
ANNOTATIONS OF THE ARTICLES

T.D. Degtyareva,Doctor of Economic Sciences, Professor, Director of the Institute of Problems of the Regional Governance,
Orenburg State Agrarian University**REGIONS PATENT ACTIVITY AS THE FACTOR OF INNOVATIVE ECONOMY DEVELOPMENT**

Patent law is a powerful incentive for the development of the processes of building and using innovations in all types of economic activities. It is especially important in the conditions of formation of innovative economy in Russia. In connection with this, the problem of patent activity intensification in its region is actual. The purpose of the article is to study patent activity in the regions of the Volga Federal District (VFD). We used regression and structural analyzes and the rating assessment. As a result of the study, we built econometric models which led us to the conclusion that a number of granted patents is the most influential on increase in VDF innovation production and the impact of patents for inventions and utility models is practically the same. It is shown that patent activity in regions significantly heterogeneous in space and time for both patents and patent applications; in regions with a low patent activity it is necessary to intensify the development of their intellectual potential and to implement measures of increasing its use.

Keywords: patent activity, structural and temporal analysis, regional level, rating evaluation.

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REGION AS QUASICORPORATION: STATISTICAL ASPECT OF COMPETITIVENESS

The aim of this article is the statistical research of the regions competitiveness (at the level of region, Federal District and Russia as a whole).

In the article the statistical methods are applied: the analysis of temporary ranks allowing to estimate changes in time of the main indicators of the region competitiveness; the cluster analysis applied as a method of multidimensional classification of regions; calculation of localization coefficients on types of regions cluster structure.

The productive indicators of the region competitiveness level are: a gross regional product on one employed in economy, production of a gross regional product for one ruble of fixed assets, a gross regional product for one ruble of investments, a share of balanced financial result in a gross regional product.

The competitiveness indicators dynamics across Russia in general is identical to dynamics of indicators across the Volga Federal District and the Samara region. The indicator of a share of balanced financial result in a gross regional product is subject to the maximum fluctuations. The degree of territorial distinctions of a gross regional product in comparison with number of employed in economy is estimated by means of localization coefficients. For cluster groups of regions mining is more differentiated; production and distribution of the electric power, gas and water is less differentiated.

In the article the quantitative assessment of regions competitiveness according to the concept «Region as quasicorporation» is offered. The results of a research can be applied by federal and regional executive authorities as the information basis when developing programs increasing competitiveness level of regions of the Russian Federation.

Keywords: *statistics, competitiveness, dynamics, clusters, region.*

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ECONOMIC MENTALITY AS A FACTOR OF NATIONAL ECONOMIC DEVELOPMENT

One of the main tasks of modern economic science is a task of the taking into account a role of informal institutes in economic development, and consideration of ambiguous interaction of modern processes in world economy with traditional institutes.

One of informal institutes of society, namely, national economic mentality as one of the important factors defining a trajectory of social and economic development of the country is presented in article.

Characteristics of the Russian mentality are considered, necessity of correlation of any social and economic transformations with specifics of the existing economic system is designated, because such transformations can be successful only on condition of their compatibility with the institutional environment of society

This principle is important for definition of ways of development of economic system of Russia, as the analysis of reformation initiation in our historical prospect shows not always a positive effect from transfer of foreign economic models on the Russian soil.

Keywords: *economic development, mentality, economic behavior of people, social and economic transformations, economic system.*

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FOOD SECURITY AS AN ECONOMIC CATEGORY AND FACTOR OF THE STATE SAFETY

The relevance of this article's themes is that in recent years the problem of food security in Russia and in the world economy is becoming more acute, which is caused by the inequitable distribution of food. The goal of the article lies in justifying the necessity to use the concepts of «food security», «food security providing», «state security» primarily as economic categories in the economic theory and economic practice, to give more definitions of these concepts as economic categories, to justify their interdependence and the increasing role in the modern economic system. As a methodological basis of the study a number of general and local methods, including verification, analysis and synthesis, historical approach to the analysis of economic phenomena and processes, is used. The use of these analysis methods helped to reveal the emergence retrospectives and the diversity of modern interpretations of the terms «food security», «state security», «food security providing», «state security providing», which even in the scientific economic sources rarely are treated as economic categories. The variety of interpretations of these concepts considerably complicates the formation of scientifically grounded economic mechanism of practical solution of problems associated with increasing global threat to food security as a socio-economic phenomenon. The different interpretations of these concepts are analyzed and summarized in the article, the basis for their definition as economic categories are proposed, and also the concepts «food security» and «food security providing», «state security» and «state security providing» are divided as economic categories. The conclusions are that providing the food security of all subjects of domestic economy is the most important factor in providing state security. The article may be useful for researchers of economic theory problems and national economic policy.

Keywords: economic category, food security, state security, security providing, economic policy.

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IMPACT OF TRAVEL AND TOURISM INDUSTRY ON SUSTAINABLE ECONOMIC DEVELOPMENT

The influence of travel and tourism industry on sustainable economic development is considered in the article. The presented work explains the structure of regional income, including direct income, indirect income, induced income and total income of travel and tourism industry.

The author revealed and justified the factors of region sustainable economic development, such as growth of domestic consumption of a travel and tourism product, tourism infrastructure development, government support of the tourism industry, and increase in investments.

The paper presents and statistically justifies the role of travel and tourism industry in creation of new job places and employment security of a region and the country as a whole. It shows quantitative contribution of travel and tourism industry not only for regional development, but also for national Gross Domestic Product.

Based on statistical data, the development dynamics of travel and tourism industry in Russian Federation, as well as prospects for the next 10 years are presented.

Keywords: *travel and tourism industry, direct income, indirect income, induced income.*

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ECONOMIC SECURITY OF A REGION: SPATIAL ASPECT

In modern conditions, the issues of economic security of territorial systems play an important role because the level of socio-economic development of regions determines the national security. However, the term «economic security» recently entered the scientific circulation, which actualizes the need to study the conceptual apparatus of the discipline «Economic Security». The approaches to the interpretation of the concept «economic security of the region» are considered in the article, and five approaches (static, functional, organizational, situational and combined) are pointed. The necessity of involving of the spatial approach is justified; the dualistic nature of studied concept is shown. Authors describes the main indicators for the effectiveness assessment of the development strategies of the Russian Federation subjects, the indicators of diagnostics of their economic security level. The obtained results can be used for further scientific research of theoretical bases of activities aimed on ensuring of the national economic security.

Keywords: economic security of the region, spatial approach, integration.

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COMPETITIVENESS AND ECONOMIC SAFETY OF THE RUSSIAN-BELARUSIAN BORDERLAND: REALITIES AND PROSPECTS

The importance of the research problem is caused by the processes of globalization of the world economy, and the rethinking of the principles of safety providing and spatial development.

The purpose of this article is to assess the prospects of the Russian-Belarusian borderland competitiveness improving while ensuring the economic and ecological security of the cross-border region.

The main approach to the study of this problem is a systematic approach that allows representing a set of economic processes in border regions as a complex dynamic system, with its geographical, ecological, economic and institutional dimensions. There were also used methods of statistical data analysis and of normative-legal acts, regulating the issues of national security and border cooperation.

In the article, the author considers the most important functions of the cross-border region for the Russian Federation and the Republic of Belarus such as national security, transit and compensation (the use of differences in the industry structure and in the development of natural resources and employment potential of cross-border territories) functions. Among the features of the economical and geographical position of the Russian-Belarusian border regions, the border and peripheral positions are singled out. It is concluded that the orientation to the innovative type of economic growth and the ecologization of the economy in the Russian-Belarusian border area (the transition to a green economy) are more favorable. The main efforts to ensure environmental and economic security should be directed to the elimination of imbalances in socio-economic and territorial development, to the improvement of transport, information, social and educational infrastructure.

The results of this article may be useful for regional authorities for shaping a strategy of integrated development of territories.

Keywords: borderland, economic and ecological security, peripheral position, cross-border cooperation, competitiveness, green economy.

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THE MAIN INSTRUMENTS OF CLUSTER POLICY IN A MODERN ECONOMY

The preconditions of cluster policy and cluster strategy development in modern economy are explained in the article. The factors promoting cluster policy like effective enhancing of investments in a private sector, cluster initiatives with strong industrial leadership, the competition, cooperation, commercialization of researches, a critical mass of human capital, advanced training, etc. and factors counteracting development of cluster policy (basing strategies on short-term competitive advantages of direct foreign investment use, excessive specialization in specific sectors, insufficient differentiation of a cluster concerning other clusters in the same sector, etc.) are considered in it. The tools and means of clusters development support (a direct financial support, tax incentives, innovative funds, state programs of decrease in risks, protection of intellectual property, target grants on researches) are given on the example of different countries. The analysis of cluster policy in Kazakhstan is provided.

Keywords: cluster strategy, direct financial support, innovative funds, target grants.

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HISTORICAL MEMORY: PROBLEMS OF MANIPULATION

In the modern era of humanitarian thought the surge of interest in the problem of memory is evident. The main reasons for this are fundamental changes in our society. Our society faces a choice - what to remember and what to recollect of its past. Scientists who study and develop memory problems came to the conclusion that it is possible to form memory from the past which is necessary for the present by manipulating the images of the past. The present paper examines the methods and manipulative practices used by the state for the manipulation of historical memory. The philosophical analysis of the problem of memory manipulation produced by P. Ricoeur from the standpoint of philosophical hermeneutics is investigated. We came to the conclusion that the manipulation of memory is a latent violence and it is connected with the activities of the state.

Keywords: *memory, historical memory, manipulation, ideology, identity.*

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MALE AND FEMALE BEHAVIOR MODELS IN THE «LENSES» OF GENDER MAINSTREAMING: THE CHANGE OF VALUES IN THE RELIGIOUS DISCOURSE OF MODERN RUSSIA

The author of the study points out the significance of the religious identity in the post-secular Russian society.

As a result of the conducted study it has been managed to point out a number of factors influencing this process. In particular, the influence of mass media discourse is one of such factors. These factors become sources of female and male behavior models for the modern believer.

Two questions were formulated in the course of the study: is the concept of gender in Russia ideologically neutral? In what respect does it make sense to talk about the experience of institutionalization of gender-based problems in modern Russian society?

Critical discourse analysis was chosen as a tool of the research. The materials of conservative focus were analysed on sites from 2012 up to the beginning of 2016. Sustainable options of the norm in understanding of male and female behavior models, allowing detecting the peculiarity of the coverage of gender issues, were taken into account.

The theoretical part of the performed research was aimed at the identification and analysis of the factors of institutional change influencing the state of society in general and in the case of transformational risks. Based on the assumption that in the modern society the main influence is exercised through communication (N. Luhmann), an appeal to the analysis of communicative strategies, specified in the discourse, has become fundamental.

Keywords: *gender, post-secular society, formation of religious identity.*

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HARDWARE SUPPORT OF ARTIFICIAL INTELLIGENCE IN THE FORM OF FUZZY CONTROLLER BUILT ON THE DISTRIBUTED ASSOCIATIVE MEMORY

Modern intelligent control systems are implemented mostly in software based on databases multilevel fuzzy linguistic variables, which allow switching from one language variable to another. However, in such systems, feedbacks from control subjects either are not taken into account or not in full. Further implementation of these algorithms via programming methods on classical computers requires a lot of time, and the use of parallel solvers leads to large hardware costs. The aim of the study is to develop a fuzzy controller, which allows implementing effective management of complex objects based on fuzzy algorithms. The article discusses the method of creation of intellectual systems, decision-making and management with use of the hardware and software. The hardware of the fuzzy controller is implemented on similar computing structure in three-dimensional space in the form of a cube which each cell represents an element of the distributed associative memory. Use of chains of feedback allows receiving more high-speed system of artificial intelligence working in real time.

Keywords: *fuzzy system, associative memory, cube, intelligent system, database, linguistic variable.*

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**PLANNING AND STATISTICAL PROCESSING OF THE EXPERIMENTAL DATA
IN THE R PACKAGE**

The theory of experimental design is widely used in management of production processes. The use of experiment design in practice consists of two aspects: the experiment design development automatization and processing its results. Experiment data is usually processed by variance analysis or regression analysis, which are based on the general linear model. The practical implementation of such calculation is available in all specialized statistical packages, but modules for experiment design are not built in every commercial program for professional data processing. One of them, most widely used for designing experiments - Statistica, has a separate module for the processing the data of industrial experiments. The main disadvantages of commercial software for planning and processing of experimental data are high price and the lack of flexibility in implementing the experiment processing in the real production. Currently, the market of software for statistical data processing has revealed a steady positive trend in the share of free open source software. One of the leaders of such software is R, which is capable of flexible implementations of algorithms and data processing techniques due to numerous built-in packages. However, for the application of R the engineer conducting experiments requires programming skills and deep knowledge in the field of statistical data. The aim of this paper is to implement the algorithm of data planning and processing on the real example of industrial engineering enterprise in R environment. The algorithms implementing various experiment plans in R package and methods of data processing based on general linear regression model are given. The technique of the research and the program code in R, which can serve as guidelines in self-planning and implementation of the calculations, is provided.

The results of industrial experiment allowed determining the optimal control parameters of grinding high-speed steel plates and reducing the cost of their manufacture at the engineering enterprise.

Keywords: *industrial experiment, experiment design, experiment data processing, R, general linear model, experiments in engineering.*

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AUTOMATED DECISION SUPPORT IN THE FIELD OF SOCIAL SERVICES

Current reforms in the country are aimed at harmonization of all spheres of life. They also demand changes in the social sphere. These changes have to lead to the creation of highly effective system of social service of the population of the Russian Federation. Problems of quality improvement of this system, efficiency of activity of social institutions are urgent today.

However, in Russia accurate approaches to assessment of efficiency of activity of social services and, in particular, to assessment of quality of the social services provided to the population were not created. Determination of criteria and indicators of services quality assessment of the social sphere is an urgent problem today.

Authors of the article developed the program complex consisting of expert system and two systems of decision support (DSS).

The base of expert system rules allows to define a possibility of rendering the chosen social service in the application of the client. The functionality of two DSS allows defining a type of available social service based on the data obtained as a result of work of expert system. It also judges quality of the provided social services to the population on the basis of aprioristic ranging of the developed evaluation criteria. DSS scores the staff

of the analyzed institution of social service of the population by means of a method of expert estimation of «360 degrees» and forms reports and recommendations concerning competences of the employee by the received results of estimation.

Keywords: social services, quality assessment of social services, evaluation criteria, evaluation of staff.

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METHODS OF THE EFFICIENCY INCREASING OF PASSENGER CARRIAGE WITH URBAN ROUTED TRANSPORT

The urgency of the research problem is driven by the social importance of urban passenger traffic, the need to increase self-sufficiency and to reduce the size of subsidies for urban passenger carriage on the one hand, and the requirements of improving the quality of passenger service on the other hand.

The purpose of the article is the justification and development of management practices aimed at improving self-sufficiency and quality of passenger urban routed transport service based on the optimization of the capacity and distribution of vehicles on routes with the help of minimizing the unit costs caused by suboptimal usage.

Leading method used for the study is mathematical modeling of passengers routed transportation, which allows to identify cost reduction reserves for the organization and execution of carriages and to improve the quality of provided services.

The dependence for determining the optimal values of passenger vehicle capacity for a unit qopt with respect to daily traffic flow variability was derived in previous studies. The technique determining the optimum standard size and models of vehicle to work on routes and forming transport company vehicle fleet on the basis of the optimal

structure is given for routes, based on the criterion of minimum losses caused by non-optimal occupancy vehicles working on the routes for a specific time period (hour, shift, day). The method also allows to distribute the fleet of technically serviceable vehicle available to carrier for following the routes providing minimum losses due to their sub-optimal number and structure.

The article can be useful for solving many problems of organization and management of urban routed passenger transport traffic, its use in practice allows to obtain the optimum capacity values, the required number of types and models of vehicles and headways.

Keywords: optimal occupancy of vehicles, the efficiency of passenger traffic, the coefficient of places occupied, loss of time for passengers, the distribution of the vehicle fleet.

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EXPERIMENTAL INVESTIGATIONS OF BOX BEAMS VIBRATIONS

In the article the natural frequencies of the cantilevered thin-walled bar vibrations of box beam were defined. Numerical simulation of the bar in the Autodesk Inventor system and full-scale experiment on the method of frequency smooth change of sinusoidal oscillations, statistical processing of the results of full-scale experiment and analysis of the received data were carried out. The samples were steel bars from rolled sections. Through studies, in addition to the flexural vibration modes, the natural frequencies of torsional vibrations were accurately determined. The ratio of the amplitude values of sensors motions was used to determine the vibration mode. When carrying out statistical processing of experimental studies it was found that the misses in the received ranks of experimental data were absent and the results of testing submit to the normal distribution law. The difference between the results of numerical simulation and full-scale experiment did not exceed 10.45 %.

Keywords: thin-walled bar; free vibrations, vibration frequency, vibration mode, the method of frequency smooth change.

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