,67	23,2	15499,4	93,1	19469	1,5	26
Tomsk Region	70,8	12,23	22,2	17468,6	91,7	17876	2,8	31,3
Average level	59,83	11,04	20,97	15746,65	91,58	17209,3	3,17	27,09

Dimension	Environment		Civic engagement	Health		Safety	Work-Life Balance
Indicator	Air quality	Provision of clean drinking water	Voter turn-out	Life expectancy at birth	Population morbidity	Assault rate	Average weekly hours
Republic of Altai	0,32	100	67,2	66,8	885,2	5,53	36,28
Republic of Buryatia	13,15	70,6	66,2	66,79	654,8	4,96	38,18
Republic of Tuva	-	81,2	93,1	61,09	622,4	5,69	39,92
Republic of Khakassia	10,47	48,8	64,7	67,64	834,1	3,21	38,05
Altai Territory	3,41	89,3	59	69,11	1087,5	3,27	36,70
Trans-Baikal Territory	26,8	97,8	59,3	66,24	737,5	5,74	37,90
Krasnoyarsk Territory	5,26	79,6	59,5	68,42	825,8	3,33	38,19
Irkutsk Region	1,5	94,3	56	66,32	920,6	4,42	38,33
Kemerovo Region	1,96	96,5	79	66,76	818,5	5,52	38,19
Novosibirsk Region	1,17	67,7	63,2	69,72	722,2	2,76	38,16
Omsk Region	0,65	67,8	61,6	69,25	960,5	2,73	37,61
Tomsk Region	1,37	48,5	58,2	70,07	708,7	3,19	39,38
Average level	5,51	78,51	65,58	67,35	814,82	4,20	38,07

2.5 Analysis of Tomsk region's performance

In general Tomsk region displays relatively average performance among Siberian regions with 8 indicators in average "yellow" zone, 3 in the higher "green" zone and 4 in lower "red" zone.

In the dimension "Housing" the region shows higher results than district: mean 70.8% of all dwellings equipped with drainage while the average level is 58.3%. In average in the region there is 22.2 m^2 of living space per capita against 20.97 m^2 in average in the district. However housing expenditure is the highest in the Siberian Federal District – households spend 12.2% of their income for paying water, electricity, gas and other bills and maintenance of the house.

The level of the household at disposable income – in average 17 468.6 rub. per member of the household – is the third highest in the district, after the absolute leader Krasnoyarsk Territory (23211.1 rub.) and Republic of Khakassia (17538.4 rub). That position can be explained by the fact that majority of the population in Tomsk region works in the profitable oil and fags sphere.

Even though all the indicators of the dimension "Jobs" ended up in the "yellow" zone, they are still higher than district average levels: average monthly wage is 17876 rub. in the region which is

slightly higher than district level of 17209 rub.; employment rate is just above the average level with 91.7% against 91.58%. The long-term unemployment rate – 2.8% – is lower in Tomsk region than average in district – 3.17%. These comparisons allow concluding that this aspect of people's wellbeing is developed well in Tomsk region than in average in other Siberian regions.

Almost every third worker in Tomsk region has at least one university degree. The region ranks third among other regions on this indicator, which can be explained by the fact that there are six only state universities in the region centre.

As for the "Environment", the air quality in the region is higher than in average in the district with only 1.37% of samples exceeding MPC air pollutants against 5.5%. On the other hand, the quality of water is the lowest among Siberian regions with only 48.5% samples turn out to be with safe and conditionally safe drinking water.

The population of Tomsk region shows low interest in civic engagement. Only 58% of the population registered to vote casted a ballot during an election of President of Russian Federation in 2012. Only Irkutsk regions howed lower voter turnout – 56 %.

In Tomsk region the life expectancy at birth is the longest among Siberian regions – 70 years. Also the level of population morbidity is lower than average: 708.7 recorded cases of patients with first diagnosis in life per 1,000 populations against average 814.8. These facts indicate the high quality of the public health service in the region.

In terms of safety Tomsk region is a rather peaceful region with assault rate 3.19 crimes per 1000 population while the average level is 4.2.

In the region average actual weekly working hours amount 39.4 hours per week which is the second highest result in the Siberian district. It describes the fact that work-life balance is shifted towards work.

Overall, the highest results Tomsk region displays in following dimensions: income, education and health; average performance in housing, jobs and safety; less-developed

aspects of people's wellbeing are environment, civic engagement and work-life balance.

3   Conclusion

This research – the interpretation of the indicators of Better Life Index with account of Russian statistical facility and further comparative study of people's wellbeing in different regions of the Siberian Federal District – turn out to be shifted towards material conditions of life. The lack of data for dimensions "Community" and "Life satisfaction" to some degree deprived the research of important social and psychosocial characteristics of people's wellbeing.

To sum everything up, this approach gives rather complete evaluation of people's wellbeing in a comparative analysis with other regions and countries. Future development of this project lies in the improvement of system of indicators, adding new indicators to the dashboard and compiling ratings of regions and countries according to their level of people's wellbeing.

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JUSTICE AS AN INDICATOR OF ORGANIZATION OF A GOOD SOCIETY: WAY TO THE APPLICATION OF THEORY TO PRACTICE

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Abstract: In this article the authors state that justice, being common and traditional value appears to be defunct in the context of civil society. Justice by virtue of its ideal quality cannot be realized in to the full extentб but it will always Influence on people's wish to live in good society, on practical realization of the principles of the theory of justice. In the following research the authors made an attempt to grasp the specific character of modern discourse of justice in general.

Keywords: social philosophy, good society, civil society, justice.

1.   Introduction

Perhaps the problem of determining theoretical grounds of justice is rightly considered to be one of the most acute topics in modern social philosophy. Even if we take a look at the history of development of society, one can find only few theoretical problems which made the mankind shake with fever at all stages of its development. This is why the problem of organization of just society is essential for classical antiquity, modern social philosophy and modern political theory.

Undoubtedly, only social philosophy should play an important role in maintenance of modern discourse of justice since only it is able to keep methodological unity between the opinion of justice and knowledge of it, between the theory of just society and practical application of the principles of this theory. And the purpose of this article is to view ways and means of application of the principles of the theory of justice in people's daily life.

The peculiarity of the idea of justice becomes apparent not only in inclination of different people to conceive it as a basis of their activity, but also in the fact that researches of various movements, such as religious, political, legal, philosophical, psychological and many others, thought, discussed and tried to identify the essence of it. Philosophical discourse of justice is not defined unambiguously.

2. Theory

All theorists indicate that the problem of justice is complicated and versatile. We can find this topic in all significant philosophical schools and in within the framework of basic philosophical movements, starting from classical Greek philosophy.

«Plato's line» considered the priority of the general over the particular in the problem of justice and strived for radical reorganization of society on the basis of equality and justice.

According to «Plato's line» the idea of justice proceeded from the advantage of a person's individual right for justice over the rights which were claimed by the society and the government in relation to justice; they also suggested moderate way of development as the most reasonable way of attainment of just organization.

Further development of social-philosophical and ethical conception, from Middles Ages to the 20th century, proceeded actually on former point of view of debate between Plato and Aristotle.

The peculiarity of thinkers' views of the Middle Ages on justice is in its theological interpretation, its reduction to divine justice. Justice proves to be fully separated from earthly social sphere, and this was one of the means of ideological justification of social oppression as something which was set by the God of justice. Injustice is viewed as a will of fate and in this interpretation it is the result of impiety, the result of wrong faith or divine trial. The most precise theoretical representation of this idea is found in the philosophy of Thomas Aquinas, who almost fully duplicates Aristotle's theory of justice, bringing religious grounds to it.

Sometimes both lines combined, as in Italian thinker N. Machiavelli, but in most cases this or that thinker took his more pronounced stand, inclining to either Plato's alternate approach to solution of the problem of justice or to Aristotle's perspective.

Perhaps, Thomas More, Tommaso Campanella, and later Karl Marx, are the most outstanding adherents of Plato's practice of justice. Each of them wrote a work or works, which became a kind of classic in this trend: More's «Utopia», Tommaso Campanella's «The City of the Sun», Marx's «Capital», and «the Communist Manifesto». These thinker's ideas found their reflection in practice of the so-called «real socialism» in the form of Soviet, Chinese, Yugoslavian and other models. In these models the way towards justice application was made literally straight: old social relations were cancelled as inappropriate to the principles of justice (private property was

announced to be the main evil), and they were replaced by new relations based on public property.

In contrast to this, the way, proclaimed by Aristotle and reflected in social practice of «capitalistic» states proved to be, probably, the most relevant and efficient. The founders of this approach are such philosophers as Thomas Hobbes, John Locke, Immanuel Kant, Adam Smith and, lastly, Georg Wilhelm Friedrich Hegel. It was Hegel who managed to solve the classical problem of the correlation between equality and justice, which had been tormenting thinkers of Early modern period and the Age of Enlightenment.

The heart of the matter lies in the following question: what is justice – equality or inequality? Most probably, the answer must be the following: justice is equality and inequality at the same time, and the right combination of them is justice in the end: «the archetype of equality being the product of naturalistic formation of the mankind has a two-layer natural-social structure, with inner rather specific contradiction. The first, natural layer, - is absolute, existing on the principle of actual inequality. The second, social layer represents tribute, existing on the principle of actual equality. These heterogeneous layers of archetype of equality are combined into one by moral-cultural imagination of people, their wish and will to obtain justice, build it in the bearing constructions of their social existence» [1].

The correlation of equality and justice should be actually reviewed on sort of two levels: the first level – justice as equality, the second level – justice as inequality. Justice, in this case, is a special form of «dialectic contradiction»: on the one hand, it proves to be equality in its initial, primordial basis, and on the other hand, it proves to be unequally in its concrete forms of manifestation. Apparently, the principle of equality may be reviewed, on the one hand, as an implicit premise of attainment of justice, and on the other hand, as an obstacle, which, probably, has to be passed around on the way to justice. It also may be put this way: equality is more obvious than justice, but not every equality means justice, and, as Hegel noted, economic, political and legal inequality in some situations may to a greater extent contribute to attainment of justice than equality in its different forms.

Work out the theory of justice, it is necessary to admit the possibility of existence of four major projects of realization (practical application) of justice, if we connect the idea of justice with this or that ideologies: conservative principle; liberal principle; socialistic principle; communist principle.

Conservative principle of justice may be interpreted as retention of «status quo», i.e. the current state of things. It acknowledges present, existing at the moment organization of society as conforming justice. The organization of the society may be different: class, caste, meritocractic and so on and so forth.

Conservative principle in any case appears if not against all changes and reforms, then against all radical changes and reforms; at the same time the existing social system is acknowledged as the only accurate and reasonable, the best of all public orders: «The theory is conservative inasmuch as it considers these institutes as given and invariable in its existing features; offers ways to make them work more efficiently instead of making up their alternatives and it doesn't picture any future which would be considerably better than the present and those conditions which already exist; obviously or indirectly suggests to accept or reconcile with it, rather than fight against it» [2].

«Something existing is the best» – is the principle of conservatism, although the ground for this «best» may be either strictly rational or intuitive, - when appealing to some «originality» or «nationality».

For instance, a well-known Russian thinker and politician of conservative movement K.N. Pobedonostsev grounded his opinion towards Russian way in history this way: «At depths of old institutions there is an idea, deeply true, coming out from national spirit, and even though it is difficult at times to identify and grasp this idea beneath great outgrowths, covers and forms, which envelope it and have lost their original meaning, but people will perceive instinctively and that's why they firmly stick to the institutions in their usual form» [3].

If we apply this remark to conservative principle of justice, then the principles of justice must be based on «the idea of national justice», which is perceived intuitively. The idea itself must comply with religious pursuits and traditions of people. It is hardly possible that common to all mankind idea of justice, wrapped in in the form of scientific or rational constructions, may exist from this perspective.

That's because if we identify justice intuitively, then, first of all, we cannot prove to another person that our principles are solely correct, and secondly, we are unlikely to formalize these principles, build harmonious and logically reasoned system of deductions.

Liberal principle of justice, unlike conservative one, doesn't acknowledge existing relations in the sphere of justice as the best ones, it considers that these relations should and must be improved, and regards maximum realization of civil rights and liberties as the major judge of this improvement. «When a person in the state is given more freedom this means that his rights fulfilled to the full extent, this society has more possibilities to bring their ideals to life, including the ideal of justice». But liberalism in modern conditions faces the problems with realization of its ideal of justice.

«Just society is a society which doesn't thrust on its members certain values, aims and demands, but it creates a possibility for them to follow their aims on condition that they come to an agreement with everyone. That's why principles which regulate liberal society don't assume definite conception of welfare, they rest on right» [4]. Then we face the «paradox of tolerance», formulated this way: how a man, assuming existence of something morally dangerous, may abstain from using his power of influence on this something existing.

M. Sandel (1982), and mainly M.Walzer (1995) and A. Macintyre (1981), the representatives of communitarian movement, mentioned the fact that sufficient ethical norms and values, necessary for the existence of any state, including liberal, cannot arise in the society living on individualistic directions. S.G. Chukin, the researcher of problems of Good society, insist on the fact that «disagreements on fundamental problems for society, such as death penalty, abortions, euthanasia, boundaries of social state, show that the main reason for these disagreements is misunderstanding of the nature of moral organization of a society» [4].

The root problem is that conceptual aim which considers «civic rights and liberties» as some guarantor of justice and besides quite acceptable for postindustrial western states, doesn't work out for developing countries, and also for the countries, putting into practice postindustrial transformation. Most likely, this is because some externals factors prevent realization of principles of justice. «It is not difficult to foresee this, if

we realize that social injustice is the state of things, arising when social and economic rights are given, i.e. laws are passed (very often democratically, on the parliamentary decisions) which outline social and economic rights without taking into account those consequences that they may have at the moment for basic, indirectly protected civil rights (right for health, education, etc.) in conditions existing in the country» [5].

In other words, it is necessary to become aware that justice in society is the state of things, appearing when delineation of bounds of social and economic rights in this country begins to be identified by other factors, besides the demands stated by basic rights. Nevertheless, G.Yu. Kanarsh supposes that only liberal way of application from theory of justice to practice to the full extent may be rational and scientific, and most acceptable in terms of postmodern project. Since this project affirms pluralism and a dialogue as leading principles of creation and application of the theory of justice in order to make it maximum obvious [6].

In this connection we may refer to Iehn Shapiro, an American researcher, who supposes that the modern theory of social contract, used by the liberal theorists (John Rawls, Robert Nozick, Ronald Dworkin) which is a modified version of classic natural contract, «basically … rational venture …» [7]. Apparently the researcher implies that the principles of justice are not so much the result of agreement of individuals as the result of calculation of certain kinds of interest, which must be known in advance, without any agreement.

Socialistic principle of justice comes out of the following maxim: «From each according to his ability, to each according to his contribution». Such approach was quite popular in the 20th century not only in the countries which referred to «the socialistic camp», but it was also used by the countries which are commonly called «social-democratic» controlled by left(-wing) socialist or social-democratic party.

Indispensable element of the social principle of justice is its reliance on such model of justice where just decision is calculated, although the main idea if this calculation modifies in comparison with classic utilitarian approach of Jeremy Bentham: «In the utilitarianism of Bentham Marx rejects its instrumental calculation and practical considerations; Marx strain after improvident, ethical utilitarianism, where a person sincerely feels his duty to be useful for decent society» [2]. This scheme of calculation of justice was put into service in socialistic countries: justice was calculated on the basis of every individual's «labour input».

But at the same time it was considered that an individual as «a citizen of socialistic state», being «conscientious» must strive to be disinterested towards the state and other citizens and try to get less than the state and other citizens gave him. Such approach was often supplemented with forceful compulsion, and even up to the use of «coercive» model of justice: the state acted as «the strongest subject». This may be best illustrated by saying of Thrasymachus: «I declare justice is nothing but the advantage of the stronger» [8].

Even though «social-democratic» way of application of justice took into account utilitarianism, but it to a greater degree relied on contract model of justice: citizens of the state had to «agree» what justice was, supplementing it with «anti-coercive principle» «justice is something which is the advantage of the weakest».

Communist principle of justice means even more radical, and from the point of view of the present days, more utopian principle: «From each according to his ability, to

each according to his need». Communist principle of justice is the only one out of four principles. which has never brought about in action. However even merely from theoretical point of view the conversation about this principle seems to be interesting for us.

Communism was generally defined this way: «Communism is classless social system with common nationwide ownership on production goods, complete social equality of all members of the society, where productive forces based on constant developing science and technology grows along with comprehensive development of people, and all sources of social wealth pour and the great principle «from each according to his ability, to each according to his need» will be carried out. Communism is a highly developed society of free and conscientious workers with public self-government, in which labour for the benefit of the society will become the most essential need for everyone, conscious necessity and each person's abilities will be used with most benefit for the nation» [9].

3. Conclusions

It is obvious from this definition that a number conditions are necessary to put this principle into practice: public ownership on production goods, complete social equality of people, «all-round development of each person», «pouring sources of social wealth», labour as «the essential vital necessity», etc. Majority of us, however, from the point of view of modern social theory should be enlisted to the realms of phantasy. But at the same time communist ideal of justice carries in itself a big positive supply, meaning in some extent «the ideal of the ideal» for the previous three principles of justice. What's the harm if we «take the abilities of all-round and harmoniously developed person and distribute according to the needs, if these needs are reasonable and well-grounded»? Rationality, scientific character, consistency, morality, collectivism, solidarity included in the communist ideal, «genetically» joined with the right of choice of type of property and together with freedom as liberal institute, may fully become the idea of future global principle of justice beyond any ideologies and social schemes.

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TO THE STUDY OF NOITION «WELLBEING»

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Abstract. In the article the challenges of the content and main components of a state of person's wellbeing in society, its characteristic features are considered. Authors pay attention to multidimensionality of the concept of "wellbeing". They offer to solve this problem by the integrated approach considering the problem of person's wellbeing in context of theoretical and empirical constructs. They offer to solve this problem by the integrated approach considering the problem of person's wellbeing in context of theoretical and empirical constructs.

Keywords: social knowledge, social space, socialization, society, wellbeing.

In any society the supreme social value is wellbeing of people: social, emotional, psychological, material etc. The most important interests of people are caused by a certain ideal of life and activity, determine the most optimum values and representations of a person and mankind. The idea of social, psychological, material and emotional welfare is the basis of motivation and updatings of social space subjects activity.

We connect the wellbeing of people in modern society with civilization and sociocultural opportunities to develop and to realize needs, interests and self-actualization opportunities socially, psychologically, emotionally, in terms of information, with the actualized citizens life activity in a modern information and post-industrial epoch.

Nowadays wellbeing of people in alliance with its various forms of demonstration is an integral formula of welfare, an indicator of social activity efficiency of citizens in society, level of satisfaction with their life activity and with different needs, as well as with their life standards, social and personal comfort and their competitiveness.

One of the indexes of person's wellbeing is its measurement according to an index of satisfaction of clients – Customer Satisfaction Index (CSI). CSI is a standard international index in system of Top 100 Global Brands rankings. In this case the ranging is made according to the satisfaction level of a person as a consumer. It represents one of the major factors subjective perception of wellbeing as well as objective.

Sociological and social-psychological researches are of great current interest. They are focused on awareness of wellbeing in various forms of perception and on its assessment. These researches reveal an objective social situation, allow to judge how the results of events held in society are important. The researches define development prospects on the basis of which it is possible to build the program of improving conditions of person's life activity.

Under current conditions of manysided functional development of society there is not simply a requirement, but need for integration of various forms of wellbeing, creation of person's wellbeing model in civil society and knowledge on the basis of which it is possible to estimate, optimize and actualize the ways of providing with wellbeing the population at different levels of their activity, to make the relevant road maps.

The theoretical concept of wellbeing will promote the integration of social knowledge of wellbeing as it reveals the matter and the main directions to form civil society as wellbeing society. The methodological basis of the theory of wellbeing appears for the concept of person's vitality, as a biosocial individuum and as a person in socium of a modern epoch.

The sociological and social-psychological analysis found that various conceptual approaches to a formulation of various criteria of wellbeing, but not only social, and also psycho-physiological can be integrated. In this case it is of great importance to consider the process indexes and control agents of wellbeing formation in society from a perspective of their contingency.

Researching the main characteristics and components of wellbeing model and its forms allows not only at theoretical, but also at empirical level to reveal indexes of developing person's vitality and the population, as a whole, including indicators not only in work sphere, but also in other areas of life activity.

The theoretical construct of person's wellbeing model extends boundaries of using this model, optimizes the ways of providing with wellbeing in various forms at different levels. To form theoretical construct is possible from the perspective of Foresight methods and synergetic, system, structural and functional approaches.

Along with theoretical construct of wellbeing model it is necessary to collaborate sociological and social-psychological models of wellbeing within which it is possible to research and justify individual and social features of social environment subjects. On the basis of conducted empirical researches from perspective of these models the main characteristics and components of population wellbeing are identified. Thus transparent identification of social and individual indexes of wellbeing promoted complete and adequate assessment of a role of its various forms in organization of a person's life activity, communities and society, as a whole can be done.

On the basis of the researches conducted we can define such essential components of wellbeing, as: psycho-physiological, social and psychological, emotional, moral and esthetic, information and communicative. These components of forming the state of a person and his life activity are characterized by high valency level of satisfaction and having relevant index of satisfaction.

Consistent complying with the principles of scientific construct creation methodology, rationale for theorizes the relevant empirical researches findings, interpretation of information received during the study, all these provide reliability of research findings.

Theoretical and practical importance of researching the problem of formation the civil society population wellbeing consists in a contribution to developing the model of wellbeing. It is based on the discovery of person's vitality and his subjectness.

The study of personality wellbeing is the major problem in philosophy, sociology, psychology, medicine, economy and other social and humanitarian and economic sciences as the problem to construct wellbeing of citizens remains interesting throughout the development of humanity at all times and epochs.

One of the basic structural elements of a phenomenon of wellbeing is process of self-updating, self-determination and self-realization peculiar to all system of the

individuum life activity: in professional life, family and household, leisure, political activities etc.

Person's wellbeing needs to be considered as lifelong process of self-updating, self-determination and self-realization of the personality. Wellbeing of the personality is connected with feeling of health, satisfaction with results of the activity, feeling of pleasure, happiness, success, feeling of usefulness as a person.

During this study the authors were geared to define the interrelation between subjective feeling of wellbeing and results of person's activity, and it is not insignificant state of physical, mental and social health of a person as a subject of social space.

Wellbeing needs to be considered not only as a problem of living standards, but it is necessary to do the research from the individual improvement approach relatively the join the global social space in educational, economic, deontological, legal, political and other perspectives of activity.

Self-realization of the personality is an essential factor of wellbeing in terms of the subject as the problem of wellbeing is closely connected with a problem of socialization of the personality. Process of socialization of the personality defines also self-determination process which is one of the components of person satisfaction process with the social status in various aspects.

Therefore it is possible to claim that feeling of subjective and state of objective wellbeing are determined by the timely activity, the social environment and a social situation, as well as a personal attitude.

This confirmation is constructed on the basis of the theoretical and empirical analysis which leads us to idea that wellbeing of a person in society is not an ephemeral state, but real feeling of successful realization of himself as a personality, but herewith feeling of hedonism and satisfaction.

Ability to adapt, in our opinion, is the key one. The tempo of a modern civilization and rapid flow of information and thoughts checks a person for so-called "strength" and forms his ability to handle stress [1].

Based on the results of the research conducted a number of features was revealed. The respondents with a low level index of «Burnout» syndrome are referred to a high adaptive potential group. The persons of this group quickly adapt to changing conditions of activity, enter into new workforce without conflicts, are conversant in situations and have strategically directed activity. They are characterized as non-contentious and emotionally stable personalities. But the respondents with a high level index of the syndrome were referred to a group of low adaptive potential.

It is important to note the scale of neuropsychic stability which shows risk of disadaptation of the personality under the stress when the system of emotions works in non-standard conditions. They are formed by external and internal factors. Test-takers with a low level index of «Burnout» syndrome are persons with a high level of behavioral control, a high adequate self-assessment and real perception of reality. Respondents with high level of a syndrome of "Burnout" are characterized by low level of behavioral control.

Subjective and objective wellbeing of a person is an integrated education. It includes an assessment of a person to his activity, his attitude towards himself and surrounding persons, the assessment of surrounding persons to his personality and the attitude of surrounding persons.

To reach wellbeing both subjectively and objectively is possible in the process of searching, self-affirmation, self-updating and self-actualization in society, realization of the creative, intelligent and biotic potential.

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HAPPY PLANET INDEX AS QOL INDICATOR

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Abstract. Everyone spends his life on the Earth in the search of happiness. In this regard, in the beginning of the 21st century "happy planet index" was designed. It takes into account three main indicators: human impact on nature, lifetime and life satisfaction. This article focuses on the connections between the economic indicators and the level of happiness as well as on the ratio between these two categories.

Keywords: Happy planet index (HPI), Quality of life (QOL), gross domestic product (GDP), Economic growth, New Economics Foundation, Path Dependence.

1. Introduction

The main economic objectives of a state today are to increase the GDP and the ensuring of economic growth. However, in addition to increasing economic indicators (such as wages), households began to ask questions about whether they are happy or not. Despite the fact that each person has a different conception of happiness, the state has already made several attempts to develop a universal indicator. This indicator is called as Happy planet index.

2. The Happy planet index

The Happy planet index is a combination of three factors: the human impact on nature (the environment), the lifetime and the life satisfaction. This index was proposed by the independent scientific British center New Economics Foundation (NEF) in July 2006. Mainly index was created to reflect the "real" wealth of nations, that is why the comparison with the value of GDP is considered incorrect as the ultimate goal of most people is to be happy [1].

Firstly, about 178 countries participated in the search aimed to reveal the happy index. According to the results, Russia got only the 172nd place with index 22.76. Next time the index was calculated in 2009 and our country has taken the 108th place with 34.5. Surprisingly and fortunately, in 2012 we were able to take the 122nd place with 34.51 [2].

3. Hundred happiest cities in Russia

This index is also calculated within the state to identify the "happiest cities." This study was conducted among 100 largest cities in Russia in 2010.

Table 3. Happy index of cities in Russia (2010).

№	Town	Popula-tion (thou-sand)	Financial situation (%)	Ecolo-gy (%)	Safety (%)	Dynamics of the de-velopment (%)	Level of improve ment (%)	Happi-ness (%)	HPI
1	Grosny	271,6	23	68	51	73	62	80	60
13	Novosibirsk	1473,7	43	35	30	36	63	72	47
16	Saint Petersburg	4848,7	61	34	42	24	42	71	46
52	Moscow	11514,3	67	13	32	23	42	62	40
73	Tomsk	522,9	35	13	26	19	51	74	36
82	Kemerowo	532,9	37	12	32	23	37	69	35

Residents were offered to answer the following questions:
• Are you satisfied with their financial situation?
• Are you satisfied with the ecology of the city?
• Do you feel safe in your city?
• Are you satisfied with the city development dynamics?
• Are you satisfied with the level of urban development?
• Do you feel happy in your city?
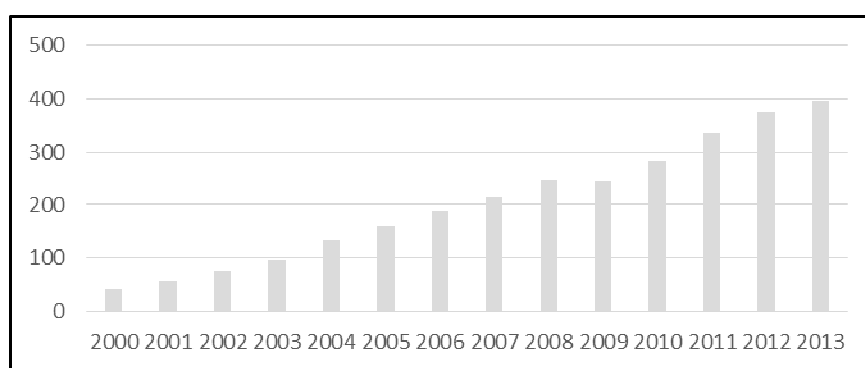
Fig. 1. The gross regional product (mlrd.rub.).

The results were amazing! The happiest Russians don't live in the cities of the federal importance. For instance, Moscow has got the 52th place and Saint Petersburg got only the 16th place. The happiest people live in such cities as Grozny, Tyumen, Kazan, Surgut, Krasnodar, Sochi, Nizhnevartovsk, Novorossiysk and Belgorod. The next position is occupied by Novosibirsk with the 13th place and Kemerovo with the 82th place [3].

4. Happiness in Tomsk
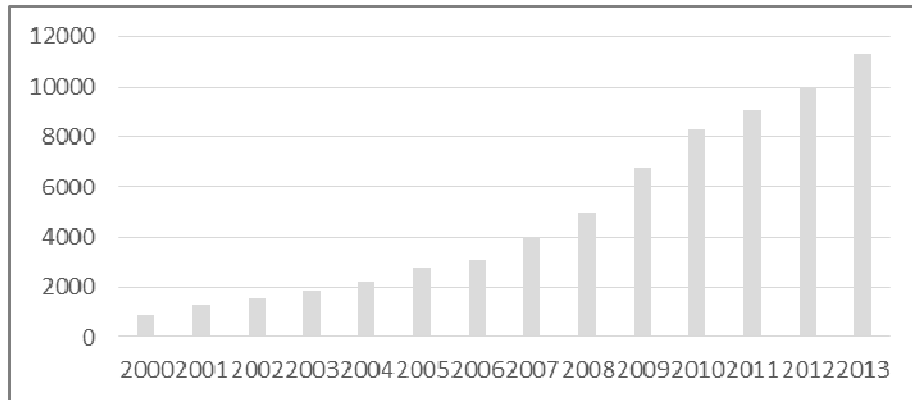
Fig. 2. The average pension (rub.).

Based on the studied material we have been interested in conducting studies among the residents of Tomsk and we decided to trace the dynamics of criteria according to the Tomskstat statistic data [4]. The next factors were chosen to study as the key factors:

- the average monthly pensions (rubles)
- emissions
- regional gross product
- average monthly subsidy per household for housing (rubles).
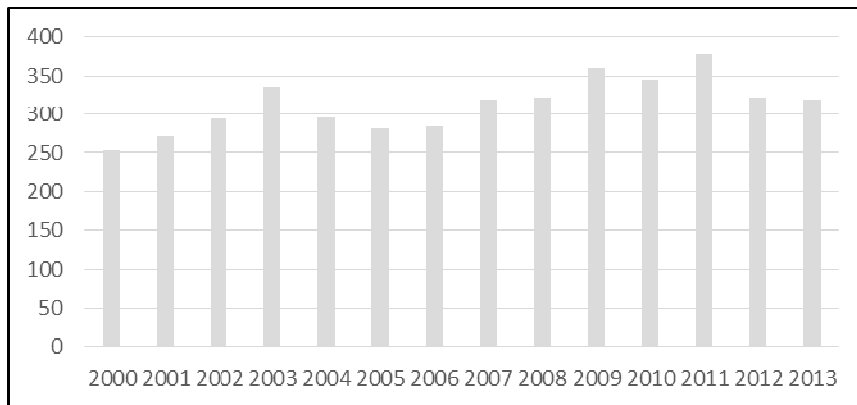
Fig. 3. Pollutant emissions (kt).

As a final key factor the average monthly subsidy per family to pay accommodation was selected.

Fig. 4. The average monthly subsidy per family to pay accommodation (rub.).

To begin with, the gross regional product was analyzed. It was revealed that this indicator is characterized by the stable growth.

The average pension was chosen as the next key factor.

Environmental criterion, such as emission of pollutants, was considered as the next factor to study.

So, we can see the results and make a conclusion, that this key factor is cyclical.

5. Conclusion

In this article, we had a look at the establishment and maintenance of Happy planet index, also the global and regional stati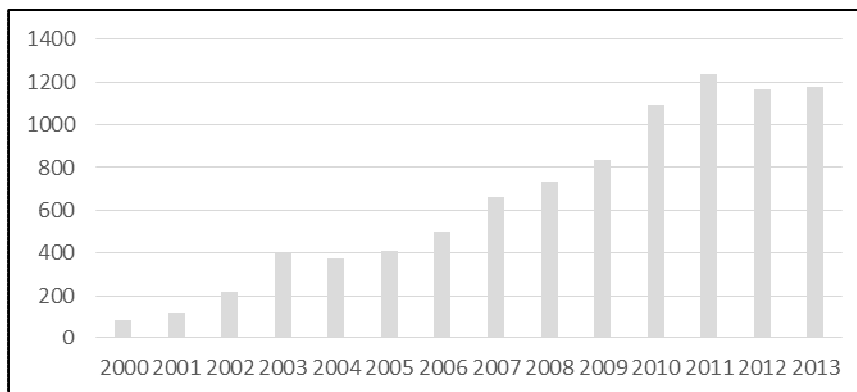stics were examined. In addition, the main dynamic indicators related to the index directly were discussed. According to the analysis, the stable growth of the most economic indicators was identified. However, if we are talking about the growth of, for instance, wages, could this factor influence the emotional state of a person or not – there is a question! Referring to the definition of "happiness» given by one of the greatest philosophers of the XX century John Rawls, "happiness" is a feeling of a life plan success [5]. Moreover, the country that cannot realize its life plan for modernization is unhappy. Therefore, we can conclude that is the one of the reasons why the Russians have Happy index such as people living in Equatorial Africa.

In those countries where the emphasis based on the development of production and economic growth, people, as usually, don't become happier because economic theory which are supported by the government don't have anything common with lives of real people.

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ANT COLONY ALGORITHM FOR RATIONAL TRANSIT NETWORK DE-SIGN OF URBAN PASSENGER TRANSPORT

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Abstract. This study presents an optimization model for a transit network design of urban passenger transport. It aims to maximize the number of direct travelers per unit length, that is direct traveler density, subject to route length and nonlinear rate constraints (ratio of the length of a route to the shortest road distance between the origin and destination). Ant colony optimization algorithm is one of the possible meta-heuristic approaches, which are used to find an optimal route by using the graphs. The essence of this method is that its model derived from the study of the real ants behavior as the creation of the ACO was inspired by these invertebrates. Data collected in Tomsk, Russia, are used to test the model and the algorithm. The results show that the optimized transit network has significantly reduced transfers and travel time. They also reveal that the proposed algorithm is effective and efficient compared to some existing meta-heuristic algorithm.

Keywords: public (urban) transport, transit (route) network, designing, optimization, optimization model, meta-heuristic algorithm, ant colony algorithm.

1. Introduction

Public transport is one of the most important elements in life-support of the city. It has an influence on the quality of life, effectiveness of the economic fields and the usage of the town planning, social and economic potential.

Over the past few years, a dynamic process of the city's socio-economic development has affected the structure of the passenger operations demand and caused the appearance of the new items of construction and passenger traffic's attractors, namely business, shopping, trade and entertainment centers, fitness clubs. This process has also succeeded in the urban settlement areas' changing.

The level of automobilization for the society has increased along with the congestion of the roads, and that has also affected the public transport, which could not remain untouched, as it is an important part of the road system.

All the factors mentioned above demonstrate the need to optimize spontaneously established urban transport system (UTS) which does not meet the requirements of the modern society and develop a sustainable one. One way to do so is to use a decision support system. Nevertheless, in order to get one of this "win-win" situations that everyone hope to find when automizing the system numerous researches are needed to be carried out [1].

The task of designing a suitable transport system is revealed as a generalization of the travelling salesman problem (TSP). Note that the TCP requires several open-ended routes to build up a solution. Such tasks are NP-hard, classified as combinatorial optimization problems and won't allow you to come up with an exact solution if you have more than 15-20 nodes [2].

Nowadays the interest is shown in the approximation algorithms. In the early 60's the heuristic or in other words classic methods have grown in popularity. Over the last two decades, a lot of effort was put into the development of the so-called meta-heuristic methods, which are based on the wildlife observations. The fact that such

methods can overcome the suboptimal point in order to continue the search for the best solution makes it stand out of the crowd. It also explains why meta-heuristic methods are potentially more preferable than the classic ones.

Ant colony optimization algorithm or shortly ACO is one of the possible meta-heuristic approaches, which are used to find an optimal route by using the graphs. The essence of this method is that its model derived from the study of the real ants behavior as the creation of the ACO was inspired by these invertebrates.

Gus's (1989) and Deneubourg's (1990) [3] experiments with real ants are a starting point at which an investigation of ant's behaviour is taking place. However, the first one to formalize the behaviour of ants and develop a strategy for finding the solution to the shortest path problem was Marco Dorigo (University of Brussels, Belgium, 1992) [4]. He is also acknowledged as a father of the ACO.

Advantages of the algorithm are as follows: a higher performance as compared to the other methods of global optimization (e.g., neural networks, genetic algorithms), higher adaptability and scalability. Moreover, the convergence of the ACO is guaranteed, therefore you can always find optimal solutions no matter how big your graph is.

2. Classic Ant colony algorithm

The Ant colony optimization algorithm comes under the head of the swarm intelligence algorithms and it models the behaviour of the real ants. Ants are the insects, which are able to form the groups (colonies). Such population-based approach allows the ACO to solve dynamic optimization problems quite effectively. One should note here that such problems could be quite difficult and even impossible to deal with without having the control and coordination from outside. Ants are self-organizing creatures. Such peculiarity is the core of the method since it is exactly what makes the insects quickly adapt to the changing conditions of the environment for the sake of the goal achievement through low-level interaction.

Since ants don't have the eyes at all their interaction takes place by means of the pheromones, which are used to mark the path. The more pheromones are on the route the more often the rest of the ants use this path; therefore, the quantity indicates that the road is one of the most optimal as it's the shortest one.

Now let's look at the concrete example (Fig. 1). The task is to find the best way from the initial point N (the nest) to the destination point F (the source of the food).

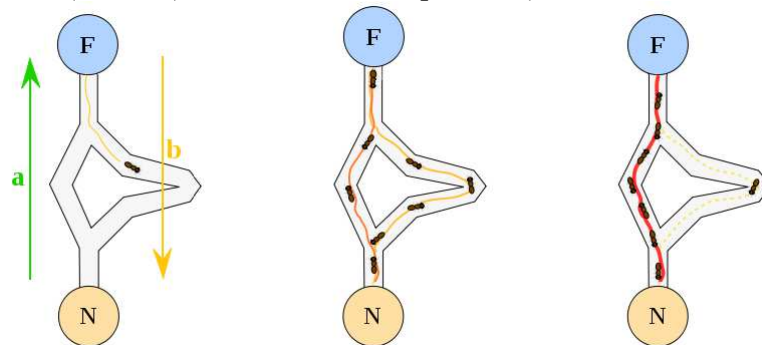Fig. 1. Illustration of the best routes finding

One might rightfully guess that at the beginning the probability for the ant to follow the right path is equal to its probability to choose the left one. The point is that the one taking the shortest trail will be the first to arrive at the point of destination and return to the nest, thus on the shortest path there is going to be more pheromones. Since the

pheromone is exactly what indicates where the ant should go next the shortest path at the end will be the best one.

The steps of the ACO algorithm are as follows:

1. Initializing the ants.

In this case, we can use two different approaches: put all the ants at one point or at the different ones. Which method you should use it depends on the particular situation. At this stage, it is also necessary to assign the initial level of the pheromones. Its value should be a small positive number. It should be done in order to prevent the ants from staying at the initial point without moving forward.

2. Find the solution.

Since the ACO strive to mimic the behaviour of the real ants using the simulated ones the graph is used to describe the route. The probability of reaching node *j* from *i* (transition probability) is calculated according to the following formula:

$$p_{ij} = \begin{cases} \dfrac{\tau_{ij}^{\alpha} \cdot \eta_{ij}^{\beta}}{\sum\limits_{h \notin tabu_k} \tau_{ih}^{\alpha} \cdot \eta_{ih}^{\beta}}, & if \ \ j \notin tabu_k \\ 0 \end{cases}, \tag{1}$$

where

τ_{ij} – amount of the pheromones on edge (*i, j*), «the sense» of the ant;

η_{ij} – visibility of the edge (*i, j*), $\eta_{ij} = 1/d_{ij}$, d_{ij} – the distance between nodes *i* and *j*, «the eye» of the ant;

α, β – adjustable parameters, define the importance of the trail versus its visibility when it comes to choosing the next edge to follow;

$tabu_k$ – the list of the visited nodes of the graph in the current tour, «memory» of the ant.

If *α* = 0 the algorithm becomes greedy, as the choice of the next node will not take into account the pheromones quantity, so the closest town will be more preferable to choose. If *β* = 0 – algorithm considers only the value of the pheromones without looking at the length of the path.

3. Update the pheromones.

After the simulated insects have finished following the trail the quantity of the pheromone should be changed. This process takes two stages. Firstly, we need to reduce the value of all pheromones. Secondly, we need to update the pheromones connected to the visited edges by raising its quantity.

Evaporation of the trail is defined as:

$$\tau_{ij} = (1 - \rho)\tau_{ij}, \tag{2}$$

where

ρ – evaporation coefficient.

The *ρ-parameter* helps to get rid of unlimited accumulation of the trail. Therefore, it prevents the insects from remembering bad paths which were discovered before. If the edge is unused by the ants then its level of the pheromone will decrease exponentially after every iteration.

In order to take the evaporation into consideration we need to update the value of the ants pheromones. So, the trail intensity is updated by the following formula:

$$\tau_{ij} = \tau_{ij} + \sum_{k=1}^{m} \Delta \tau_{ij}^{k}, \tag{3}$$

where

$\Delta\tau_{ij}^{k}$ – the quantity of the pheromones laid on the visited edge (i, j) by the k-th ant.

$$\Delta\tau_{ij}^{k} = \begin{cases} Q/L, \ if \ edge \ (i,j) \in L \\ 0 \end{cases}, \tag{4}$$

where

Q – constant, which artificially ads the pheromone;
L – total length of the route.

According to (4), the better the path, the more pheromones is going to be there. Thus, the more ants are going to follow this trail in every iteration.

The iteration process stops when the conditions meet at least one of the requirements:
– the number of times around the while-loop is satisfactory;
– all ants have completed the search;
– satisfactory solution has been found;
– time slice is overhead.

3. Optimization model

A simplified diagram of the UTS has three interdependent subsystems, namely "city", "transport", "passengers" (Fig. 2).
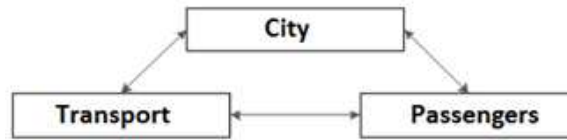
Fig. 2. Urban public transport system

"City" subsystem consists of such elements as "industry", "residential development", "urban road system" and obviously numerous management tools. The key requirement of "city" subsystem is to organize trouble-free transition of the population.

"Transport" subsystem is composed of the organizations, which carry out the transportation.

"Passengers" subsystem is defined by the functioning efficiency of the transport system. The efficiency is implied as the ability to meet the demand on the transportation.

Without a doubt, performance indicators are contradictory from systems components point of view. For instance, the process of minimizing waiting time is related to the quantity of the vehicles on the route. For this reason, it is also connected with the lowering of the traffic congestion and reducing economic benefits. On the other hand, transportation companies have the tendency of gaining more profitability that can lead to the protests among the citizens and appearance of new entrants. Consequently, it is necessary to estimate performance indicators while taking into account all the elements of the UTS.

As such optimization criteria, direct travelers density can be used. Therefore, optimization model for an open-ended urban transfer system is as follows:

$$D_{AB} = \frac{Q_{AB}^{sum}}{L_{AB}} = \frac{\sum\limits_{i \in N} \sum\limits_{j \in N} T_{ij} x_{ij}}{\sum\limits_{i \in N} \sum\limits_{j \in N} \Delta_{ij} l_{ij} x_{ij}} \to \max,$$

$$\begin{cases} L_{\min} \leq L_{AB} \leq L_{\max} & (a) \\ Q_{AB}^{sum} > Q_{\min} & (b) \\ A, B \in F & (c) \\ A \neq B & (d) \\ 0,2km \leq \forall l_{ij} \leq 0,8km & (e) \\ q = \dfrac{L_{AB}}{P_{AB}^{sh}} \leq 1.5 & (f) \end{cases} \qquad (5)$$

where

D_{AB} – travel density of the route starting from A and ending at D;

$Q_{AB}^{sum} = \sum\limits_{i \in N} \sum\limits_{j \in N} T_{ij} x_{ij}$ – number of direct travelers of the route A-B;

$L_{AB} = \sum\limits_{i \in N} \sum\limits_{j \in N} \Delta_{ij} l_{ij} x_{ij}$ – length of the calculated route A-B;

i, j – number of the stop;

T_{ij} – number of direct travelers between stops i and j;

x_{ij} – boolean variable, indicates whether stops i and j are on the route A-B or not;

Δ_{ij} – boolean variable, determines whether the road section between stops i-j belongs to the route A-B or not;

l_{ij} – length of the section of the road between i and j;

$L_{\min} / L_{\max}$ – minimum / maximum length of the route;

$Q_{\min}$ – minimum number of the route's travelers;

F – collection of destination stops;

A – origin stops;

B – destination stops;

q – coefficient which controls nonlinearity of the route;

P_{AB}^{sh} – the shortest road distance between A and B.

The proposed optimization model allows to take into account the interests of both passengers and transportation companies. In view of passengers, this criteria maximiza-

tion would lead to reduction of transfers and, consequently, reduce the travel time. Increasing the number of passengers per unit path length would lead to increase passenger traffic and, consequently, to increase in profit of transport companies.

4. Ant colony algorithm for transit network design of urban passenger transport

The main idea of bus network design is to find the optimal pair of the origin and destination stops. Different parings can form different bus routes with different direct traveler densities. It is very similar to the ant colony algorithm. If we take the buses as ant colony, the origin as the nest, and the destination as food source, the transit network design problem can be simplified as a process by which the ant colony searches for food from the nest based on the pheromone, that is, searching for an optimal bus route from the origin to the destination based on direct traveler density. The specific steps of the algorithm are as follows.

Step 1. Initialization
– Bus network initialization: The bus network consists of bus stops and links, while bus stops can be divided into terminals and middle ones. The links between stops can be either unidirectional or bidirectional. Terminals and stops are identified from the collection, and the travel demand between stops is assigned to links in the graph. For those stops evidently unfeasible, the number of travelers can be adjusted to zero beforehand [5].
– Pheromone matrix initialization: As all of the initial stops make the same appeal to the bus, an initial weight needs to be allocated to all links. Because the direct traveler density is regarded as the "pheromone", we use the average direct traveler density ($\tau_{ij} = \sum_{i,j \in N} T_{ij} / \sum_{i,j \in N} l_{ij}$) to initialize the pheromone matrix. Finally, the pioneer buses are assigned to the graph. Because each path carries the same amount of pheromone, the bus can be randomly allocated to the nodes nearby the nest (origin stop).

Step 2. Choosing feasible terminal pairs
Before the path search, the feasible origin O and destination D should be chosen. An *OD* stop pair is regarded as nonviable if it lies on a route that has already been laid out or does not satisfy the constraints. Then, each sub-ant colony starts searching routes between the *OD* pair independently.

Step 3. Rout searching
– Choosing feasible stops: Stops within the constrained distance (0.5 – 0.8 km) of the current stops k are firstly chosen to form a collection, and the next stop l is then chosen from the collection based on the transition rule.
– Choosing the next stop: In the phase, next stops are decided by sequentially choosing feasible entries from the feasible stops. The decision-making about the next stop is based on a probabilistic rule (transition rule) taking into account both the pheromone density τ_{ij} and the visibility value η_{ij} of the corresponding links. We define the probability for a bus to move from stop i to stop j as (1).
– Calculating the inter-stop travelers: As Figure 3 shows, for inter-stop direct travelers we count both the demand between the two stops and the demand between the two service areas of both stops.
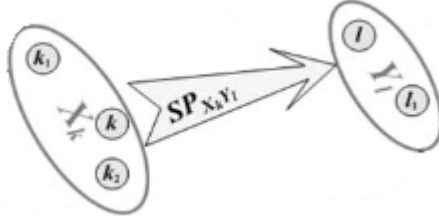
Fig. 3. The number of direct travelers between inter-stops

Service area X_k contains stops within walking distance to stop k, as $X_k = \{k, k_1, k_2\}$, and service area Y_l contains stops within walking distance to stops l, as $Y_l = \{l, l_1\}$. Thus, the number of direct travelers from stop k to l is equal to the number of travelers from X_k to Y_l, that is, $T_{X_k Y_l} = T_{kl} + T_{kl_1} + T_{k_1 l} + T_{k_1 l_1} + T_{k_2 l} + T_{k_2 l_1}$.

- Calculating the total number of travelers of a route: $Q^{sum} = \sum_{k,l \in S_{OD}} Q_{kl}$.

- Calculating route length: $L = \sum_{i \in N} \sum_{j \in N} \Delta_{ij} l_{ij} x_{ij}$.

- Calculating route direct traveler density: $D_{OD} = Q^{sum} / L$.

Each route is evaluated in turn after the calculation. If the routes satisfy the length constraint, the minimum number of direct travelers constraint, and the nonlinear constraint, the bus network will be updated accordingly; otherwise, the route will be abandoned and the algorithm returns to Step 2.

Step 4. Pheromone updating

After a route has been identified, the pheromone in the network needs to be updated as (3).

Step 5. Terminating condition

If there is no route satisfying the constraints or the iteration reaches its maximum, stop; otherwise return to Step 2.

5. Numerical Test

To examine the model and the efficiency of the algorithm, data in Tomsk city are used for the numerical test. The population in Tomsk is about 570 thousand, and the build-up area is about 290 km². At present, 45 bus routes that include about 900 bus stops. We get the bus OD traffic matrix using the automated algorithm based on electronic maps geodata [6].

In total, 38 bus routes are laid out with our method. By comparing the optimized transit network with the present one, it is known that the direct traveler ratio of the present transit network is about 25 persons/km, which is much lower than the optimized 38 persons/km. This is mainly because present bus routes overlap each other to an extent that can disperse the trip flow, thus lowering the efficiency of the network. In an optimized case, direct trips share 61% of all trips, while the present one is about 41%.

6. Conclusion

Urban growth and improve the quality of population life leads to increase in the level of automobilization. All the factors demonstrate the need to optimize spontaneously established urban transport system, which does not meet the requirements of the modern society and develop a sustainable one.

A new model for optimizing urban transit networks has been developed here, which takes maximum direct traveler density as an objective. The model aims to minimize the average trip time, namely to allow as many passengers as possible to travel between starting points and destinations without transfers. On the other hand, the model maximizes profits for bus companies, namely by increasing operation efficiency and shortening the total lengths of bus routes. This study identifies some of the features of the transit network design problem that make it difficult for traditional methods to solve. We propose an ant colony algorithm, together with an evolutionary optimization mechanism, as a tool to solve the problem.

Meta-heuristic methods are the most promising for solving such problems. Ant colony optimization algorithm or shortly ACO is one of the possible meta-heuristic approaches, which are used to find an optimal route by using the graphs. The essence of this method is that its model derived from the study of the real ants behavior as the creation of the ACO was inspired by these invertebrates.

Finally, with data from Tomsk we test our model and compare some indices between the optimized and present bus networks. Results show that the proposed algorithm are successful in solving the transit route design problem.

7. Acknowledgement

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SOCIAL PENSION CONTRACT IN PEOPLE'S LONG LIFE WELLBEING DEVELOPMENT

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Abstract. This article explains the economic nature of the social pension contract in modern Russian conditions. During the structural analysis identifies the main participants of the pension contract, especially their interaction with each other, as well as factors affecting the horizontal and vertical linkages in pension provision.

1. Introduction

Pension ensuring, reflecting the interaction between different groups of society and the state, is a special case of the social contract,[1] and refers to an agreement of civil type[2] [1]. In the pension contract citizens delegate to the state perform a social function, and it becomes the responsibility of the last. The state establishes the general directions of a pension policy in which frameworks the major parameters of system of a provision of pensions are set: ways of formation and financing of pensions, the sizes of insurance payments, categories of the citizens having pension privileges and others. Other characteristic of pension ensuring is it implicity.[3] Modern pension systems extend without fail on all members of a society. Citizens have is only right on silent joining to state pension ensuring, nonparticipation in pension ensuring is not supposed. From the moment of a birth each member of a society is the potential subject of a provision of pensions as at approach of conditions accurately designated in the national legislation, citizens can receive the pension grant, for example, the disability pension or on the occasion of loss of the supporter. However active pension duties of the individual arise from the moment of the beginning of labor activity. Paying insurance payments (it is pleasant to the individual or not), it gets the right to reception further

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[1] Economic theory considers as an exchange contract, the terms of which are known in advance and are recognized by both parties.

[2] Classification agreements presented in the works of L. Boltanski, L. Thevenot, provides seven types of agreements: market , industrial , traditional , civil , public opinion , creative activity and environmental . In this type of civic is the most interesting , because it is based on the subordination of individual interests to collective pursues achieving Pareto optimum and the objective world are public goods . Achievement of collective goals, aimed primarily at improving the social welfare provided through individual efforts and capabilities of the state.

[3] At division of contracts on obvious (explicit) and implicit it is considered that the first consist in an explicit form in the oral or written form, the second assume definition of conditions by default. Implicit contracts in institutional theories are subdivided on social and conventional where social implicit contracts are based on knowledge and application of traditions and customs of certain society, and conventional are based on the initial contract concluded in an explicit form which in process of development of communications between counterparts loses ability to regulate all complex of new relations. Therefore the further interactions are defined both the initial contract, and the developed cumulative experience.

labor pension. Collective voluntariness in will of citizens is supposed. It is obvious that at individual level not all voluntary participate in pension interaction, always will be dissatisfied with rates of insurance payments, level of the insurance experience and other conditions of granting of the pension rights. Their participation in the pension agreement is dictated not by own choice, and force of the government as nonparticipation, for example, in the form of non-payment of insurance payments automatically assumes law infringement. But, granting of the pension blessing demands collective voluntariness when citizens a priori agree on financing of the public blessing. That is, there is a certain exchange between a society and the state when the first sustains some financial losses in exchange on a social protection guarantee at approach of certain events.

2. Body of research

Pension ensuring represents the interaction characterized by duration and a regularity, between a society and the state concerning granting of the pension blessing. As the parties of the pension contract act a society presented by different groups of interests and the state. Heterogeneity of subject structure predetermines presence of set of the interactions occurring concerning granting of the pension blessing and mediated by force of the government.

Traditionally two basic theories of the social contract allocate: the theory of the horizontal contract (J. Lock) and the theory of the vertical contract (T. Gobbs) [2]. According to the theory of the horizontal contract – contract occurrence is connected with requirement of a society, and its parties are in equal position under the relation to each other. The vertical contract without fail puts forward the state as the exclusive subject.

The pension contract in Russia has vertical character. It speaks, at least, two reasons. First there is genetic conditionality of pension ensuring, which in our country has initially appeared as formal state institute in absence of market system and, accordingly, the market of pension services. And secondly there is backwardness of social interactions. In our country the society in all problems, including social, hopes for the state [3].

The most typical line of the vertical social contract is асимметричность the parties. The society and the state have no actual equality, the initiative always is on the power party. The vertical pension contract is characterized by unequal possibilities of participants, so unequal trunk-call force the basic mechanism of creation of the pension blessing is redistribution.[4] While creation of the pension blessing by means of accumulation leaves on the second plan, or in general remains non-realized.

It is represented that to the Russian pension contract there corresponds model of the interactions described by presence of the parties the Principal – the Agent.[5] Individuals as the principal charge to the state the general care of which first of all extends on the citizens who are in a difficult situation owing to the invalidity. The state takes up

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[4] Redistribution mechanism can be used in pension ensuring, but it must be arranged in accordance with the idea of social contracting. That is the extent of redistribution should be determined by the terms of the social contract, members of which are now living not only citizens, but also future generations. Thus, the redistribution should take into account the interests of those who bear the burden of it, and including the unborn citizens.

[5] The possibility of applying this model to the society-state relations based on the fact that if the state considered as an organization, and society, as the owner of such a specific resource like power, the use of the principal-agent model is justified where the state – an agent-principal and society.

similar obligations and fixes them in constituting documents, becoming, thus, the agent on their performance at the principal – citizens.

The market does not guarantee eradication of poverty among pensioners, stability and predictability of material welfare, including, in an old age, and the vertical pension contract fills these problems, using various tools. Meanwhile input of such institutes as the social pension, the guaranteed size of pension etc. provokes occurrence of some negative tendencies: the pension blessing made by the state supersedes in full or in part during a dishonest competition the similar blessings given by a private sector. As all pension systems in the majority are based on an imperative of participation of citizens when the population should pay without fail payments/taxes for granting to it in the future of the pension blessing the private structures, rendering similar services, remain in less exclusive position. Besides, at state pension ensuring populism, realization of current short-term objectives to the detriment of long-term, incompetence of officials are inevitable at decision-making on the organization of distribution of the pension blessing, etc. And all it, finally, conducts to public welfare decrease.

As in Russia and in a number of other countries, the pension contract is characterized by vertical position for maintenance of balance of interests it is necessary to develop horizontal interactions. For this purpose it is necessary to define that their consumer and what criteria of manufacture of the pension blessing waits from the pension blessing should be carried out for its manufacturers: the state and private structures.

Any blessing is estimated by the consumer from a position of comparison of two parameters of utility and value. Action of mechanisms of a supply and demand transforms them to quality and price categories where quality usually is understood as comprehensible level and quality of a life of the pensioner participating in this or that pension contract. The price means a monetary estimation of the blessing for the concrete consumer and a society. Here again there is a number of the difficulties connected, first of all, with feature of pension mutual relations which have long character, and the estimation of their quantitative parameters is accompanied by difficulties in discounting. If the pension blessing has the public status the consumer can have a false representation about the blessing which is free of charge. Especially it is characteristic for those cases when consumers directly do not pay for the blessing.[6] At the same time in the presence of institute of obligatory payments at citizens demand for the private pension blessings given by a private sector can decrease.

Complexity of comparison of financial streams on payments and payments owing to a number of negative political and business factors (change of a political mode, change of economic way, rates of inflation, economic crises) is a second problem.

From the above it follows that the consumer has greater significance not only a comparison of utility and value, good quality and price, but also accounts for transaction costs that accompany the dynamic process of providing retirement benefits.

The pension blessing can be made and given both private and state by sectors.[7] And thereupon it is necessary to define comparative costs and benefits of manufacture of the pension blessing. For private structure them will be:

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[6] This happens in Russia when the payment of insurance premiums fully vested in the employer.

[7] Manufacture of the pension blessing is understood as the process connected with formation of pension for its potential addressees by means of distribution or accumulation of financial assets, paying during the certain period by the state, employers, workers depending on the provided norms and rules of pension system or the contract. Accordingly in manufacture of the pension blessing can participate both the state through the centralised pension system, and private structures in the form of pension funds, banks,

– Ability to make the blessing with qualitative characteristics necessary for consumers. Considering a state position as a monopolist in granting of the pension blessing, quality for private structure should be characterized not only a comprehensible standard of well-being for the pensioner, but also to be not more low, than at the pension blessing given by the state;

– Ability to make such blessing with costs, smaller, than readiness of the consumer to pay for it. And thereupon defining value have not only the internal organization of formation of the pension blessing, but also the external business factors influencing this process and, first of all, such as rates of inflation, taxation level etc.;

– Size of alternative costs of use of resources demanded for this purpose more than production costs of the given blessing.

The requirement for the pension blessing is, as its consumers in the majority are invalid and cannot independently take care of itself. However demand for the private pension blessings is less, than the greater influence in pension mutual relations has the state.

As fairly notice A. Auzan and V. Tambovtsev that the state undertook manufacture of any service, and in this case the pension blessing, it is necessary at least that manufacture was favorable to politicians – in sense of maintenance of their electoral support or creation of a stream of incomes and there were the free budgetary resources which are not directed on other, more important, from the point of view of politician, the purpose [4].

It is obvious that the first condition is carried out, and the second in the light of influence is socially-demographic factor carried out partially. Considering pensioners as the considerable electoral group, the first condition at times is the basic and sufficient for manufacture of the pension blessing. Performance of the second is provided with toughening of the pension contract and the further development in it of vertical communications. A vivid example is increase of insurance/tax loading in a number of the countries last decades owing to an adverse demographic situation and attempt of attraction of a private sector in the decision of problems on granting of the pension blessing.

All subjects participating in manufacture of the pension blessing (both the state, and private structures), are considered as utility of individuals and, thus, promote increase of their standard of well-being. But the state in the process of manufacture of the pension blessing supersedes a private sector from the market of pension services casually. Such situation provokes deterioration of the pension blessing both in the commercial environment, and in state owing to absence of a competition. Consumers with the big enthusiasm participate in the state provision of pensions which, in their opinion, gives the big guarantees for execution of pension obligations.

Contract interactions generate outer effect. Positive outer effect is expressed in increase in well-being for their consumers, negative – in reduction, which is in unpremeditated causing of damage. Prominent feature of development of a modern society is occurrence of a new kind of outer effects – network. Network outer effects accompany also a provision of pensions. So, for example, increase of number of pensioners

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etc. financial institutions. Granting of the pension blessing finishes process of manufacture of the pension blessing by transfer of the made blessing (pension) to the consumer of the blessing (pensioner) at performance of all conditions of the pension contract. Thus the individual paying for payments, carries out purchase of the pension blessing, but not its manufacture unless it independently saves up to itself(himself) on an old age, and then consumes the savings which, thus, become the pension blessing.

can negatively affect their provision of pensions as there can be a deficiency of the money resources used for the decision of the given problem. At the same time return situations when the increase in quantity of participants can generate and a number of favorable effects are possible also. For example, in the course of pension investment большее the number of investors creates potential possibility for reception большей benefits. As one of the factors, profitableness of pension capitals, the quantity of investors is influencing.

That the public welfare did not decrease by manufacture of the pension blessing, it is necessary to consider outer effects and internalized them. As the subjects capable to manufacture outer effects and they not always ready to internalized them on subjective (unattractiveness of unpopular reforms for politicians (for example, all understand that it is necessary to raise a pension age, but nobody incurs such responsibility, incompetence of politicians, government officials) and on objective factors (socially-demographic conditions, the general economic situation), inclusion in pension contracting of facultative mechanisms is necessary.

The establishment in it of the horizontal interactions promoting development of a competition in a private segment of the market of pension services can be the effective mechanism of neutralization of negative outer effects in the vertical pension contract and simply their internalization, and also between the state and a private sector, as a result there will be an improvement of quality of the pension blessing. Development of horizontal interactions will allow to give also the big flexibility to the pension contract by means of input of pension innovations (for example, in some countries there is no strictly certain age of a retirement, there is a possibility of reception of pension not regularly, and single payment etc.) and by that to provide the best adaptability of pension ensuring to changing environmental conditions.

So, the parties of the pension contract are a society, on the one hand, and the state – with another, but at the same time owing to heterogeneity of a society and exarticulation in it of different social groups in pension ensuring is observed variety of every possible contract interactions which can be divided on collective and individual. Within the limits of the first groups of individuals through the pension norms formalized by the state participate, within the limits of the second – the priority is given to the individual choice based on independence of subjects and individual preferences. And the state role in pension interactions varies depending on the form of the pension contract. So, in the conditions of the horizontal contract the state role is reduced to function of the arbitrator, and here in the vertical contract the state will gets prevailing character over all actors of pension interactions.

As the pension contract within the limits of a society is the whole network of the continuous collective and individual interactions subordinated to the general rules of pension ensuring, to reveal all from them it is not obviously possible. For example, in the conditions of free economic relations each individual can enter without dependence from will of others agreements with certain structures for reception of the pension income in the future, it is a question, certainly, about the pension funds, the operating companies and other organizations participating in management by pension accumulation. Different ways of individual formation of the provision of pensions, not regulated by the pension legislation, for example, the contract of the lifelong rents, accumulation through bank deposits etc. are possible also

Another matter – collective interactions. Conditionally in the pension contract it is possible to allocate following kinds of the basic interactions: between paying taxes/payments and receiving different forms of a provision of pensions, between work-

ers and employers, between present and future generations; between paying the taxes/payments, receiving different forms of a provision of pensions and the organizational structures accumulating and distributing collected financial resources.

The most perceptible in pension ensuring for the majority of the countries is the agreement between two social classes: workers and-or the employers paying insurance payments, covering current pensions, and pensioners – addressees of corresponding grants. Is at first sight problematic to reveal an exchange subject as, if to consider mutual relations within the limits of accurate a specified period that is not absolutely correct, we have, on the one hand, the paid insurance payments transformed to pensions, and on the other hand satisfied, though, probably, and not to the full, requirement for a provision of pensions. In other words, one party gives, and another takes. But it is not necessary to forget that pension ensuring is a network of continuous mutual relations where present pensioners (recipients) were before workers (donors). Thus, at the analysis of the pension distributive agreement the abstract approach where, considering two parties of contracting is necessary: Workers and pensioners, we, at the same time, assume their dual role when each of counterparts acts in two appearances: in the beginning as the donor, and then – the recipient.

Separately relations between workers and employers stand apart. In the majority of the countries both these categories participate in financing of a provision of pensions at the expense of payment of taxes or payments. Thus level of wages of workers depends on distribution of tax/insurance loading. In other words, the above loading of employers, there is less level of incomes of workers. And the less finally there are wages of workers, than fewer possibilities remain under its order.

Deficiency of the majority from existing at the present stage of development of pension systems forces to modify principles of inter-generational interaction. The distributive mechanism of pension ensuring, as a matter of fact, is arranged in such a manner that one generation provides other generation (it is a question of the agreement between workers and the pensioners, described above). In the conditions of the changed demographic situation the agreement between generations cannot be recognized to the adequate developed realities as it lays down the future generations in an unprofitable condition and demands revision.

Undoubtedly the great interest causes the analysis of mutual relations between, on the one hand, paying taxes/payments both receiving a provision of pensions and the organizational structures accumulating and distributing collected financial resources. This interaction many-sided also can be considered separately as relations between paying payments/taxes both their organizations collecting and distributing as relations between receiving a provision of pensions and its organizations giving, also it is possible to allocate interactions depending on the various categories, participating actors (for example, for tax bearers different rates of taxes can be established, it is possible to speak and about differentiation among addressees of pension, the organization it is possible to divide under organizational-legal forms, patterns of ownership etc.)

3. Conclusion

Thus, the pension contract represents a difficult network of continuous interactions between various actors of the pension relations caused by the general rules of pension ensuring.

The practical importance of the spent analysis of the economic nature of the pension contract consists in the following. Any contract relations assume a mutually advanta-

geous exchange, and, thus, pension ensuring as the contract which parties are a society presented by different groups of individuals, and the state, should consider requirements of each of counterparts. It is enough difficult to make it because of presence of different groups of interests within the limits of a society, as one of the parties of the pension contract. Therefore the unique way of achievement of mutual benefit of an exchange at pension ensuring is development of mutual relations and interactions between various participants. Consensus achievement in pension ensuring in society scales is possible at all at the account of opinion of the majority and its statement in the head of interactions, and at revealing and realization of interests of various groups of a society: pensioners, workers with low earnings, workers with high earnings, women, men, mothers having many children etc. and interests of separate individuals. The society, thus, is a set of various groups with various, at times antagonistic, the interests, which satisfaction within the limits of the pension contract probably only in the presence of every possible schemes in pension ensuring, alternatives assuming set, a freedom in choosing, voluntariness of participation. It means that national pension systems should include a wide spectrum of interactions apropos pension ensuring, realized by various administrative structures, both private, and state, and giving diverse ways of formation of the pension blessing.

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WELL-BEING AND AGING. MEASUREMENT APPROACHES AND THEORETICAL ORIENTATIONS

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Abstract. This paper discusses the effect that age (or ageing) has on subjective wellbeing, a factor whose measurement and definition is an extensive research topic in itself and the subject of a wealth of literature that ranges across disciplines and decades. It shows approaches to the measurement of subjective wellbeing that include eudemonic, evaluative and affective approaches, and describes theoretical orientations which can be used in researching subjective well-being.

Keywords: Subjective Wellbeing, Aging, Health, Social Support.

1.   Introduction

Well-being is supposed to be both the ultimate goal of public policy and what individuals strive for. In the current context of rapidly aging societies, however, the development of well-being as age increases suggests a particularly interesting research

agenda relevant not only to policymakers but to all sectors of society. Even though much has been written about the relation between ageing and well-being, this issue continues to be a source of debate among scholars, politicians and the media (see, for example, The Economist, 2010). Although researchers have tried to identify patterns of well-being across the lifecycle, they have reached different, and sometimes even contradictory, conclusions.

The purpose of the paper is to describe the mainstream theories on the relation between ageing and well-being from the perspectives of economics, psychology and gerontology and to provide a discussion of the empirical studies on this topic. The primary focus of the paper is the effect that age (or ageing) has on subjective well-being (SWB), a factor whose measurement and definition is an extensive research topic in itself and the subject of a wealth of literature that ranges across disciplines and decades. One of the most general interpretations of SWB is that of Diener et al. who define it as "all of the various types of evaluations, both positive and negative, that people make of their lives" [1], encompassing "cognitive evaluations of one's life, happiness, satisfaction, positive emotions such as joy and pride, and negative emotions such as pain and worry" [2]. It therefore includes not only rational valuations of a person's life circumstances (e.g. satisfaction) but also emotions, which are more difficult to assess and compare. In this paper, we use the term SWB rather eclectically and refrain from providing or adhering to a precise definition. In this review we also cover a few more recent studies that use "less-subjective" well-being measures to corroborate the more traditional well-being measures used to determine SWB [3].

The first section of this paper presents approaches to the measurement of subjective well-being that include eudemonic, evaluative and affective approaches. Section part describes theoretical orientations which can be used in researching SWB.

2. Approaches to the measurement of subjective well-being

The promotion of ageing well in later life is a key strategy of public health policy in many developed countries. In the UK and US, this is accompanied by a shift from measuring successful ageing as the absence of physical and mental health conditions towards assessing what is commonly referred to as subjective well-being (SWB) [4]. There are three broad approaches to the measurement of SWB in the academic literature: eudemonic, evaluative and affective.

The eudemonic approach can be defined as the self-assessed worth of an individual's life and how much control they feel they have over it [5]. The evaluative approach is based on a global appraisal of one's life and is measured in its crudest form by simply asking people how satisfied they are with their life. Diener suggests that although a single question tends to serve well as a measure of life satisfaction, it should be supplemented with multiple indicators [6]. Affective well-being can be defined as the degree of positive or negative affect a person has experienced, including feelings of happiness, sadness, anxiety or excitement [7]. This could be in terms of frequency or intensity within a given time frame or at a certain point in time.

This paper describes the three approaches to the measurement of SWB (eudemonic, evaluative and affective well-being) in a sample of adults aged 50 and over. Such an approach is a typical since most of the existing literature employs specific measures and does not cover the differential effects of age on multidimensional constructs of SWB. Moreover, it is relevant to focus on change in SWB in older adults, as it is often

assumed that greater deterioration at older ages is associated with a progressive decline in physical and mental capacity [8].

Wiggins, Higgs, Hyde & Blane and Netuveli, and Wiggins, Hildon, Montgomery & Blane have both found a significant effect of age on a quality of life measure related to eudemonic SWB, when analysing the relationship using cross-sectional data. Wiggins et al. use a nationally representative sample of surviving members of the 1930s Boyd-Orr study of health and diet [9]. They find that respondents aged 70 and over are predicted to have lower quality of life than those younger. Netuveli et al. use cross-sectional data from the first wave of the English Longitudinal Study of Ageing (ELSA) and find that quality of life increases from age 50 to a peak at 68 years, and from there it declines gradually [10].

Zaninotto, Falaschetti & Sacker have also used data from ELSA over three survey waves to predict age trajectories in quality of life, using the same eudemonic well-being measure [11]. They use a structural equation growth model and find that once controlling for a range of time invariant and time varying determinants of SWB, including demographic, health, socioeconomic and psychological factors, there is no longer an association between initial age and quality of life. However, older age predicts a faster within-individual decline over time. This means that age is not related to SWB, but that for those who are older ageing is related to a significant change over time. Zaninotto et al. show that when controlling for these effects quality of life is lower for men than women and for those with no qualifications than those with qualifications. Factors that had a negative impact on quality of life over time, in addition to ageing, were depression, functional limitations, poor wealth, not being in paid employment, not perceiving positive support from one's spouse, children and friends, and having a small social network of close friends and family.

Similar conclusions are drawn by Gerstorf, Lovden, Rocke, Smith & Lindenberger, using data from the Berlin Aging Study and an old age-specific multidimensional SWB measure comprising non-agitation, ageing satisfaction and life satisfaction [12]. They analyse change in the composite SWB measure across six waves of data collection, spanning 13 years, with respondents at an average age of 85 at baseline, and find no effect of age on initial SWB after adjusting for health constraints, openness to new experiences and social participation. However, they equally did find a negative effect on the change in SWB over time for adults who are older at baseline. This highlights the importance of not only considering the cross-sectional effect of age on SWB, but also the change within individuals over time and how this varies with age.

To date, few studies have considered the multiple approaches to the measurement of SWB (i.e. eudemonic, evaluative and affective) using the same sample, which makes it difficult to compare the effect of age, ageing and other determinants across measures. An exception is Steptoe, Demakakos & de Oliveira who use a variety of SWB measures from ELSA to compare the longitudinal relationship between eudemonic, evaluative and affective well-being and their known determinants, including age, over an eight year period [13]. They find that there is a lower level of positive affect and a greater level of negative affect, for those aged 80 and over, and particularly for women. There is a similar relationship between age and change in eudemonic well-being. The change in evaluative well-being is more complex with those in the youngest age group at baseline (50-59) progressively increasing their average life satisfaction score compared with a decline for older age groups. Steptoe et al. do not control for other effects in their analysis of change in SWB.

3. Theoretical Orientations

SWB is often viewed as a theoretical research topic. Although most studies of SWB do not include theoretical justifications or interpretations of their findings, five theoretical orientations have been used in researching SWB [14].

3.1 Discrepancy theory

According to discrepancy theory, SWB will be highest when the discrepancy between our aspirations and our achievements is small. In contrast, SWB will be lower if our achievements fall significantly below our aspirations. Substantial evidence has supported the discrepancy theory for more than three decades. Important for our purposes is that older adults on an average report smaller discrepancies between what they desire and what they have than do middle-aged and younger adults [15].

Most of the previous studies examined global assessments of aspirations and achievements. Cheng measured aspiration-achievement discrepancies in three specific areas: material resources, social relationships, and health in groups of older, middle-aged, and younger adults [16]. Older adults had significantly smaller discrepancies in material resources and social relationships than younger age-groups, but evinced larger health discrepancies. Nonetheless, the older adults reported higher levels of SWB than the two younger age-groups. Plagnol and Easterlin examined aspirations about family life and about material resources, the relationships between fulfilled aspirations and happiness, and age differences in both [17]. In early to mid-adulthood, women were more likely than men to report higher levels of happiness and that their aspirations had been met. Later in life, however, men were happier than women and more likely to report that their aspirations had been met.

3.2 Social-comparison theory

The other popular theoretical orientation is social comparisons theory. Social comparison research demonstrates that individuals or groups to whom we compare ourselves are a critical element in assessments of our own well-being. In essence, we choose the 'yardstick' by which we evaluate our own characteristics and accomplishments and we can use upward or downward social comparisons in self-evaluations. We use 'upward social comparisons' when we compare ourselves with individuals or groups that are more advantaged than we are and the resulting self-evaluations are likely to be negative. Conversely, when we use 'downward social comparisons', we compare ourselves with those more disadvantaged than we are, resulting in positive self-evaluations. Substantial evidence indicates that older adults are more likely than young and middle-aged adults to use downward social comparisons. Gana, Alaphilippe, and Bailly found that the use of downward social comparisons explained almost all of the higher SWB reported by older adults [18]. Similarly, Beaumont and Kenealy report that downward social comparisons mediated the effects of multiple objective life conditions – such as income and marital status – on SWB [19].

3.3 Strategic investments of resource theories

Several related theories focus on the link between the strategies of older adults for investing their declining social and physical resources and their SWB. Based on longitudinal data in the Berlin Aging Study, Paul and Margaret Baltes and colleagues observed that a process they termed 'selective optimization with compensation' allowed older adults to sustain high levels of SWB, despite the onset of disease, disability, and social losses [20]. Selective optimization with compensation involves discarding less important investments and optimizing high-priority investments. If a high-priority investment is no longer possible, new – but generally similar – investments are made to

compensate for the loss. Carstensen's socioemotional selectivity theory is similar to selective optimization with compensation, but focuses on social relationships. According to this theory, as resources and energy decline late in life, older adults avoid less intimate or rewarding relationships and increase their emotional investments in relationships that are more intimate or rewarding. Both selective optimization with compensation and socioemotional selectivity theory have substantial empirical support.

3.4 Social stratification of SWB theory

Stratification theory refers to the social structures and social processes that result in the differential allocation of resources and assets to members of that society. From this perspective, SWB is expected to be highest among those individuals who are allocated the most resources. There is a strong assumption that the primary predictors of SWB will be objective life circumstances and that those with the most advantaged circumstances will also have the highest levels of SWB. Three primary bases of social stratification are viewed as dominant in the United States, as well as in most other societies): socioeconomic status, race or ethnicity, and gender. Thus, stratification scholars hypothesize that people who have the highest levels of education and income, and also white adults and men, should have higher levels of SWB on average than do their less-advantaged peers.

3.5 Social indicators perspective

Although social-indicators research has existed for decades, its growth and prominence has increased greatly over time. Social-indicators research focuses on the quality of life in every dimension, and the relationships between societal characteristics and quality of life. Most analysis in this field is done on an aggregate level, rather than on an individual level. For example, whereas individual-level studies of SWB might focus on the effects of household income, marital status, and gender on the perceived quality of life, a typical social-indicators study would focus on the impact of gross domestic product per capita, rates of marriage, and the political rights of women on average levels of SWB. Two major foci of social-indicators research are on monitoring the change in quality of life over time and on cross-national research, both of which permit examination of the effects of macro-level social structures and processes on quality of life.

4. Conclusion

The purpose of this paper was to present an overview on theoretical orientations and approaches to the measurement of subjective well-being.

There are three broad approaches to the measurement of SWB in the academic literature: eudemonic, evaluative and affective. The eudemonic approach can be defined as the self-assessed worth of an individual's life and how much control they feel they have over it. The evaluative approach is based on a global appraisal of one's life and is measured in its crudest form by simply asking people how satisfied they are with their life. Affective well-being can be defined as the degree of positive or negative affect a person has experienced, including feelings of happiness, sadness, anxiety or excitement.

There are five theoretical orientations which can be used in researching SWB: Discrepancy theory, Social-comparison theory, Strategic investments of resource theories, Social stratification of SWB theory, Social indicators perspective. Each orientation were described and presented in the paper.

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ON THE ISSUE OF HUMAN CAPITAL

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Abstract. Man is one of the main economic resources in modern conditions. The study of the productive abilities as a special form of capital from 60 – HGG. XX century. remains one of the main directions of development economics. This process is due to the recognition of the leading role of the individual in the economic development of the country. At the moment in this area leading position occupied by the theory of human capital. The theory of sustainable development of society and the concept of national wealth based on the recognition of the human driving force of social development. In a market economy, people, performing multiple economic functions, is a carrier of the productive forces of society.

1. Introduction

Economic thought, evolving under the influence of socio-economic processes, intellectual productive forces, the dynamic development of innovation and information sphere comes to the need for theoretical studies of intangible resources and factors of production.

More Adam Smith wrote that «man studying with a large expenditure of time and effort any of the professions... can compare with... expensive car». This work «... it will reimburse all the costs of training, with the usual, at least on capital gains..». [12]. Subsequently, Marx argued that the development of creative, intellectual and physical abilities of the individual – a «real wealth», «the main productive force of society» [8]. In the 50s of the 20th century gradually begins to shift the vector of economic research with labor-intensive processes use the available manpower on the process of creating a qualitatively new, because in accordance with the spirit of time, a new

generation of researchers believed in the possibility and necessity of solving the social and economic tensions only scientific, theoretical approach. Studies in this area have been reflected in the summary of the modern theory of human capital, which were first reported in a number of works of Nobel laureates T. Schultz and G. Becker.

2. Human capital theory

«Discoverer» of human capital theory is an American economist T. Schultz. Key provisions of their research were published them in the 60s of the 20th century in the articles: «Education as a source of capital formation» [22] and «Investment in human capital» [21].

The greatest practical contribution to the study of human capital theory, introduced by G. Becker. Theoretical studies of G. Becker in microeconomic foundations of this theory revolutionized the economy. Its main findings and approaches in the study of the labor market, he formed in his study «Human Capital: A Theoretical and Empirical Analysis» [18], which defined the scientific and theoretical basis for further research. Later he developed using the approach of Becker analyzed many aspects of socio-economic life of the entire society.

Any theory developed in the conflict and confrontation of different ideas, attitudes, beliefs, methods and concepts. Human capital theory is no exception. In confirmation of this fact are continuously increasing number of studies by different authors. Allocated and argued not only reveal new forms of property and human capital, but also expands its interpretation varies. Many well-known and respected European and American researchers were the founders of the human capital theory in its modern form: L. Thurow (Massachusetts Institute of Technology), M. Fisher, J. Weise (Cambridge and Oxford University), J. Mintzer (Columbia University). Large also contributed C. Bowles, B. Kicker, F. Machlup, B. Chiswick and others. Theoretical position of domestic researchers distinguished not only by a clear, reasoned distinction of shapes and properties of human capital, but also the expansion of the essence and content. So Abalkin L.I. human capital – is «... the amount of innate abilities, general and special education, acquired professional experience, creativity, moral, psychological and physical health, motives for action, providing an opportunity to earn income». P.V. Lemanova defines human capital as «... a system of human activities, which accumulates energy forces of man» [9]. A. Dobrynin Woodpeckers and SA considers human capital as «... a form of manifestation of human productive forces in a market economy, an adequate form of organization of the productive forces of man included in a socially oriented market economy as a leading creative factor of social reproduction». O.V. Suslov specifies human capital as «... a special form of capital represented by a system of interacting in the activity of the individual's needs and abilities» [14]. At the end of the 20th century more influence on the theory of human capital also have research K. Wang, N. Irinda, S. Lombardini, G. Saint – Paul et al.

On the basis of copyright definitions that go beyond the boundaries of the first definitions of the Chicago School ideologues of the neoclassical school, increases the relevance of new concepts (human resources management, development of the individual). It should be noted that all new concepts are based on the basic provisions of the neoclassical theory of human capital first ideologists G. Becker and T. Schultz does not contradict them.

Analyzing the human capital theory, its transformation over time and allocation of new concepts of the fundamental theory, it should be noted common borders /

postulates which are common to all theoretical research in this area during the whole period. Conceptual apparatus, practices vary strongly established theoretical framework of human capital theory developed by G. Becker and supplemented his colleague at the University of Chicago T. Schultz. The greatest development of human capital theory has received abroad, where today mainly develops in the given theoretical aspects.

3. Mandatory limits of human capital

In this article, I want to highlight the main (borders), which are inviolable imperative postulates, within which there is the further development of other concepts mentioned above. A. Smith, J.B. Say, F. List, J.St. Mill, L. Thurow argued that natural and acquired abilities and qualities of each person are its main asset, are unique to him [12]. S. Fischer has identified human capital as «... a measure embodied in a person the ability to generate income. Human capital includes innate abilities and talent, as well as education and skills acquisition» [16]. L. Thurow in his analysis came to the conclusion that «... the human capital of people is their ability to produce goods and services» [24]. Human capital is not considered as wealth, but only as a means, as congenital and acquired abilities generated work.

These findings emphasize the inseparability of the elements of human capital on the individual. Abilities, qualities, properties – unique to a specific person and can not be separated. Results can only be alienated labor person with a certain set of features and functionality, which is something that is created and shaped by man. Proprietor of human labor is transformed into a capitalist monopoly position in their work. The labor force in the post-industrial society becomes human capital, so the economy is beginning to acquire a social direction. This postulate was fairly widespread in the domestic economic thought in the works of S.N. Bulgakov, N.A. Berdyaev, P.B. Struve, M.I. Tugan-Baranovsky, etc. Thanks to these scientists, economic thought has accumulated considerable intellectual potential in the development of human capital theory in Russia, which was manifested in the works of their students in the Soviet and post-Soviet years. V.N. Kostyuk exploring socio-economic processes in the development of the concept of evolution defines human capital as an individual person's ability on which he acts in different situations. T.A. Korkin defines human capital as «... an intangible asset, including the collection of personal property rights and conditions of the enterprise». Despite the existence of different views among researchers on the concept and structure of the concept of human capital, the general vector studies to always match and was within the limits mentioned above. It is also important to understand that all the constructive theory of human capital is based on the neoclassical approach to economic processes in general and the individual in particular. In this basis, Becker writes – «Bound together and assumptions of maximizing behavior, market equilibrium and stability of preferences held firmly and steadfastly, constitute the core of the economic approach in my mind» [17].

That is the problem of maximizing behavior was analyzed in 1935. John Walsh during the development of human capital theory, in which he carried out mathematical calculations about the impact of higher education on the level of U.S. national income. It was he who first introduced the concept of «preference benefits over time» and «opportunity costs of production». Human capital, the structure of which includes

higher education, is an alternative asset to other types of capital [25]. S. Fischer argued that human capital – «... a measure embodied in a person the ability to generate income. Created... when a person invests in itself, paying education» [16]. A further increase the growth of private and public investment in education, productivity growth highly educated workforce, prompted researchers to study the issue of return on investment in the sector. The first analysis in this direction was carried out by E. Denison, who proved that among the factors determining productivity, education factor in the third position. Thus, by increasing the level of formation can be achieved to improve the quality of the workforce. Economic operators who have chosen investment in human capital, hoping in the future to get a higher income behave economically correct. Subsequently, these provisions were separated from the theory of human capital in the new theory of economic growth, which proved that productivity growth directly linked to investment in human capital. This theory R. Lucas, the general theory of human capital has become one of the most promising areas of science and technology in the modern post-industrial society. Later, under the influence of technological structure of society, human capital theory have been identified and analyzed further the relationship between human capital and total income. In a society with a large proportion of people with high levels of human capital more likely birth and dissemination of new ideas and innovations, higher degree of job stability and job satisfaction. The composition of human capital is appropriate to include not only the level of education, but also values, personality traits, natural potential, which also has an indirect impact on performance. All of these factors directly and indirectly provide a common individual income maximization within the neoclassical economic approach.

4. Conclusion

Thus, based on the submitted directions and boundaries, we can conclude the main goal of economic and social research in the field of human capital. It consists in defining the role of values in human constantly changing conditions under the influence of scientific and technological revolution, the formation of general education and special building society to raise its effective use. With further refinement of the definition of human capital necessary to adhere to the basic boundaries theoretico methodological bases: individual abilities, qualities, properties inherent to a particular individual and can not be alienated, separated only can the results of labor ; man always seeks to maximizing realization of human capital in the process of its use; structure of investment in human capital, in contrast to its use, is not controlled by the individual, determined by historical, national and cultural traditions ; investment in human capital are determined by the principle of «diminishing utility of income» for human development.

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ECONOMIC CULTURE AS FACTOR OF INSTITUTIONAL EFFICIENCY OF ECONOMY

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Abstract. In this article criteria of an assessment of efficiency of social and economic institutes are offered and studied. Calculations and the analysis of economy of Russia and the USA on a level of development of transactional sector are made. The rating of the countries on an indicator "quality of life" and "the size and importance of informal economy" is made. The thesis about influence of economic culture of the country on process of formation of social and economic institutes and their efficiency is offered and proved. And also the main recommendations about the directed change or formation of economic culture are specified.

1. Introduction

Recently, in connection with acceleration of rates of world development, questions of institutional efficiency of economy become more and more actual. Considering processes of globalization and integration of the world community, the institutes which were tested and proved the efficiency in one or a number of the countries are borrowed and take root into others. In the course of similar transfer of experience not all transferred institutes are so effective and viable on the new soil. Search and studying of the similar reasons, many authors, as within economic sciences, and multidisciplinary researches are engaged.

2. Criteria of an assessment of institutional efficiency

There is a mass of approaches to an assessment of the institutional efficiency, so some authors offer: efficiency from the Pareto-optimality position, game model of efficiency in situations of action of price norms, efficiency according to Hicks, marginal and efficiency according to Hodgson [1]. Each of these approaches opens functioning of institutes from the new party, however, all of them are poorly compatible to any quantitative assessment that does them exclusively theoretical and almost inapplicable in practice.

Proceeding from the main functions which are carried out by social and economic institutes, we suggest to consider some criteria of an assessment of efficiency of institutes within the certain country. Process of an assessment is offered to carry out without using classical approach "cost – revenue", and from the point of view of parameter "rule – action" [1], offered by group of the Belarusian authors in their scientific work, i.e. the analysis will be carried out by means of the indicators illustrating deviations in functioning of institute from its ideal option. We will allocate some such indicators: Development of transactional sector: the indicator is directly proportional to institutional efficiency because if the transactional sector is weakly developed, then the level of transactional expenses of functioning of social and economic system is higher. This indicator is closely connected with such parameters as degree of asymmetry of information and economic opportunism.

Table 1. Rating of the countries on quality of life 2011-2013.

Country name	Place in a rating		
	2011	2012	2013
Norway	1	1	1
Switzerland	8	9	2
Finland	7	7	8
USA	10	12	11
Germany	15	14	14
Austria	14	16	15
France	18	21	20
Japan	21	22	21
Italy	30	33	32
Cyprus	-	30	37
China	-	55	51
Greece	40	49	54
Belarus	50	54	58
Russia	59	66	61
Ukraine	74	71	64
Azerbaijan	-	94	81
Georgia	-	93	84

From the point of view of function of satisfaction of requirements of society, we will consider an indicator of quality of life of the population.

And the last, is the size and importance of informal sector of economy in this socio-economic system. The indicator directly characterizes degree of a deviation of action from the rule, however it too the difficult aggregated indicator, which measurement is connected with the mass of statistical and analytical difficulties.

We will begin with the first, the transactional sector represents "set of the institutes providing an intensification of interaction of economic subjects in the conditions of information asymmetry and economic opportunism" [2]. The mass of methods by its calculation from domestic and foreign researchers, both on micro, and at macro level is developed. The most outstanding results were reached in scientific works of Skufyina T.P., Kokoreva V., Demsetts H., and also Nort D. and Wallis J. In the last scientific work was carried out rather extensive analysis of economy of the USA re-garding measurement of the sizes of transactional sector in 1970, which reached 54,71% of GNP [3].

We will calculate by the offered technique a share of transactional sector in the USA in recent years. For this purpose we will allocate a share of the value added falling on transactional and not transactional sector in an internal gross product.

As a result we receive that from 2004 to 2012 the share of transactional sector in economy of the USA grew from 56,82% to 57,34% with peak in 2009 of 58,43% *(It is calculated according to* [4]*)*.

However, it isn't necessary to forget that similar calculations aren't absolutely exact, they rather considerably underestimate the size of transactional sector in economy, because except transactional sector which concentrated directly in transactional branch, there is yet small part, which included in not transactional branches. According to some information the size of transactional sector in not transactional can be estimated approximately according to a share of overhead costs, however this indicator also difficult gives in to any average quantitative assessment. In connection with complexity of calculations we will analyze the underestimated indicators, despite inaccuracy, are quite capable to illustrate the developed tendencies. Having calculated a share of transactional branches for the Russian economy, we see considerable lag of a level of development of the Russian transactional sector from a similar indicator in the USA, 28,40% against 56,82% in 2004 and 30,64% against 57,34% in 2012 *(It is calculated according to* [5]*)*.

However, behind a positive tendency of growth of transactional sector, it is necessary to pay attention to that fact that in the Russian economy there is a list towards its uneven development. Uneven development can be caused: growth of a class of the illegal transactional expenses connected with intensification asymmetry of information, opportunistic behavior, and also with the expenses connected with corruption at the conclusion of contracts. It leads to enlargement of the institutes,which minimize this class of costs, and is interfaced to a poor development of other institutes of transactional sector.

The second indicator of institutional efficiency – quality of life of the population, allows to make an assessment from a position of degree of satisfaction of human wants within existing institutes. For the analysis and calculation of this indicator, various authors, such as: U. Forrester, D. Bell, A.S. Todorov, etc. allocate various sets of indicators. Often they included: income level, quality of health care, in the form of various qualitative or quantitative indices, such as average life expectancy, an education level, level of safety and legal security of the population, level of social security, quality of cultural life and possibility of access to cultural values. We consider the data, which offered The Legatum Prosperity Index (Table 1).

Among obvious leaders on an indicator of quality of life of the EU country who are located generally in the first twenty, Russia – in the middle both in the general lists and in group of five high-growth countries of BRICS, further go the majority of the countries of the CIS and some countries of Latin America and Africa.

During carrying out the analysis the following indicators were considered: economy, business and innovations, board, education, life expectancy, safety, personal freedom, social capital. As a rule, developing countries on these indicators take lower places, than the countries with already created and successfully functioning social and economic system.

In close connection with the previous indicator of institutional efficiency there is a following – level of not observed economy in the country. Emergence and growth of informal sector usually consider as result "inefficiencies of formal rules. Often action

within informal rules allows subjects and agents to work most effectively" [6]. "Indicators of not observed economy include:
1. Indicators of the lawful activity which hidden by producers for evasion of taxes.
2. Indicators of informal activity:
   – activity of the enterprises working for own needs;
   – activity of businessmen without formation of legal entity.
3. Indicators of the legal economic activity, which isn't considered because of imperfection of statistical supervision.
4. Indicators of illegal activity:
   – Legal kinds of activity which become illegal if are carried out by the producers who don't have on this right (services of the doctors who don't have the diploma);
   – The illegal activity representing production which forbidden by the law, and distribution of goods and services on which there is a market demand: (drugs, etc.)" [7].

Table 2. Rating of the countries on level of shadow economy.

Place in a rating	Country name	1999	2003	2007	2011
1	USA	8,6	8,7	9,1	7,0
2	Switzerland	8,4	8,4	9,1	8,0
3	Austria	9,6	9,8	10,1	7,5
4	Japan	11	11,2	13,2	9
10	China	13	13,4	14,3	16
13	France	14,8	15,4	15,7	13,2
15	Germany	15,6	15,8	16,7	13,7
22	Finland	17,8	18,5	19,2	19,0
50	Italy	26,5	27,2	27,4	21,2
55	Greece	28,9	30	31	24,3
57	Cyprus	28,9	29,2	30,8	26
130	Russia	45,1	48,8	52	50
136	Belarus	47,9	49,2	53	49,8
145	Ukraine	51,7	55	58,1	54,9
149	Azerbaijan	60,2	62,2	69,6	63,3
151	Georgia	66,2	68,7	72,5	68,8

Emergence of not observed sector of economy happens within survival strategy in the conditions of an inefficiency of formal institutes, it would be incorrect to claim that in the developed countries there is no this phenomenon, what even in the countries of the first echelon, there is a certain number of inefficient institutes. Isn't present in the world of the country possessing 100% institutional efficiency, there are systems coming nearer and aspiring to this figure, however its achievement is utopian. "Not observable the economy exists since emergence of the state and introduction of fiscal system. Now it is present at the different countries of the world: not only in developing and the countries with a transitional economy, but also in the countries which are at high level of social and economic development.

Considering, that, scientists calculate not observed economy at proportions to gross domestic product, considered to be that in the developed countries its scales don't exceed 10-12% of gross domestic product, in the developing – reach 40-45%, and in the countries with a transitional economy - 22-25% of gross domestic product" [8]. Prob-

lem of the countries seeking for maximizing institutional efficiency is "selection of the most effective informal rules, their legitimization and introduction in activity of economic subjects" [6]. The speech, of course, goes not about legalization of drugs, and about the informal institutes which have proved the public efficiency.

Following the results of the research conducted by the World bank and Johann Kapler's University the rating of the countries on level of shadow economy was made, data on 151 countries were studied, data are presented in the Table 2 [8].

Having studied the country from the point of view of the considered criteria, we with confidence can speak about efficiency or not efficiency of functioning of social and economic institutes. The reason of a similar divergence in results of functioning of similar or identical institutional designs, is obviously are hidden in country features of the soil accepting new institute. In this case, it is a question not only and not so much about socio-economic features, how many state and legal and spiritual and cultural features.

3.　　　Concept and essence of economic culture

Searches of interrelation of social and economic and spiritual and cultural processes are conducted for a long time, there is a mass of the researches devoted to interaction of culture and economy, as among domestic, and foreign authors. The concept of economic culture is formed on the basis of a set of diverse and inconsistent approaches. However, indisputable is not only the fact of existence of interaction of economic culture and social and economic system of society, but also their interference, and also an essential role of economic culture in process and result of institutional construction.

Within this work we will define economic culture as the system consisting of those elements of spiritual and cultural system which are in correlation with elements of social and economic system.

We will consider two types of elements of spiritual and cultural system. Knowledge – certain concrete facts or statements about these or those objects or occurring around the phenomena or processes. The second type are the observed and acquired schemes of the action which have been in pairs connected to their negative, positive or neutral assessment. Speaking about the elements of spiritual and cultural system which are in correlation from social and economic, we allocate those elements which are capable to make impact on functioning of the individual within social and economic interrelations and performance by it of the rights and the duties which making its social and economic status. We will review an example: the assessment of an example of behavior "to put things on the places" will affect to observance of the rights and the duties which making the social and economic status "the worker on hiring" or "person responsible for property". Assessment of an example of behavior: "respect for people" is capable to be reflected in the statuses: "spouse", "child", "parent", "the worker on hiring", "the worker in services industry", etc.

The economic culture in dynamics of social development, appears as the intermediary by means of whom process of interaction of spiritual and cultural and social and economic systems is carried out, it translates impulses of spiritual and cultural system into the language suitable for assimilation of the social and economic. Thus, the end result of the specified interaction depends on features of this intermediary. Often, the similar message of spiritual and cultural system in various societies leads to unequal social and economic consequences, different results of bourgeois revolutions in the countries of the West and in Russia can be a striking example of it. It confirms the thesis that

features of economic culture are capable to become a source of distinction in results of social and economic transformations at institutional level.

4. Role of economic culture in the course of formation of institutes

We will enter concept of a natural order of formation of institutes of social and economic system, adhering which institute with a high share of probability will be at least viable as the maximum is effective. Indispensable condition for emergence of requirement of formation of new social and economic institute is existence of the certain interaction, which not settled still, that generate the problems connected with need of their decision. In the absence of versions of the solution of the arisen problem in social and economic system, the impulse moves to area of economic culture. There it is transformed, and search of decisions moves to a level of spiritual and cultural system and is made out in the form of requirement. Further, any institutional reform, which arise and is created within spiritual and cultural system of society, group or the individual, begins with changes in state and legal system – the new law is adopt or existing law changes or supplemented. Fixing of rule in law isn't automatic creation of institute, it only the statement of model of institute, which it is necessary to create, its structures, functions, the purposes, a scope. The specified norms and rules from state and legal system arrive on the level similar to economic culture, play an intermediary role – in system of state and legal culture. In the absence of contradictions, the state and legal system transforms this impulse to changes of spiritual and cultural system. In it the norm is accepted or rejected, legitimized and integrated into existing system or generates contradictions at this level of interaction and deforms a development and reforming order. This situation will be considered below. At a positive outcome, i.e. acceptance and integration of new norm or the rule, spiritual and cultural system the norm moves to a level of economic culture. At successful passing of this stage, the norm is integrated in economic culture, and then, made out and begins the institutional existence within social and economic system, on condition of lack of contradictions.

We will consider the scheme on the example of introduction in Russia of the institute playing a significant role in economy of many countries - non-state pension provision. In political and legal system the fact of existence of this institute is designated by a number of amendments to the current legislation, in particular, changes in the Federal law of 24.07.2002 No. 111-FZ (an edition of 23.07.2013) "About investment of means for financing of accumulative part of labor pension in the Russian Federation", and also the Federal law of 07.05.1998 N 75-FZ (an edition of 23.07.2013) "About non-state pension funds".

Then institutional integration of new norm into legal culture of society, to be exact in more its flexible part legal knowledge followed. Informing of the population was carried out by means of mass media which contained information on the fact of creation of similar rule, about terms of coming into effect and consequences of its non-performance. At this stage it is important to inform the population, in other words to induce society to understand and examine a legal innovation. Further the stage of transition of introduced institute on level of spiritual and cultural system in which the norm is already analyzed not only as the fact of emergence of the next rule and acquaintance with it, and from the point of view of the analysis of the purposes and tasks, and also an acceptability and compliance of this norm to moral components of spiritual and cultural system.

At this stage, society or realizes need of application and use of this norm, recognizing its establishment to effective, expedient, legitimate and not contradicting existing spir-

itual and cultural institutes (for example, to norms of morals, moral, religion). For achievement of this purpose the state usually uses concrete instruments of work with the population: it most often the information and explanatory work about future participating subjects in institute, and about of advantage of participation in it. It can be carried out by means of the publication and translation through system of mass media of performances, debate, discussions, discussions and interview to experts on need and efficiency of formed institute. In the course of introduction of institute of non-state pension provision on television, radio and in printing editions this subject was regularly discussed, all advantages and shortcomings of the entered mechanism, and also options and ways of inclusion of subjects in it were analyzed. Further information is transferred to level of economic culture, i.e. possibility of application of formed institute in specific social and economic conditions and its interaction with institutes of existing economic culture of society, a group of persons, the personality is analyzed. The subjects which have included new institute in their system of the knowledge, and realize need of participation in non-state pension provision system, start the analysis of the market of the specified services, considering options of an investment of accumulative part of pension in this or that non-state fund, considering all features of existing social and economic system. After that the institute passed integration into system of economic culture, there comes a stage of its registration in social and economic system. Subjects start entering in institutional interaction, i.e. individuals start the conclusion of contracts with non-state pension funds on the translation of accumulative part. As a result, we can consider the institute like created. To be said, however, about efficiency of its functioning prematurely, that this analysis can be carried out only after some time of its existence, however, if process was carried out by a natural way and at one stage there was no its deformation, with a sufficient share of probability it is possible to predict its effective functioning and viability.

Deformation of an order is possible practically at any stage of natural process. We will review some examples of deformation.

1.   Contradiction appear at the first stage, i.e. there is a rejection of formed institute by legal culture. We will review an example: the state enters the law on control of telephone negotiations, creates the institute which task is listening of telephone conversations of citizens. At translation of this norm on level of legal culture of citizens, there is a contradiction, as it already contains the legitimate example of behavior, which fixed in item 2, articles 23 of the Constitution of the Russian Federation "Everyone has the right for secret of correspondence, telephone negotiations, post, cable and other messages" [9]. As a result, the population tears away norm. In this case two outcomes are possible: the state and legal system accepts an impulse about a contradiction and revises the decision on institute formation, that not to allow deformation of a natural order; or attempt of artificial introduction of the institute, which functioning is possible only on condition of rigid coercion and control. When using the second option, legal culture promotes formation round the introduced formal institute of a number of adaptive or timeserving informal state and legal institutes. For example it can be: corruption and official inaction (for a certain payment it is possible to be not entered in the list of numbers for listening), exceptions of the general rule (representatives of separate groups of persons leave number listened), "lawful circumvention of the law" (use of gaps in the legislation), etc. Therefore the spiritual and cultural system undergoes deformation: such example of behavior as "telephone negotiations" connects to a negative assessment, and example behavior "non-performance of legislative instructions" with the positive. It is capable to bring to such it is difficult for

removable social and economic consequences, as refusal of telecommunication, and as a result delay of technological progress, and also increase of a role of informal sector, shadow activity and non-obedience to state laws. At this stage self-replicating process of deformation of an order of social development is started: as reaction to non-obedience of population, state and legal system replenishes with institutes of toughening of control of functioning of public institutes. Spiritual and cultural system, economic and state and legal culture gets samples of the behavior, which allow to evade from performance of the rules of law, even in the conditions of becoming tougher control measures. The system passes from a way "development and formation" on way "not aggravation and elimination of consequences".

2. Contradiction emergence at a stage of transfer of norm on level of economic culture. It occurs in that case when creation of new institute pass a stage of state and legal culture and spiritual and cultural system, and meeting contradictions at the level of economic culture. Similarly process which was considered above, artificial maintenance of viability of new formal institute and the beginning of its interaction with elements of old economic culture leads to formation of defective informal institutes. They try to adapt new formal institutes for existing economic culture. The informal institutes, generated in a similar order, not only conflict with legislatively established order of functioning of formal institute, but also try to compete with it. Appear a deviation of actions from rules, therefore, besides that the institute works not effectively, economic culture of the society degrades, as a result, it brings to crash not only this, but also many subsequent reforms because of impossibility of further artificial deduction of formal institute in a condition of viability.

We will consider, for example, creation of such social and economic institute as a tax on luxury. Its creation without contradicting political and legal culture of the population, it became the next tax in the list existing, the spiritual and cultural system integrated this change in itself, however, having moved to a level of economic culture, the institute faced with contradictions. The economic culture of the taxpayer of Russia already contains a parasitic example of behavior – "leaving from taxes". Even those groups of persons which were going to payment of taxes, meeting with economic culture of society, don't wish to become "paying minority". As a result, essential part of taxpayers start estimating positively or neutrally an example of behavior : "nobody pays taxes and I won't be", based on it, the economic culture replenishes with the following positively estimated samples: "if I one will evade paying taxes, society won't lose much", "if a tax I pay only, it becomes much easier for society not", "even if I will pay, all the same money will go to a pocket of officials, instead to go on social needs".

Thus, efficiency of functioning of institute decreases, strengthening of control and toughening of sanctions for non-performance is capable only of some time to maintain viability of such institute. As a result we keep public contradiction round artificially and illegitimate institute, a number of parasitic informal institutes arise, such as various options "leaving from taxes", the economic culture replenishes with such example of behavior as "a non-obligation of payment of taxes", and the spiritual and cultural system absorbs in itself the neutral relation to corruption, a negative assessment of the persons getting under action of a tax on luxury, a negative assessment of public authorities, etc. Deformation of this sort generates self-replicating process of degradation of public systems that is expressed in decrease in level of public welfare. Thus, properties and features of economic culture existing in the country becomes the key factor defining success of institutional construction.

Having analysed a number of the countries from a position of three given above criteria: level of development of transactional sector, quality of life and the size and importance of informal sector of economy, it is possible to notice that among the countries with rather high indicators of informal sector and with low indicators of quality of life, there are many countries of the former USSR that says that economic culture, created allied, isn't adapted for further development, it doesn't contain potential which is necessary at the present stage of development. Not ability to innovative development of traditional economic culture of the Post-Soviet states results in frailty a number of social and economic reforms, because new formal institutes face with illegitimacy and produce timeserving informal institutes. Timeserving informal institutes, in turn, gain broad development and enter the competition with the formal institute, therefore, there is a transition of considerable part of economy to not observed sector and decrease in indicators of quality of life. Among the "outsiders" possessing a high share of non-observed economy and poor quality of life, it is possible to allocate some countries of Latin America and Africa which economic culture was formed under the influence of cultures of colonialists, in the considered countries institutional environment there was created in deformation of order.

5. Directions and ways of formation of economic culture

For the purpose of prevention of repetition of a situation with formation of new institutes on "old" economic culture, it is expedient to begin changes in social and economic development of any country with economical culture to start the next round of development in a natural order. Now in a basis of economic culture besides openness and flexibility, it is necessary to return a number of the samples of the behavior, which we lost for today in our country which existence is capable to lower an institutional inefficiency: "responsibility and a debt of the head in relation to employees and the functional duties, a fair idea of justice and the public benefit, recognition of existence of basic values of culture, moral, moral borders, understanding of that it is impossible to break them as well as formal laws" [10]. And also objective need "formations and fixing of culture of trust, this complex integrated feeling which, in particular, subordinates to honest have, competent, always telling the truth and to the head keeping the promises respecting the employees and inclined to delegate powers is studied. After all the trust contains the huge potential of enrichment of all system of the human relations, formations in the organizations of the comfortable environment and strengthening of synergetic effect" [10]. Discussions about methods of formation of economic culture offer a number of various options, we will list the main of them:

1) Elimination of economic illiteracy, both the population, and the persons making decisions at all levels from state bodies to managers of the enterprises (work in the field of the most dynamic, flexible component of economic culture - knowledges).

2) Feedback between the persons making decisions at all levels, and subjects on which these decisions are directed (introduction of an assessment of regulating influence). Among its main advantages, it is possible to allocate "definition of public, economic benefits and expenses, risks, openness and the rule-making reporting, ensuring expert and public discussions at adoption of administrative decisions" [11].

3) Ideological education of the population, i.e. formation in mentality of the person progressive, promoting effective social and economic development of the personality, samples of behavior and their assessment, through mass media, carrying out public actions and a choice of a certain course of social, cultural and educational, public and legal policy, and also a personal example of state bodies (heads of state, members of

administration, bodies of GAI, police, etc.), which lost the authority on population eyes. "In formation of innovative culture such social institutes as a family, school, university, postdegree education, the production environment, mass media, cinema, fiction" [12] have a key role.

4) Formation of the national idea defining identical orientation of actions of all members of society, promoting of events and the facts connecting and uniting the population at the level of the country. In Russia such events are a victory in the Great Patriotic War, Gagarin's flight in space, etc., but besides, more modern are necessary, the Olympic Games 2014 in Sochi will be able to become probably such event.

6.   Conclusion

It is necessary to revise the scheme "rule" – "inaction" – "punishment for inaction, activity in the field of development of mechanisms of coercion to implementation of the rule" and to start applying "preliminary works in the field of providing and guarantees of implementation of the rule" – "rule" – "action". Having changed an order of development and, having led to effective level of the functioning, existing institutes and elements of economic culture supporting them, it will be possible to speak about compliance to rates of world development, and about mobility, which matters more and more.

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INFORMATION TECHNOLOGY AND MODEL FOR STUDYING THE OBJECT INTERACTION

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Abstract. A system of free and natural computations was introduced and studied with the limitation to the applicative computational system. Case study for the assumptions of object with object and abject with environment interaction was evaluated. The first case gives rise to computations in applicative prestructure while second case leading to computations in applicative structure. The established evaluation map helps to verify and discover the computational invariants. This is significant for data analysis, object recognition and logical forms of determining the object properties in critical information technologies.

1. Introduction

Computing and its development puts a lot of questions, on the most part from which answers either are incomplete, or unknown. Some of them: what is 'computation'? What is 'the information'? What is possible to learn, using computing? What cannot be learned, using computing? – have fundamental value. These questions accompanied computing, since 1940th. It seemed, on them there are answers, but today the same questions are also set by all and everywhere, in all areas of a science, engineering, business and even policy.

Long time there was a tradition according to which computing was considered as a science about the phenomena accompanying computers, and this sight did not raise the doubts. Computing always was and remains a science about information processes. Approximately with 1995 experts from different areas of the science, one behind another, began to declare, that they in their area find out natural information processes. These openings have introduced other tradition according to which computing began to be considered as a science about both natural and artificial simultaneously into use.

By old tradition computing was most naturally described by ideas from basic technologies – programming, graphics, networks and supercomputing. The present tradition urgently demands to express computing in terms of fundamental principles or even to deduce computing of some fundamental principles. If one deduced computing from principles not only its deep structures will be opened, but also their applicability in other areas of a science will clear up as well. Thus the general aspects of separate technologies also are opened, creating opportunities for innovations. At the same time essentially new ways of stimulation in many respects lost interest to computing among youth are opened.

In this paper the information technology for natural computations was introduced and studied with the limitation to the applicative computational system. Case study for the assumptions of object with object and abject with environment interaction was

evaluated. The first case gives rise to computations in applicative prestructure while second case leading to computations in applicative structure. The established evaluation map helps to verify and discover the computational invariants. This is significant for data analysis, object recognition and logical forms of determining the object properties in critical information technologies.

2. Objects and environment

2.1. Fixing the object

Attempts to fix object, assume it as something "ordinary" (and what is meant by "ordinary", it remains quite unclear and non-augmenting) did not bring the expected result. And it is not negligence of researchers -- they exhibit complete thoroughness and accuracy, and technologists made software, which itself is sound.

To understand the phenomenology of the object the explorer needs more perfect "instrument base", and in this case, faced with constraints of "ordinary" meta-mathematics, which rather awkwardly reflects real object in its notations.

Object also demonstrates its natural diversity: it is both prescription, and the result at the same time. As well can we cope with this?

2.1. Object-as-process

If we try to imagine object vividly, it turns out that we cannot say definitely -- quite determined, -- what is it. At best we can talk about its *possible presentations*. These possible presentations can be computationally observed, and their relationship forms the framework characterized by special mathematical properties.

Importantly, the object can show itself in an infinite many ways: it has a variety of forms.

"Computing distance" between the individual forms can be described in terms of "redex-contract" ("redex" means "reducible expression"; contract is understood as a limitation, convolution). On the way to the result a reduction of the object is done in the direction from the redex to contract.

During the implementation of the reduction the object interacts with the environment, "captures" disposed therein other objects that are in its sphere of reach, and these objects are recombined in applicative structure:

$$|| \bar{c} || \ env = c$$

In contrast, the way from the result, an object expansion occurs in the direction from object contract to its redex. During the expansion, the object is synthesized as a *combinator*, releasing previously captured objects which are returned to the environment, while remaining within its reach and scope.

Thus, the object is in a state of transition as redex-contract and is a process.

3. Way of thinking the objects

3.1. Traditional way of thinking

Entrenched way of thinking is to transfer the abstract and general mathematical theory on some given specific problem domain. Tacitly assumed that all mathematical concepts and the way they interact are well comprehended, and all explanatory system has great expressive power. So large that the chances are good for embedding substantive applied theory into pure theory, to obtain new results. All this led to artificial systems of explanation.

3.2. Artificial explanation

In developing *object theories* in computer science, which is performed by such a way, the researchers stalked a trap. In fact, the objects once thought of as abstract entities, and strongly linked to the models and explanatory systems prevailing in the discipline of *data structures*.

This resulted in that the artificial computing began to be explained even with more abstraction and artificiality. Trap for the researchers was that the theory of objects were appearing, but were not productive because these theories overgrown cumbersome notations and a lot of complications preventing the perception of details, hence they have not received the development and application, but for these reasons become *intuitively rejected*.

Interest in artificial computing quickly became lost, and the attractiveness of natural computing, by contrast, started to grow rapidly. Return to the "natural" explanatory systems replaces the culture of formalisms and logical forms of reasoning.

3.3. Natural explanation

An idea to explain the objects and their behavior *naturally* requires the adoption of certain principles. Then, based on these principles, the *explanatory system* is developing. We have to select the central beliefs that will fully characterize the range of the effects, in this case the are computational ones. So, there is one entity -- object, -- and another entity -- environment.

Object interacts with the environment so that the result of evaluation is *placed* in the environment. On the other hand an object in the interaction with the environment receives from environment the values and/or parameters.

4. Computational environment

4.1. Environment representation

The construction of environment should cause quite comfortable feeling: this is the place where the values of the objects are stored.

Hypothetically, the environment is a universe where there are both "deep" and "peripheral" parts. The details of the deep part are timely unknown, but its structure can help generation of a reasonable assumption. Peripheral part, on the contrary, is good "seen" and is known for not only its structure, but also for all of its components. Talking about from where the environment was taken, it could be argued that "at first it was nothing", but intuition suggests ideas as to imagine this idea of nothing.

The empty environment usually is denoted as a pair of parentheses: ( ).

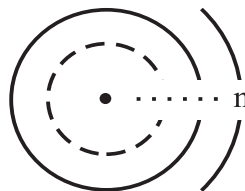In the Fig. 1 the layered environment is represented by the concentric arcs.

Fig. 2. Layered environment. A point in the middle is "deep" part of environment.

In the Fig. 2 the layered environment, where the correspondence "layer-object" is determined and known, is represented by the family of labeled concentric arcs. The upper labels indicate a relative layer depth, while lower labels being the objects identifi-

ers. In the middle the paired parentheses are used for indication the empty environment. The dark point in the middle marks the "deep" environment i.
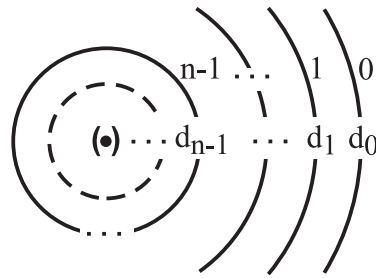

Fig. 2. N-layered environment with known object positions.

4.2. Interaction of an object and environment

4.2.1 Environment

A thesis, that interaction of objects needs the intermediary -- *environment*, is perceived as obviously. At least, currently it does not attract doubts. More rigorously, to initialize an interaction of objects, the structure is needed where they are localized.

Opposite case -- when some "wandering" objects "meet'" other wandering objects, -- is interesting, but this discussion will be postponed for a while. The area of programming gives a case when objects, by some way or otherwise, are already packed by in the environment. Thus a central concept under development is namely the environment which is understood as an environment for computations. Environment is equipped with the programming system, but not wise versa.

Other circumstance is that an object interacts not with all environment at once, but with its partition -- that which will appear "in an area of action" of the object.

4.2.2 Prestructure

An applicative prestructure is used for packing objects. Two aspects of an object -- redex (reducible expression) and the contract, -- reveal in it. In other words, the prestructure gives a representation of computation both in terms of a reduction -- transition from redex to the contract, -- and in terms of expansion -- transition from the contract to redex.

The principle of interaction gives some *non-symmetry*: there is an object-initiator of action and there is an object-recipient of action. Influence of one object on another is stepwise: it is carried out, if and only if objects are located immediately *beside*. The arrangement happens of two kinds: beside and not beside (distant), and in the second case the objects do not interact. In case of an arrangement beside, the objects immediately enter in interaction. The new object, as a result of interaction, arises and begins its existence -- result of acting, or applying of the first object to the second. Now, if there will be an object located beside thus newly born object, the new act of interaction begins where are two distinct cases.

In the first of them newly generated object captures the existing one, which has appeared beside and acts on it.

In the second case newly generated object is captured by the existing one which affects this object.

In any of these cases the new object arises and begins its existence and this object is considered as a result of such non-symmetrical interaction of two objects-parents. It settles in prestructure on the equal rights with other objects. In particular, this means

the following: as soon as the new object-result is generated, it is possible to speak about the new act of interaction.

Thus, the inhabitants of prestructure participate in interaction which evolves by a principle of a dominoe. The following circumstance is important: either there are *initial* atomic objects, or there are *derived* non-atomic objects, each having exactly two ancestors-parents. A question still open: where are the initial objects from, but this discussion will be postponed for a while.

5. Analysis of interaction

The object can be reveled in interaction with other objects if it participates in application. In this case it can show arity, equal to 0 (constant object) or distinct of zero. For simplicity we shall consider a case when the object shows arity, equal to 1 (unary function).

As interaction is carried out through the intermediary -- environment, -- then some metaoperators will be required. For a while, we shall be limited by two metaoperators: Λ -- currying and $\| \bullet \| \bullet$ -- evaluation map.

For any object M we shall check up, whether it can show arity 1 in the environment i. To obtain this we write down

$$\| M \| \; i \; d0,$$

which represents a value of object M in the environment i. If value of object M shows arity 1 then there is a construction of value of object in the environment

$$\Lambda \| M' \| \; i \; d0,$$

where M' is the same as object M everywhere, except for a variable to which we should assign the value $d0$: instead of this variable, the number of de Bruijn **0** is written as a prototype of a pointer to $d0$ in environment i'. Environment i' is the same as environment i everywhere, except for an image of this substitutional variable, which is now assigned $d0$:

$$\| M' \| \; [i, d0].$$

Actually, it was necessary to create a compound metaoperator

$$\Lambda \| \bullet \| \bullet : \text{object} \times \text{environment} \rightarrow \text{value},$$

which is object generating, setting up the function of arity 1. Really,

$$\Lambda \| M' \| \; i \; \; d0 = \| M' \| \; [i, d\_0],$$

where $[i, d0] \equiv i'$.

For example, if M is an identity transformation **I** with the characteristic **I** $d0 = d0$ then it is sufficient to assume, that M' is a substitutional variable which is assigned the value $d0$ in environment i:

$$\begin{aligned}
\| \mathbf{I} \| \; i \quad &\equiv \quad \Lambda \| \mathbf{0} \| \; i \; d0 \\
d0 \\
&= \quad \| \mathbf{0} \| \; [i, d0], \text{ where } [i, d0] \equiv i' \\
&= \quad \text{Snd } [i, d0] = d0
\end{aligned}$$

as was expected. Here $\Lambda \| \mathbf{0} \| \; i$ is an image of object **I**, obtained as a result of its interaction with environment. This should be simply a pointer *Snd* to $d0$, located in the modified environment.

Other example. If M is a cancellator **K** with the characteristic **K** $d1 \; d0 = d1$ then it is sufficient to assume, that M' is a substitutional variable which is assigned the value $d1$ in environment i:

$$\| \mathbf{K} \| \; i \; d1 \; d0 \quad \equiv \quad \Lambda \; (\Lambda \| \mathbf{1} \|) \; i \; d1 \; d0$$

$$= \quad \Lambda \parallel \mathbf{1} \parallel [i, d1] \; d0, \text{ where } [i, d1] \equiv i'$$

$$= \quad \parallel \mathbf{1} \parallel [[i, d1], d0], \text{ where } [[i, d1], d0] \equiv i''$$

$$= \quad (\text{Snd} \circ \text{Fst}) \; i''$$

$$= \quad \text{Snd} \; i' = d1,$$

as corresponds to the characteristic.

And one more example. If M is the allocator $\mathbf{S}$ with the characteristic

$$\mathbf{S} \; d2 \; d1 \; d0 = d2 \; d0 \; (d1 \; d0),$$

then

$$\parallel \mathbf{S} \parallel i \; d2 \; d1 \; d0 \quad \equiv \quad \Lambda \; (\Lambda \; (\Lambda \parallel \mathbf{2} \; \mathbf{0} \; (\mathbf{1} \; \mathbf{0}) \parallel)) \; i \; d2 \; d1 \; d0$$

$$= \quad \Lambda \; (\Lambda \parallel \mathbf{2} \; \mathbf{0} \; (\mathbf{1} \; \mathbf{0}) \parallel) \; [i, d2]\} \; d1 \; d0, \text{ where } [i, d2] \equiv i'$$

$$= \quad \Lambda \parallel \mathbf{2} \; \mathbf{0} \; (\mathbf{1} \; \mathbf{0}) \; [\; [i, d2], d1] \; d0, \text{ where } [\; [i, d2], d1] \equiv i''$$

$$= \quad \parallel \mathbf{2} \; \mathbf{0} \; (\mathbf{1} \; \mathbf{0}) \parallel [[\; [i, d2], d1], d0], \text{ where } [[\; [i, d2], d1], d0] \equiv i'''$$

$$= \quad \parallel \mathbf{2} \parallel i''' \; (\parallel \mathbf{0} \parallel i'') \; (\mathbf{1} \parallel i''' \; (\parallel \mathbf{0} \parallel i'') \;)$$

$$= \quad \text{Snd} \circ \text{Fst} \circ \text{Fst} \; i''' \; (\text{Snd} \; i'') \; (\; \text{Snd} \circ \text{Fst} \; i''' \; (\text{Snd} \; i'') \;)$$

$$= \quad \text{Snd} \circ \text{Fst} \; i'' \; d0 \; (\; \text{Snd} \; i'' \; d0 \;)$$

$$= \quad \text{Snd} \; i' \; d0 \; (\; d1 \; d0 \;) \; = d2 \; d0 \; (d1 \; d0),$$

as was expected.

6. Related work

An idea to drop down the computations into self-contained blocks with "nameless dummies" instead of variable was formulated by N. de Bruijn [1, 2] in 1970s. This early formalism appeared rather fruitful to solve distinct and complicated text representation tasks. This approach is known for researchers in theoretical computer science but is not used in modern information technologies (IT). Nevertheless, the related but much earlier ideas of M. Schoenfinkel [3] which were rediscovered by H. Curry [4] are successfully used in many branches of computer science and programming. This approach is known as a *combinatory logic* giving rise to applicative computational systems. But the "natural manner" of computations with *combinators* using then as "wandering" objects was, in fact, not used in modern IT. The natural computations using applicative computational systems were used at the basis of "computational invariants", formulated by V. Wolfengagen [5]. Earlier the idea to use combinators for composing Web-services was used by L. Cardelli et. al [6] but not became widely used in Web science and its applications. The new challenges of using computations with objects were analyzed by H. Barendregt et. al [7], G. Bell et. al [8] and others [9,10] but in relation with applicative computations.

The proposal here is based on the direct use of de Bruijn formalism in connection with combinatory logic to study the main computational effects which are promising in applying the models of natural computations [11, 12]. First, this is a study of object interaction and, second, the study of interaction of object with environment. The generality is in assumption that the environment can be assumed as an object as well. This assumption is distinctive from assumptions in use in area of programming language semantics.

A kind of natural computations was used by B. J. MacLennan [13] in conjunction with the information tasks of a molecular synthesis. At last, the general direction to assume computing as a natural science was argued by P. Denning [14].

7. Conclusion and future work

A computational model of natural computations is proposed. It is analyzed from a standpoint of object interaction.

1. A layered structure of computational environment is proposed describing the computational activity of the objects. The simplified assumptions as can be shown lead to a standard semantic model for programming languages. Less standard standpoint is argued to subdivide the environment into "deep" and "peripheral" parts. This gives rise to the natural computations model.

2. Studying the properties of this model shows that it can be represented in a step by step manner which can serve to developing a computational framework for object evaluation.

3. The proposed computational model can be used to discover and verify the various "computational invariants". As was shown the invariants are relative to the computational environment which has a layered structure.

This model can be embedded into host computational model based on applicative prestructure. The simplicity, flexibility and generality of this model are believed to be useful for semantic and computational analysis of Big Data discovering and using the computational invariants. The basic invariants can be chosen the same as the combinatory basis. The practically sound invariants can be derived using the applicative prestructure at the first stage and applicative structure at the stage of validation.

8. Acknowledgement

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TRAINING STUDENTS IN HOUSEHOLD FINANCE IS A LIFELONG WELLBEING BASIS

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Abstract. The article describes main features of the household finance discipline. Life circle or evolution of household is presented as transition from one household type to other. The main household types are suggested and the primary problems of each type are analyzed. The only possibility to achieve the lifelong wellbeing is to manage one's personal finance. Skills of successful personal financial management have to be implanted during the higher learning.

Keywords: household finance, financial planning, classification of households.

1. Introduction

The relationship between education and evolution of wealth at different periods, including being on retirement, is explored in some papers, e.g. [1]. We consider that an integral part of educational process should be studying of household finance. This course is new and is uncommon for Russian universities unlike foreign colleges [2]. The financial theory of household is developing in Russian science. But the problems of housekeeping and expenditure of private household money were timely in foreign countries already at the beginning of XX century, e.g. [3-5].

If the person is already retired in Russia, it is too late to change level of the wellbeing because the main financial processes are already complete. Thus the opinion is standard that the wellbeing had to be started to create as early as possible, in our case, from the moment of starting university studies.

We are engaged in the household finance direction for nearly 10 years. Full structure of household finance training course is presented in paper [6]. Household finance course is read to students of economic and banking faculties of Tomsk State University. Initially the course appeared as an initiative but now it is an integral part of educational process.

2. The main items of the household finance course

2.1 The features of the course

Our main point is that the person with a higher education degree has to be a professional not only in the subject domain but also in the field concerning his household management. As eventually the person works to live.

1. The first feature of the household finance course is creative understanding of finance. Finance is the sum of activities in creation, use and management of monetary funds. That conception allows to mark out the financial perspective in all types of personal activities.

2. The other feature of the course is an objective of the research. This objective is the household. So many standard subjects (for example, taxes, insurance, etc.) are considered from a position of an individual household.

3. The third feature is a micro level of the research. It means the object of research is real, individual, typical households. It begets the problem of interdisciplinarity. The urgency is explained by absence at a household of organizational structure unlike the enterprise. For effective activity a householder has to use results of researches of various scientific disciplines: finance, economy, psychology [7], sociology, it is right [8], medicine [9], etc. This complicates studying of household as object of researches and publication of the research results. Research of households at macrolevel: their behavior in economy and in the financial markets is presented in literature [10].

The main purpose of household finance course is to make students consider professional to finances of their households. It means the broadest use of planning in private life. The dissertation devoted to theoretical and methodological questions of financial planning in households passed the defense in 2012 [11].

In order to study features of student's households and to improve our course on this basis, surveys of students about types of their household, elements of financial structure, the income, expenses, the financial purposes are annually conducted. The survey results are published [12]. The survey helps each student to analyze finance of their own household.

2.2 Household: definition and types

The household is understood as a certain person or a family possessing a property complex which includes the dwelling, the property, financial assets, has more or less regular sources of the income and expenses and lives in a certain place (has an address).

The significant methodological principle of our research consists in a specific understanding of life cycle of householders as an evolution of the main types of a household.

At this stage we assume the following main types:

1. «Primary» household – separately living natural person having all elements of a household.

2. «Simple» – the union of the man and the woman, a legal or civil marriage.

3. «Full» is the family formed by parents and children?

4. «Full the plus» household includes adult children. Children can have their own income.

5. «Full the minus» is a household when adult children moved from the parents and formed their own households.

6. «Asymmetrical» is household formed as results of divorce or death.

There are specific financial and other problems for each household type. It is necessary to examine typical financial structure of household. The main elements are financial manager, incomes, expenses, funds, reserves, investment (financial assets), insurance protection, and debt (fig. 1). These elements form the household budget in total.
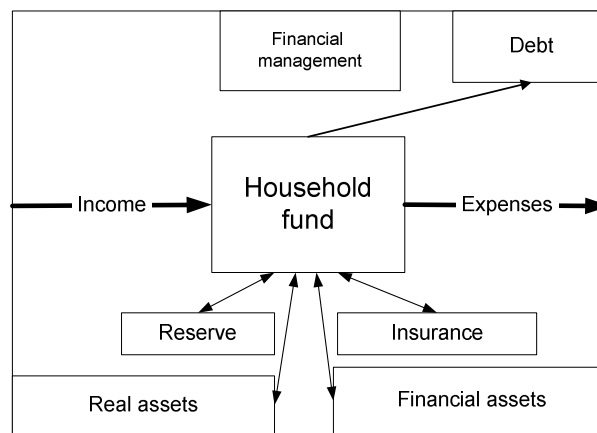
Fig. 1. Financial structure of primary household.

1. Thus the main financial problem for primary household is creation of a continuous source of the income. In other words, it is transformation of the householder into a basic asset. The basic asset, in our understanding, is possibility of the householder to generate a flow of the income, i.e. to receive return from the human capital [in more detail, see 13]. One of components of a basic asset is health of the householder. We consider health as possibility of the person to work and gain income [9]. Staying of the householder in primary household allows him to get real skills of financial management. Stable income sources have to be created at this stage of the household evolution.

2. The main tasks for simple household are:

– joining up two personal financial systems and creation of joint finance [in more detail, see 14];

– development of new non-financial roles (husband, wife);

– creation of property base of the union.

3. The traditional cause of family creation is the birth of children. It demands formation of the proper funds. Therefore in a full household the main financial problems are connected with absence of family aspect in the financial legislation of the Russian Federation (there are no family bank accounts, practical lack of the family taxation, etc.), and also with sharp falling of the average per capita income in a household at the birth of children.

4. The main financial problem for a household «full the plus» is separation of the adult child in a financial aspect and creation of conditions for formation of child's primary household. That is nonconventional for Russia: adult children live together with parents long time.

5. At last, for a household «full the minus» the major problem is financial understanding of new life without the children, often coinciding with a retirement. Lately publications on the subject of «the second age» came out in the Russian scientific literature. The cycle of Y.A. Belyaev' articles describes «the second age» term in more detail in our journal [e.g., 15].

As we already wrote, many universal problems in the Russian Federation look in a different way compared with the American approach that is connected with system of the Russian financial law. For example, the American textbooks contain the huge section «retirement planning» [2]. In Russia there is no concept of retirement planning and modern Russian pensioners have no pension plans. So that, the only possibility to achieve the lifelong wellbeing is to manage your personal finance. There is popular a pension migration, as a way of improvement of level of the wellbeing. It is available generally to capital pensioners.

Large information volume is necessary for professionalizing of household financial management. Internal (about the household) and external (economic and financial performance) information are needed. It can be received by maintaining the account on papers (record, housekeeping books) or by using software on personal finance. But receiving system information on a household takes the qualitative household accounting [16].

Householder's activity in the financial markets is difficult because the finance is not a profession for many householders. Thus the problem of financial consulting is urgent. As shown in our works, financial consulting in Russia is supplied to households and persons very rarely [17].

3. Conclusion

In conclusion, the compensation index (the ratio of average pension to an average salary) is rather low in Russia, about 40 % at present time. And the main way of lifelong wellbeing improving is a creation of own funds, investments into work period. Skills of successful household financial management have to be put in schedule of higher education courses.

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INTRODUCTION INCLUSION IN SOCIETY FOR ITS WELL-BEING

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Abstract. The work describes the key enablers Russia's practice of isolation of the disabled in social life. On the base of analysis of feeling pity is a leading , in the opinion of the people working with children with disabilities. It was determinated the main problem of making a society more friendly to people with disabilities.

Keywords: inclusion, disabilities, children, society, well-being

1. Introduction

Who are the people with disabilities? These are people who suffer from growth retardation, blind, hearing or even slightly deaf, as well as people with disabilities for any other reason . But the most important thing that they are People with a capital letter.
Most people with such disabilities are much more humane and kinder than other people. Have you ever see the cruelty of children in relation to the children with disabili-

ties? Why was it generated? Is it possible to make the community happy, just taking it bounded away from other people, just because most do not know how to communicate and adapt to constant contact with people who have a disability?

2. Interaction between society and people with disabilities

Every person in his childhood, sooner or later experienced ridicule, harassment by their peers. All this could be caused by the most seemingly innocuous reasons: chubby cheeks , freckles or easy rhymes surname. You can not lose sight of the fact that children, expressing their special relationship to the other, say exactly what is imbedded in their heads parents or older people from their surroundings. That is all relevant to the person with disabilities is formed by adults, and because of this, children perceive their behavior, which is an example for granted, it is valid

Small child in kindergarten never even think to laugh at a toddler who is different from himself. He sees him as he is, that is in his head already formed by the fact that people are different, but equally they are equal. In the process of growing up, the kid understands that there are still people who are older than him, he helps an elderly person to carry their bags replaced in transport, and so on. So it is with special people: he knows that the person in a wheelchair or need to hold the door to shake hands, it does so not out of pity, but quite naturally, simply and harmoniously coexisting with any, all type of people in society.

What happens to children with disabilities who fall into an unprepared social environment? On the immature child's psyche dumped in just enough negative consequences of bad manners and the unwillingness of society, that why parents of children with disabilities prefer to isolate their child from that stage. Further, it is encouraging socialization and slowing down, for the child, and may be the adult «coming out» to become a huge test that not everyone has the strength to go through. The reason for the isolation of people with disabilities is as psychologically aspect and weak infrastructure, lack of ramps, special transport, etc.

The results of public opinion polls confirm the presence of modern Russia's practice of isolation of the disabled in social life. So, according to the survey conducted by the VTSIOM by Fund of support of children in difficult life situation, the majority of Russian citizens (60%) there isn't any people with visual disabilities. Every second rarely sees people with disabilities in public places or not meet them at all (40%) [1].
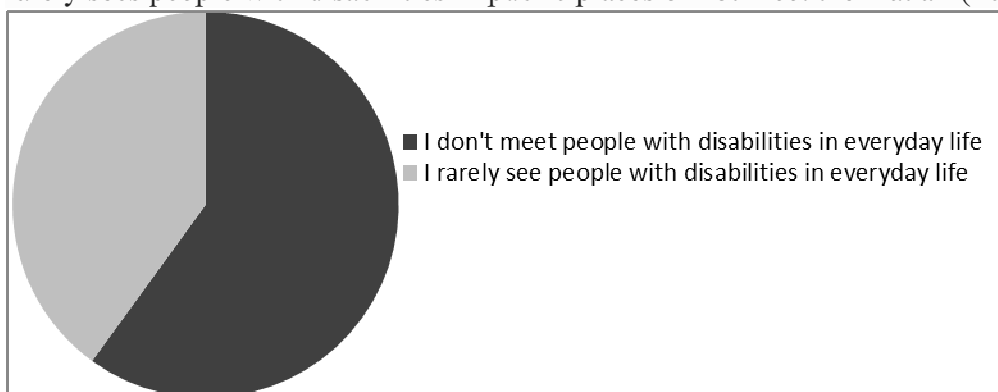

Fig. 1. Contacts with people with disabilities [1]

Thus, the level of population awareness about children with disabilities opportunities currently remains at a rather low level. Detailed information about these children, their lives, problems are only those who directly communicate with them in everyday life - parents and relatives, friends, professionals working with such children, etc.

The main ideas that form the attitude of the population to children with disabilities who openly support about a quarter of Russians, include the following: «children with disabilities are more likely just born in dysfunctional families, children-invalids cardinal differ in their human qualities to the other children.» Unknowing about the causes of diseases that cause disability, people believe that the birth of children with disabilities opportunities associated with unsafe families, and primarily with bad heredity or wrong way of life of parents (alcohol, drugs, etc.), which in most cases does not comply reality. According to the poll results, Russians confirmed that most often they have for disabled feeling of pity (87%) [2].
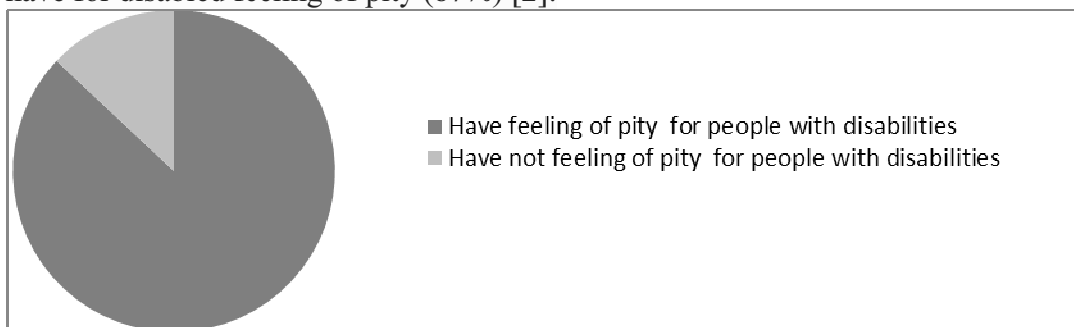
Fig. 2. Feeling of pity [2]

On this basis, we often try to fence themselves from contact with people with disabilities, or to help them (financially). Pity is a leading feeling, in the opinion of the people working with children with disabilities. But this feeling prevents children gain confidence, hampers their development, leads to the fact that children cease to perceive themselves as part of society in general.

3. How to make a society more friendly to people with disabilities?

1. Observes the right of the child to live and be reared in a family - side society's no pressure on the parents about the child abandonment that regularly practiced, for example, doctors.

2. The child psychologically comfortable to live in society of children-invalids treated as regular children, do not separate out category.

3. The society is open for communication with disabled children, not social isolation of the child, the inclusion of a disabled child social life.

4. Surrounding show respect to people with disabilities; know how to enjoy their achievements, even if healthy people they seem to be trifles; they understand and appreciate their efforts; prepared for the fact that not always disabled children able to do everything that we can have healthy children, to be ready to help them in some situations.

5. There are no social barriers in access to those or other public benefits, there are equal opportunities for ordinary people and disabled (the ability to move freely, to travel, to get education, profession, employment, etc.)

6. There is no aggression in relation to these young people are treated with understanding, ready to support and to take care of them.

7. The needs of these children and their families, their parents are not should face up, for example, with employment problems.

8. The dominant feeling from the population in relation to people with disabilities is respect, not pity (as it is now).

Figure 3 presents the diagram with number of this of disabled persons per 10 000 population.
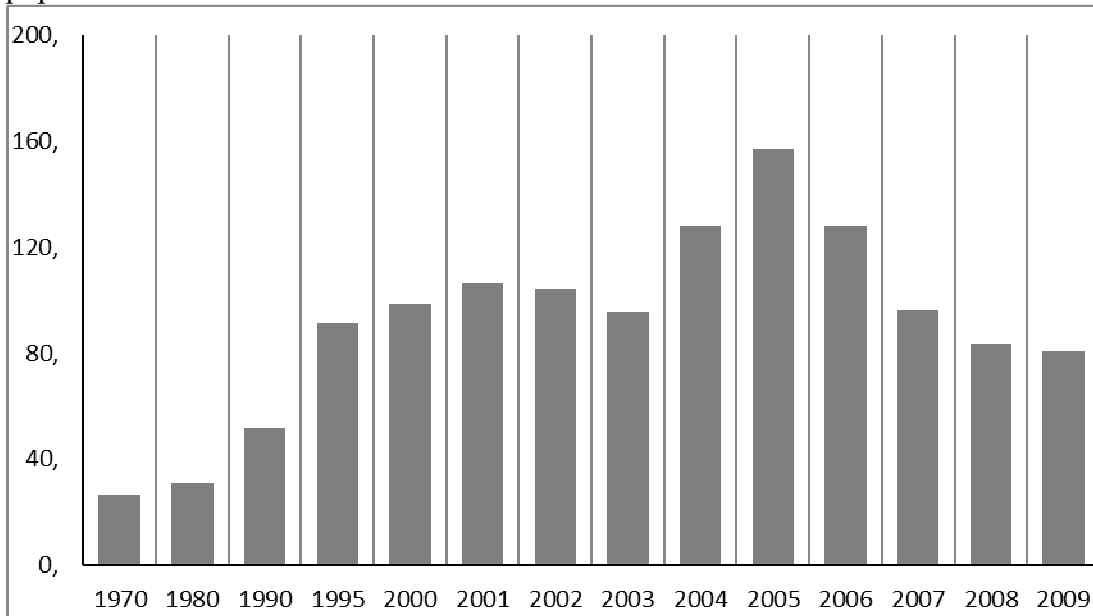

Fig. 3. The number of persons with disabilities [3]

On January 1, 2009, according to Rosstat, the total number of people with disabilities in the Russian Federation exceeded 13 million people - more than 9 % of the population. For comparison, in 1988 the number of the disabled did not exceed 2% of the population [4].

Policy of Russia is directed to improvement of life of people with disabilities. Main principles of formation of policy towards people with disabilities:

1. The state is responsible for the elimination of conditions leading to disability, and the solution of issues, associated with the consequences of disability.

2. The state provides persons with disabilities have an opportunity to achieve with their fellow citizens living standards, including in the areas of income, education, employment, health, participation in public life.

3. Disabled persons have the right to live in society, the society condemns isolation of the disabled. To this end, the company strives to create conditions for an independent life of the disabled (no barrier environment).

4. Persons with disabilities recognizes the rights and responsibilities of citizens in a given society. State competence are the ways to recognize, guarantee and implement the rights and duties of persons with disabilities as members of society.

5. The state is committed to fairness of social policy towards people with disabilities throughout the country, regardless of where the disabled person in rural or urban areas, the capital city or province).

6. During the implementation of policies regarding persons with disabilities should take into account peculiarities of individual or groups of persons with disabilities: all disabled due to my illness are different initial conditions, and to ensure the rights and

responsibilities of citizens in relation to each group of invalids is carried out a complex of measures.

State policy currently remains the main public mechanism in identifying, categorizing and legalization of disability and continues to be an essential element in the design and maintenance of dependent status of people with disabilities.

In the Russian debate on social policy towards people with disabilities along with the endorsement and adoption of the ideas of integration raises the issue of costs and benefits, and the quality and range of existing social protection measures remains a secondary question. In social legislation and programs include the necessary requirements of accessibility and integration, but in practice it is not always possible to speak about readiness and capabilities to provide the declared and to achieve the designated goals.

As concerned about people with disabilities abroad? Traveling across the UK, each person can see a very small amount of underground passages. The reason for their absence is the inconvenience associated with their use by people with disabilities. All British city buses equipped with a platform on which to beauty rise disabled people and mothers with baby carriages. Toilets for disabled people in Britain equipped weight of the latest special devices allowing limited in mobility of people. These special amenities are standard in every supermarket in all public areas and even in official offices. And this is not surprising: approximately 19 percent of all working British people have a disability.

Israeli law encourages people with disabilities to work. For example, to purchase a private vehicle to the working disabled even beneficial, for the subsidy on the purchase of two times higher than the unemployed. They understand that for a disabled person employment is the way out into the world, social adaptation.

But in any case, the life in a wheelchair - severe stress for the human psyche. Came to help one Israeli company to build an alternative to a wheelchair so-called external skeleton. He is a device for paralyzed legs with electronic control. Putting on such a device, the disabled person can stand, sit, walk and even climb up and down the stairs. People in the US have the opportunity to receive daily meals with home delivery. In addition, they are given so-called food ration cards to buy products at a discounted price.

In comparison with Russia, the level of life of people with disabilities abroad is higher. They are much more developed infrastructure, the children have the opportunity to train together, maybe that's why people's lives abroad more prosperous.

Healthy modern society - it is not primitive flock, where the main criterion for survival was a single individual physical health , her strength, endurance, speed , and multifaceted team of very different personalities, in which the value of each - is the level of its development and implementation of completeness inherent psychological qualities. Our future depends on the level of collective mental, which contribute to making each person without exception.

4. Conclusion

Inclusive education is equally useful, more precisely, simply necessary for the development of both special and ordinary children. The lower the age of the child, falling in the children's group, the sooner he formed mechanisms of adaptation in society, plays the role species and acquired skills of communication with any person, regardless of the state of physical health.

Healthy modern society - it is not primitive flock where the main criterion of survival was the physical health of the individual, her strength, endurance, speed, and versatile team of very different personalities, where the value of each is the level of its development and full implementation of congenital mental qualities. Our future depends on the level of development of collective mental, which makes a contribution to every person without exception.

5. Acknowledgements

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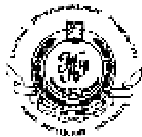# Lifelong Wellbeing In The World

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