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FORMATION OF DISPERSE COPPER POWDER IN ANODIC SPACE IN SULFURIC ACID SOLUTION

Abstract. The proposed article considers the dissolution of a copper electrode in the anodic polarization of a metal in the presence of a Ti (IV) ↔ Ti (III) catalyst system and the formation of an ultradisperse powder that have passed into a solution of copper (II) ions. Electrolysis was carried out under standard conditions in a sulfuric acid medium in an electrolyser with unshared spaces using DC. During the anodic polarization of copper electrodes copper ions (II) are formed. The copper (II) ions transferred to solution on the anode surface are reacted with titanium (III) ions to form a nanosized copper powder. As a result, a solution of colloidal copper is formed. The oxidized titanium (IV) ions diffuse in the direction of the cathode and are reduced to the trivalent state. It is shown that the ions of trivalent titanium reduce the ions of divalent copper formed at the anode to a nanoscale metal powder. Thus, in the course of electrolysis, titanium ions in the electrolyte form act as a continuous catalyst system. It is established that the stability formed in the anode space during electrolysis of solutions of colloidal copper varies with the concentration of titanium (III) ions.

Key words: copper, powder, electrolysis, titanium, catalyst, electrode, cathode, anode.

In the production of modern techniques copper powder is in great demand [1-5]. Copper powder is used in the welding technique for the alloy, in the work of special cutting, in the preparation of lubricants. Dispersed copper powders are used in various branches of technology and industry, in particular, for the manufacture of products in the electrochemical, automotive industries, as well as for the production of high-quality plating metallic lubricants with a wear-free effect.

Recently dispersed copper powders of spherical shape are widely used in 3D technology.

Metal powder can be obtained in different ways. They are divided into mechanical, physicochemical, hydroelectrometallurgical methods and a method of spraying [6–9]. And the process of obtaining nano-sized copper powder through electrolysis is still poorly understood. Therefore, the study of the influence of various parameters on the process of obtaining and the formation of copper powder through electrolysis is of great importance.

According to literature sources, the bulk of copper powder is obtained by electrochemical methods [10]. All processes of copper powder production are well studied [11-15]. The dimensions of the copper powder obtained by the known method is 40-100 micrometer. And the problems of obtaining metal powders of dispersed and nano-size remain open. Various scientific studies are carried out to develop a rational method for producing ultrafine copper powder. Our early research works prove that the formed copper powders obtained with the participation of electrolysis with titanium ions (IV) and alternating currents have smaller sizes [16, 17].

With the participation of alternating current, copper (II) ions are oxidized in the cathode period to a metal powder, and in the anode period slightly dissolves and dispersion increases, large parts are ground and eventually copper powders of 0.1-0.3 um are formed.

The possibility of obtaining ultrafine copper powder in the cathode part using the catalytic system Ti (IV) ↔ Ti (III) indicated in early writings of professor Baeshov A.[18-20]. Our detailed studies have shown that the copper powders formed during the cathodic oxidation of copper (II) ions at high current density immediately grow in size after formation. As a result, it became known about the impossibility of obtaining dispersed copper powder by a known electrochemical method.

In earlier research work indicated the possibility of obtaining dispersed copper powder on the surface of the copper anode and secured this discovery patent of the Republic of Kazakhstan [20]. In the proposed work showed the possibility of such processes in a simple electrolysis with indivisible electrode spaces.

Electrolysis is carried out in an electrolyzer of 150 ml, made of Plexiglas. A copper electrode is used as the anode, and a titanium electrode as the cathode. As part of the electrolyte used sulfuric acid solution with ions of three and tetravalent titanium. It should be noted that copper ions are absent in the solution. During electrolysis, the formation of fine copper powder on the surface of the copper anode was observed. The number of copper powders formed using the current is affected by the current density, the concentration of titanium (III) ions and sulfuric acid in the electrodes.

During electrolysis, the formation of copper powder occurs by the following mechanism:

The reaction scheme that occurs in the electrodes is shown in figure 1.

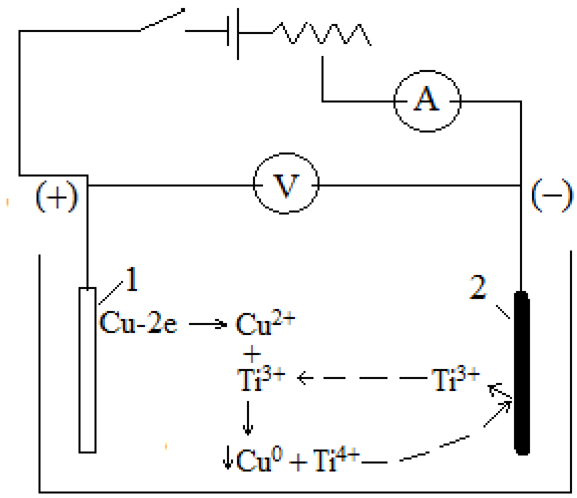


Figure 1 – Schematic diagram of the electrolyzer.
The scheme of reactions occurring in the electrodes and electrolytes:
1 – copper electrode; 2 – titanium electrode

With anodic polarization of the copper electrode, it dissolves while forming its own ions:

$$Cu - 2e \rightarrow Cu^{2+} \quad (1)$$

The formed copper (II) ions interacting with titanium (III) ions on the surface of the anode to form copper powders. As a result, the following chemical reaction occurs on the anode electrode:

$$Cu^{2+} + 2Ti^{3+} \rightarrow \downarrow Cu^0 + 2Ti^{4+} \quad (2)$$

And Ti (IV) ions formed as a result of reaction (2) diffuse in the direction of the cathode and dissolve in the cathode to the trivalent state:

$$2Ti^{4+} + 2e \rightarrow 2Ti^{3+} \quad (3)$$

The ions Ti (III) formed as a result of the reaction(3) are differentiated in the direction of the anode and re-interacting with the ions of copper (II) formed in the anode according to the reaction on the anode area to form a copper powder. These reactions during the electrolysis are repeated by cycle.

In the present article the influence of different parameters on the mechanism of copper powder formation is studied.

Electrolysis with the composition of sulfuric acid 50g/l titanium (III) 4 g/l and 2 g/l titanium (IV) is carried out and the effect of the current density in the electrodes is studied.

The amount of copper powders formed during electrolysis was determined by the solubility of the copper anode. Since it became known that copper (II) ions formed in the anode and titanium ions (III) formed on the electrode surface interacting with each other form a colloidal solution with the content of fine copper powder.After 60-90 minutes, the stability of this colloidal copper solution decreases and settles on the bottom of the electrolyzer in the form of an ultrafine powder. According to our calculations, the constant value of the "red-ox" process occurring during the reaction (2) is $\sim 10^{10}$. This shows that copper (II) ions formed in the anode and titanium(III) ions included in the solution are fully involved in the reaction.

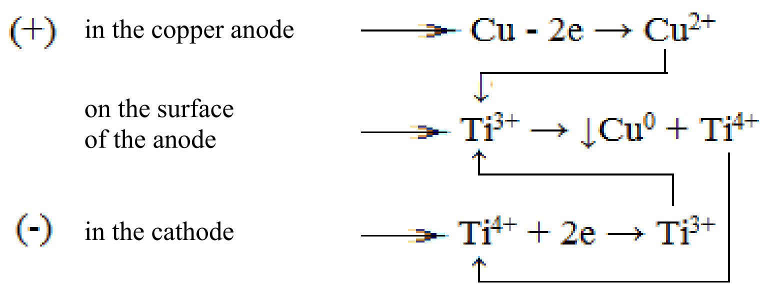
This means that copper (II) ions formed in the anode are fully involved in the formation of colloidal copper powder. As the current density in the electrodes increases to 100 А/м^2, it can be assumed that colloidal copper powder is formed up to 100%.

When the concentration of titanium ions (III) varies in the range of 1-4 g/l, copper ions (II) formed in the anode through a complete reaction (2) form a solution of colloidal copper powder.

It is observed that with an increase in the concentration of titanium ions(III), the stability of the colloidal copper solution decreases. For example, at the concentration of titanium ions (III) 1 g/l stability of colloidal copper solution is more than 180 minutes. Only after a certain time, the formed copper powders of nanosizes interact with each other as nano particles settle to the bottom of the electrolyzer.

With the concentration of sulfuric acid in the range of 50-150 g/l in the formation of colloidal copper solution and in the volume of the powder, no change was observed.

As a result of the study, it was proved that during electrolysis, the reactions on the electrode surface and the anode area occur according to the following scheme:



At the end of the practice, the particles of the formed copper powders were studied and the shapes and sizes were determined. With the help of a scanning electron microscope, a snapshot of the copper powder was taken, magnified up to 50,000 times (figure 2). According to the figures (figure 2 of the scheme a, b), it can be determined that the particle sizes of the powder are almost the same. Only in some places small particles together created a large volume. The current size of the resulting copper powder can be observed in the increased to 50,000 times figure 2 g-image.The particle sizes are almost identical, in the range of 0.097-0123 μm. It is concluded that these dimensions were formed as a result of the combination of nanosize powders.

In the result of the study it was determined that with Ti(IV) ↔ Ti(III) catalytic system involving direct current, normal condition, sulfuric acid medium, in electrolysiswithout dividing the surface of the electrodes on the surface of the anode is obtained copper powder with the nanoscale. That is, based on specified parameters, from any of the copper electrode with the participation of ions of trivalent titanium, dissolving the anode in the area of the anode can be obtained colloidal copper solution with nano-sizes metal and this is demonstrated for the first time. It is also indicated for the first time that in this case chemical and electrochemical reactions occur simultaneously.

In conclusion, would like to note that the proposed research results based on experiments show the production of very fine copper powders using a new mechanism on the anode surface or on the anode area.

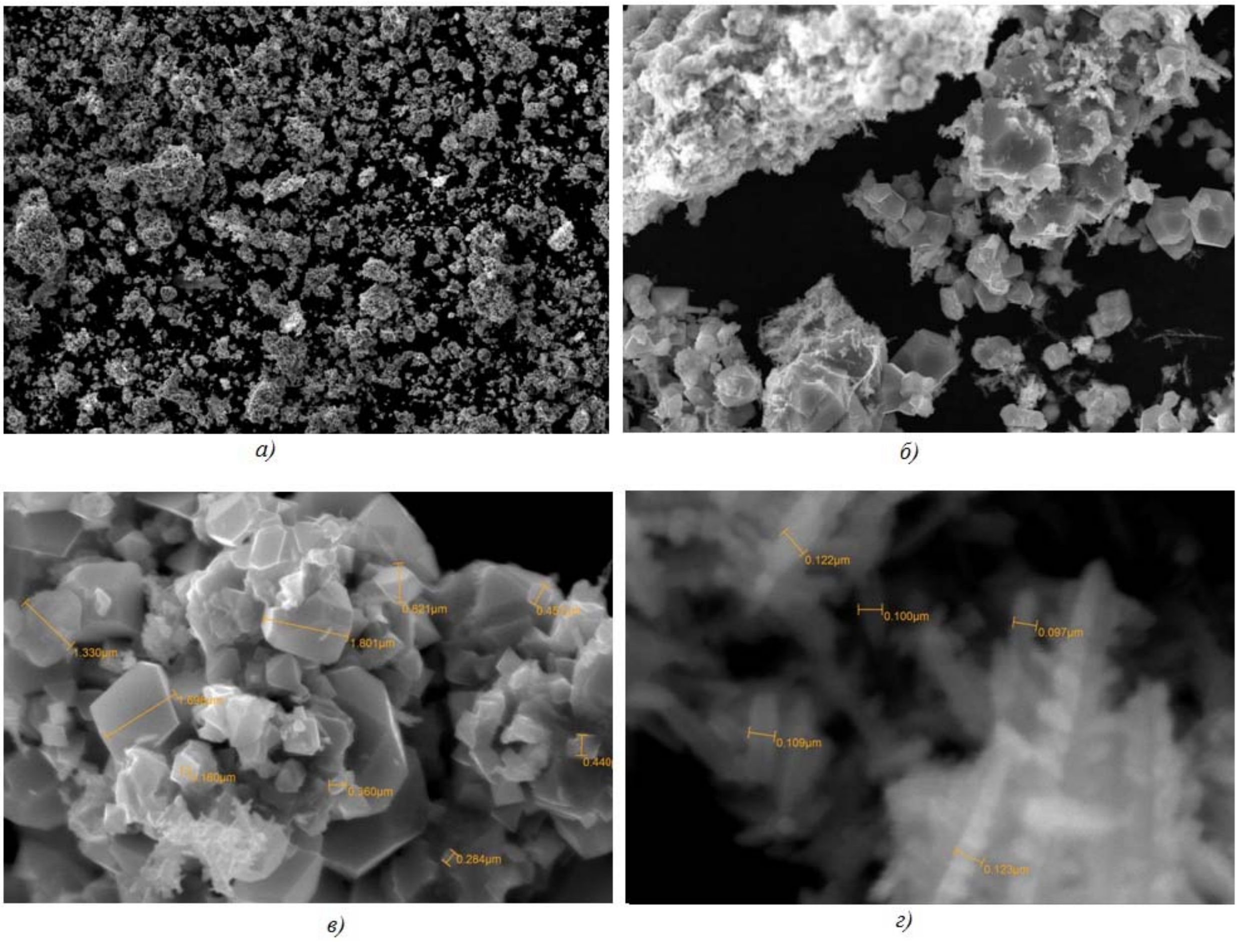


Figure 2 – Microscopic image of copper powders formed on the anode area:
a) increased up to 300 times; b) increased up to 3000 times;
c) increased up to 10,000 times; d) increased up to 50,000 times

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КҮКІРТ ҚЫШҚЫЛДЫ ЕРІТІНДІДЕ ДИСПЕРСТІ МЫС ҰНТАҚТАРЫНЫҢ АНОД КЕҢІСТІГІНДЕ ТҮЗІЛУІ

Аннотация. Ұсынылып отырған мақалада Ti(IV) ↔ Ti(III) каталитикалық жүйеде мыс электроды анодты поляризацияланғанда металдың еруі және еріген мыс (II) иондарынан өте дисперсті ұнтақтың түзілуі қарастырылды. Электролиз тұрақты ток қатысында, қалыпты жағдайда, күкірт қышқылды ортада, электрод кеңістіктері бөлінбеген электролизерде жүргізілді. Мыс электродын анодты поляризациялағанда мыс (II) иондары түзіледі. Ерітіндіге өткен мыс (II) иондары сол сәтте анод бетінде титан (III) иондарымен әрекеттесіп наноразмерлі мыс ұнтағына дейін тотықсызданады. Нәтижесінде коллойдты мыс ерітіндісі қалыптасады. Тотыққан титан (IV) иондары катод бағытына қарай диффузияланып, үш валентті күйге дейін тотықсызданады. Үш валентті титан иондары, анодта түзілген мыстың екі валентті иондарын қайта наноразмерлі метал ұнтағына дейін тотықсыздандырып отыратындығы көрсетілді. Электролит құрамындағы титан иондары электролиз кезінде осылайша өзінің үздіксіз каталитикалық қызметін атқарады. Электролиз нәтижесінде анод кеңістігінде түзілген коллойдты мыс ерітіндісінің тұрақтылығы, титан (III) иондарының концентрациясына байланысты өзгеретіндігі анықталды.

Түйін сөздер: мыс, ұнтақ, электролиз, титан, катализатор, электрод, катод, анод.

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ФОРМИРОВАНИЕ ДИСПЕРСНОГО МЕДНОГО ПОРОШКА В АНОДНОМ ПРОСТРАНСТВЕ В РАСТВОРЕ СЕРНОЙ КИСЛОТЫ

Аннотация. В предлагаемой статье рассмотрено растворение медного электрода при анодной поляризации металла в присутсвии каталитической системы Ti(IV) ↔ Ti(III) и формирование ультрадисперсного порошка, перешедших в раствор ионов меди (II). Электролиз проводили при стандартных условиях в сернокислой среде в электролизере с неразделенными пространствами с применением постоянного тока. При анодной поляризации медных электродов образуются ионы меди (II). Перешедшие в раствор ионы меди (II) на поверхности анода взаимодействуя с ионами титана (III) восстанавливаются с образованием наноразмерно порошка меди. В результате формируется раствор коллоидной меди. Окисленные ионы титана (IV) диффундируют в направлении катода и восстанавливаются до трехвалентного состояния. Показано, что ионы трехвалентного титана восстанавливают образующиеся на аноде ионы двухвалентной меди до наноразмерного порошка металла. Таким образом, при электролизе ионы титана, находящиеся в составе электролита выступают в качестве непрерывной каталитической системы. Установлено, что устойчивость, образованных в анодном пространстве при электролизе, растворов коллоидной меди меняется в зависимости от концентрации ионов титана (III).

Ключевые слова: медь, порошок, электролиз, титан, катализатор, электрод, катод, анод.

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RESEARCH OF VOLTAGE DEVIATION IN RURAL ELECTRICAL GRID WITH DISTRIBUTED GENERATION

Abstract. In accordance with the strategy for the development of energy in Kazakhstan in agriculture, it is necessary to solve the important problem of reducing the energy intensity of agricultural production [1, 2]. The key difficulties in integrating high-capacity generation of renewable energy sources(RES) into the grid are the planning and management of the system. Scenarios for studying the impact on the system depend on high or low load, high proportion or absence of wind/solar energy. For each case, the bus voltage is calculated and checked for compliance with permissible limits, the calculation of the flow distribution of active and reactive power, as well as losses in the transformer, on power lines, generators and other components. Most wind and solar power plants do not provide inertial response or control of statism [3]. A number of difficulties arise related to the stability of the voltage in transient modes.. In this regard, the actual issue is the introduction of adaptive controllers for controlling inverters, depending on the change in the mode parameters [4, 5]. In this paper, we present the results of studies on the modeling of transient regimes using the example of the SPP with an installed capacity of 2 MW describes the possibility of changing the principles of system management, which is the most economical solution to the problems of integrating wind and photovoltaic solar energy into a network. The virtual model of the PSCad analyzed the stability of the voltage in the event of a short circuit on the 10 kV bus, algorithms and mechanisms for using the intelligent controller for controlling the photovoltaic system were developed.

Keywords: distributed generation, integration of solar power plants, voltage deviation, transient modes, short-circuit current.

Introduction. The current state policy on the introduction of green and clean technologies encourages the construction of renewable energy sources, such as wind farms, solar power plants(SPP) and small hydropower plants. According to the data presented in [6, 7], by the end of 2025, it is expected to connect more than 3,000 MW of RES or 15% of the total installed capacity of the generating stations of the Republic. Including, the share of SPP will be 650 MW. With the increase in the share of RES in the total balance of capacity, electromagnetic processes in systems with power converters have a significant effect on voltage stabilization. It is known that the occurrence of a short circuit (SC) due to an unstable damage inevitably leads to a voltage drop in one or several phases (possibly also to a voltage jump in undamaged phases), depending on the type and location of the fault. For this reason, the grid rules of countries with developed renewable energy require that the connection of a high-power RES-power system keep the voltage drop in the network to a certain level (usually in percentage of the nominal voltage) without switching off.

Since 2015, the system operator of KEGOC JSC for the reconciliation of the scheme for issuing the power of renewable energy has introduced "System operator requirements for ensuring integration of RES with the energy system" [8, 9], where one of the main requirements is to ensure the stability of RES voltage in transient modes. The document contains the conditions for RES operation when the linear (phase-to-phase) voltage falls at the point of connection to the network caused by the asynchronous mode in the adjacent network or by close short circuits (symmetrical or asymmetric) [9]. The required voltage value is provided by generating a controlled volume of reactive power. Figure 1 shows the "voltage-time" characteristic at the time of the accident.

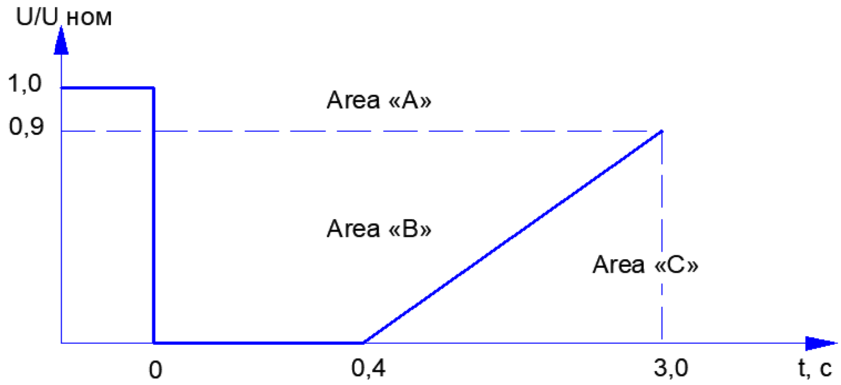


Figure 1 – Diagram of restrictions of switching off generating plants from the common network in the parameters of level-duration of voltage drop

Area "A" - RES must remain connected to the network and function steadily;

Area "B" - RES must remain connected to the network and provide maximum voltage support by generating a controlled volume of reactive power;

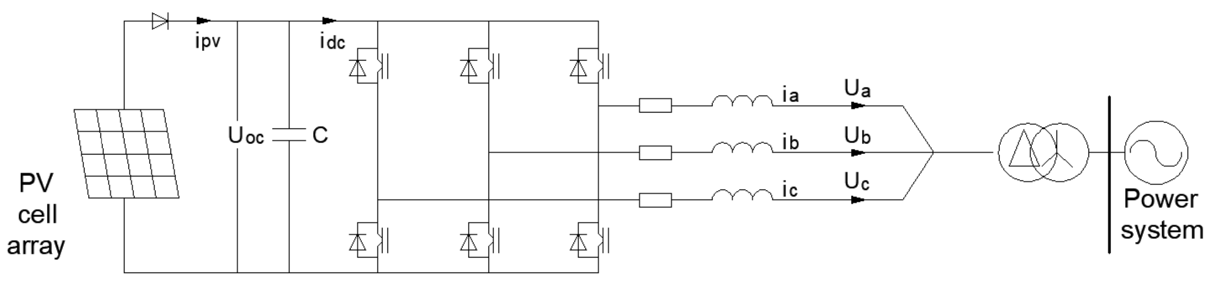
Area "C" - it is allowed to disconnect RES from the network.

Thus, it is required that the RES object in case of voltage drop to 0 in the time interval between 0.4s and 3s remains connected to the power system (zone B) or be disconnected (zone C) from the external network as the voltage deviation U/U_{nom} changes curve on figure 1.

For solar power plants, provision of permissible voltage is possible due to adaptive regulation of the inverter's operation, the task of which is to receive the reactive component from the network to stabilize the voltage when increasing and to generate reactive power with an unacceptable voltage drop. The change in the value of cos (f) should be within 0.85 ind and 0.85 cap [10]. The results of the studies presented in [3-5, 10, 11] show that providing a voltage within a given range is one of the most difficult tasks, the solution of which depends on changing climatic conditions (humidity, wind, solar radiation, etc.) temperature heating of cells, as well as the number of solar panels at the station, affecting the fluctuations in output power. For SES connected to an external electrical network (on-line), the provision of permissible voltage levels in normal and post-emergency modes is possible at the expense of power storage devices, but the cost of such installations is not yet sufficiently acceptable for companies [10].

In this regard, an effective means of voltage regulation is the use of an intelligent regulator for controlling the photovoltaic power supply system [4]. However, the use of this approach requires the development of adaptive algorithms that will in real time regulate the conversion of active and reactive current in inverters depending on the voltage level on the bus bars of the connected external network.

In this article, studies have been conducted to maintain the voltage inverters of the 2-MW SPP like as in Kapshagai city in the south of Kazakhstan in the event of a short-circuit occurring in the PScad ™ software package. PScad is a high-speed, accurate to 0.001s. and a simple tool for modeling the operation of power systems and power electronic converters in their design, analysis, optimization and verification. and also proposed algorithms and mechanisms for ensuring stable operation of the power system in transient regimes.



This SPP is connected to an external 10 kV network via a 0.4/10 kV step-up transformer. The voltage variation in the transient regimes was estimated under the conditions of the occurrence of a 3-phase short circuit (short circuit) on the 10 kV busbars of a 1-second transformer substation. Modeling is performed in the PScad ™ software package. The PScad program with the EMTDC ™ transient simulation module provides a wide range of tools and a large component library for detailed analysis of the operation of power equipment. The result of the system simulation are graphs of the transients of currents and voltages at the input and output of the system for both ac networks and for the DC transmission system. The line parameters are given in the form of lumped inductances, capacitance and resistances, equivalent to the physical parameters of the line.

Results and discussion. To model the SPP, the structural diagram of which is shown in figure 2, we write the output voltage at the solar power plant in a matrix form for 3 phases (2):

$$\begin{bmatrix} U_{sa} \\ U_{s\boldsymbol{b}} \\ U_{sc} \end{bmatrix} = (R + L\frac{d}{d_t})\begin{bmatrix} i_a \\ i_b \\ i_c \end{bmatrix} + \begin{bmatrix} u_a \\ u_b \\ u_c \end{bmatrix} \quad (1)$$

where U_{sa}, U_{sb}, U_{sc} is the voltage of the inverter, i_a, i_b, i_c is the inverter current, u_a, u_b, $u_c$is the voltage of the external electrical network.

In accordance with the requirements of transmitting electrical networks [9], it is necessary that at the time of transient regimes the accident does not spread to distribution networks and does not provoke its cascade development.

Voltage stability in PV systems is determined by the operation of inverters, which must regulate the generation of active and reactive power during short-circuit or other transient processes [11]. The mathematical model of the inverter operation is described by the following equations (3, 4) in the simplified coordinate system d, q:

$$\begin{aligned} u_{sd=} Ri_d + L\frac{di_d(t)}{dt} - \omega Li_q + u_d \\ u_{sq=} Ri_q + L\frac{di_q(t)}{dt} + \omega Li_d - u_q \end{aligned} \quad (2)$$

$$\begin{aligned} P = u_d i_d + u_q i_q \\ Q = u_q i_q - u_d i_d \end{aligned} \quad (3)$$

From figure 3A, we can observe that after a 3-phase short circuit on a 10kV bus, the inverter goes into protection mode and automatically removes the voltage at the output, the instantaneous and active voltage on the 10kV buses is reduced to 0 and restored only after the short circuit is completed. There is a decrease in the generated currents, and accordingly the active and reactive power from the SPP. For 1 second SPP does not contribute to the external power supply voltage. When the external voltage drops to a critical level, the SPP automatics takes it to isolated work in order to ensure the stable operation of the integrated electric network.

Analysis of simulation of transient modes shows that as a result of the absence of a reverse electro-mechanical connection of the power system from the SES, intelligent regulators must be used to control the output voltage, which will adaptively control the generation of active and reactive power when the external parameters of the electrical network change. Figure 4 shows the block diagram of Iq operation of the regulator for operation in the SPP system when connected to an external electrical network.

Models of automatic systems based on semiconductor converters with pulse-width modulation belong to the class of systems of the following type [8]:

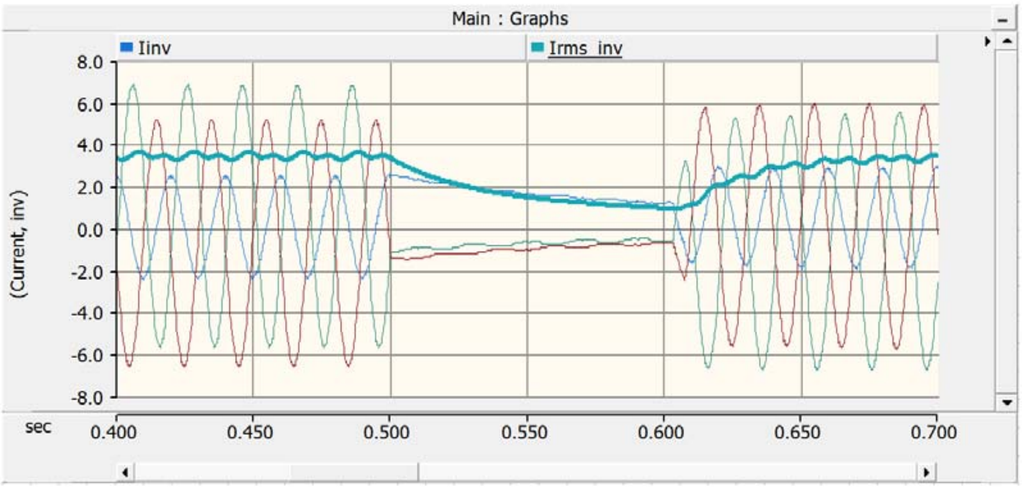
$$\frac{dX}{dt} = G\left(A, \overline{X}, t\right), \quad (4)$$

where X is a vector of phase variables; G is a periodic vector function; A is the matrix of the parameters of the system.

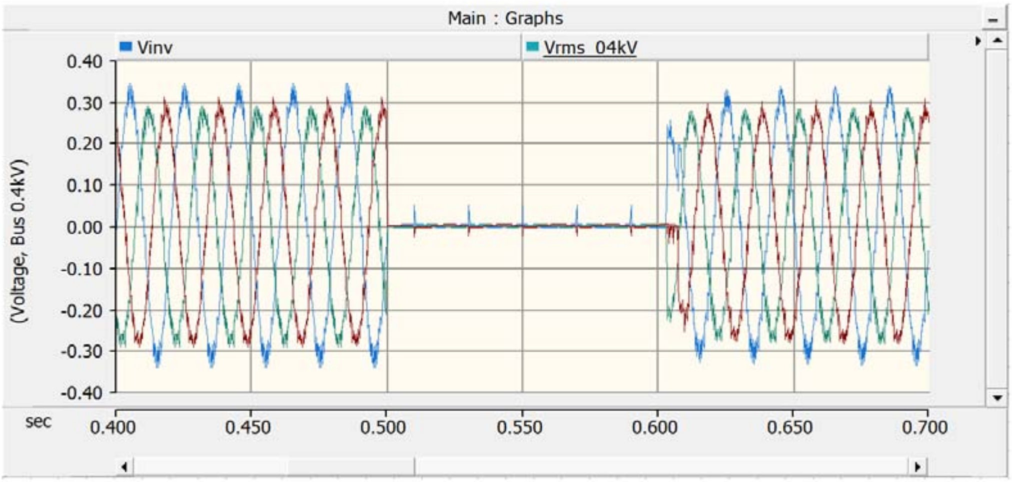
The solution of the system (1) has the form:

$$\overline{X}(t) = \overline{X}(t + T).$$

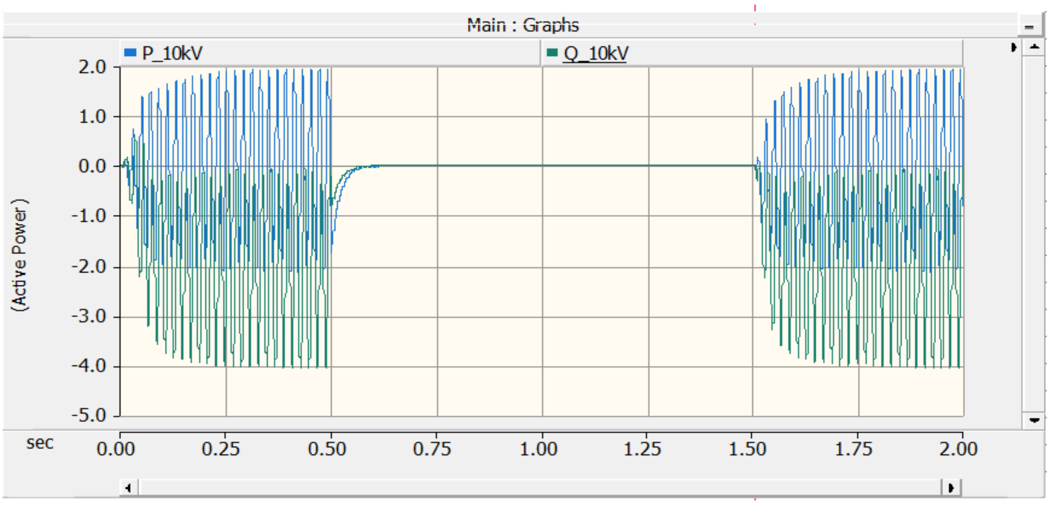
The converter replacement circuit is described by a system of nonlinear differential equations



A



B



C

Figure 3 – Oscillograms of transient processes with a 3-phase short-circuit fault with a duration of 1 sec on buses substation10 kV with a connected SPP. A – instantaneous and effective values of currents B – instantaneous and effective values of voltages, C – active values of active and reactive power

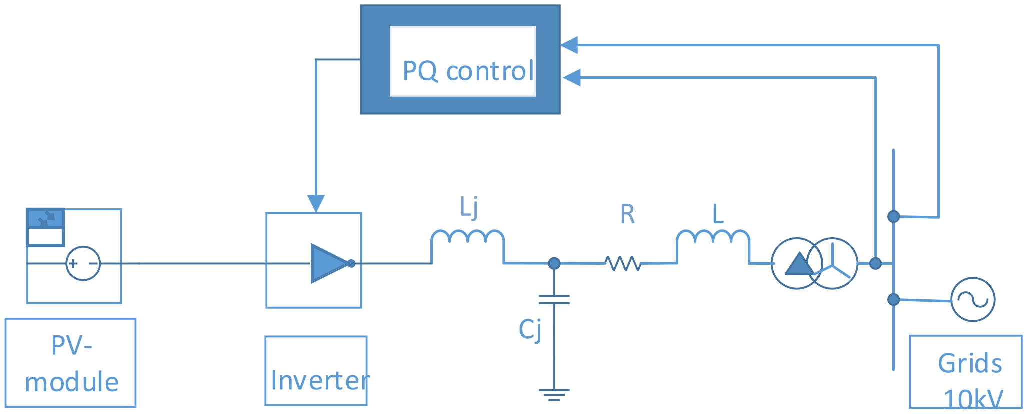


Figure 4 – Block diagram of the Iq controller operation in the SPP system when connected to an external network

$$\begin{cases} L\dfrac{di_L}{dt} = -R\cdot i_L - K_{FD}(\xi(t))\cdot u_C + E; \\ C\dfrac{du_C}{dt} = i_L \cdot K_{FD}(\xi(t)) - \dfrac{u_C}{R_H}, \end{cases} \tag{5}$$

where is the current in the inductance; - voltage on the filter capacity; - a function that describes the commutation of a diode.

In the matrix form, system (4) is written as

$$\frac{d\overline{X}}{dt} = A(K_F(\xi(t))\cdot\overline{X} + \overline{B}(i_L).$$

The principle of the Iq regulator operation is to control the external voltage of the network and to regulate the operation of the inverter by generating active and reactive transients in the event of a fault (5).

$$u_{a,b,c=} U_{sa,sb,sc} - (Ri_d + L\frac{di_d}{dt}) \tag{6}$$

The operation of the inverter for regulating the generation of active and reactive power will be performed in accordance with the model in the coordinates dq from the change in the phase of the external current ωLi_q, $-\omega Li_d$ (6).

$$\begin{aligned} u_{d=} U_{sd} - \left(Ri_d(t) + L\frac{di_{d\,(t)}}{dt}\right) + \omega Li_q(t) \\ u_{q=} U_{sq} - \left(Ri_q(t) + L\frac{di_{q\,(t)}}{dt}\right) - \omega Li_d(t) \end{aligned} \tag{7}$$

The purpose of voltage regulation at the connection point is to provide the required voltage in accordance with the graph shown in Fig. 1. To do this, Iq controller is used, which determines the current value on the inverter i_{in} using the system of equations 6.

To determine the currents X (i_d, i_q), we use the solution of linear equations in the form:

$$\overline{X}(t) = \overline{Y}\cdot A^{-1}\ , \tag{8}$$

where $\overline{Y}$ – is the vector of voltage drops in the network between the points of connection of the SPP to the system in the coordinates d, q, Y (U_d, U_q); $\overline{X}$ – current vector in the coordinates d, q; A – matrix parameters (step-up transformer, cable, etc.) between the point U_{out} and the point of connection of SPP to the system buses.

$$\begin{cases} Y_d \ \geq (U_{sd} - U_d)/U_{sdнdн}; \\ Y_q = (U_{sq} - \mathrm{U_q})/\mathrm{U_{sqнqн}}. \end{cases} \tag{9}$$

The solution of system (8) has the form:

$$\overline{\mathrm{X}}(\mathrm{t}) = \overline{\mathrm{X}}(\mathrm{t} + \mathrm{T}), \tag{10}$$

where $Ys = \sqrt{Y_d^2 + Y_q^2}$, determined by the shutdown conditions:

$$\begin{cases} Y_S \ \geq Y_{Snom} \ where \ t \equiv (t_0 \ ; \mathrm{t}_\infty); \\ Y_S = 0 \ where \ t \prec 0.4s; \\ \mathrm{Y_S} = \mathrm{Y_0} + \mathrm{k} \cdot \mathrm{t}, \text{ where } \mathrm{k} = tg(\Delta U / t)). \end{cases} \tag{11}$$

As a result of the developed adaptive algorithm, the necessary level of output voltage of the PV system will be provided in the Iq regulator functioning in order to stabilize the transients of the external power system.

Conclusion. In this paper, some possibilities of distributed generation to regulate voltage and control reactive power were shown, but still many questions require investigation. One of them is economic efficiency, because such an approach increases losses in distribution grid. With significant integration of SES and the absence of a reverse electromechanical connection with the power system, it is necessary to use the development of a voltage regulator at SPP based on the parameters of the external network mode, based on adaptive algorithms for controlling the operation of inverters. The voltage regulator on SPP is implemented in the form of Iq controller, which affects the current of the inverter i_{in}. An algorithm for determining the required current value is proposed using the equation of the current dependence on the voltage drop between the U_{out} point and the SPP connection point to the system buses. In addition, different combinations of control for large and small-scale PV plants are possible to consider as well as an implementation of central control for all renewables in the distributed grid. This direction will be also investigated in the nearest future.

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МВТ ҚУАТТЫЛЫҚТАҒЫ КҮНЭЛЕКТРСТАНЦИЯСЫН ИНТЕГРАЛДАУ КЕЗІНДЕГІ ТАРАТУШЫ ЖЕЛІЛЕРДЕГІ КЕРНЕУ ТҰРАҚТЫЛЫҒЫНЫҢ ЗЕРТТЕУІ

Аннотация. Қазақстанда жаңартылатын энергия көздерін енгізуді ынталандыру бойынша бірқатар шаралар қабылданды, олардың біреуі күнэнергиясы болып табылады [1, 2]. Көптеген жел және күнэлектр-станциялары (КЭС) инерциалды жауап беруді немесе статистиканы бақылауды қамтамасыз етпейді. Қайта кернеу кернеуінің инверторы сыртқы электрмен жабдықтау жүйесінің кернеуімен кері байланыс жоқ. СЭС-нің электрэнергиясын өндіруі, әдетте, тек күн радиациясының функциясы болып табылады және желі жұ-мысының параметрлеріне байланысты емес [3]. Осыған байланысты, инверторларды басқаруға бейімделген контроллерлерді режимнің параметрлерін өзгертуге байланысты [4, 5] енгізу мәселесі өзекті болып табы-лады. Жаңартылатын энергия көздерін жоғары қуаттылықты торға интеграциялаудың негізгі қиындықтары жүйені жоспарлау және басқару болып табылады. Жүйеге әсерді зерттеу үшін сценарийлер жоғары немесе төмен жүктемеден, жоғары пропорциядан немесе жел/күн энергиясының жоқтығына байланысты. Әрбір жағдайда шиналардың кернеуі рұқсат етілген лимиттерге, белсенді және реактивті қуатты нағынын бөлу, сондай-ақ трансформатордағы, электржелілерінде, генераторлардағы және басқада құрамдас бөліктеріндегі шығындардың есептелуі үшін есептеледі және тексеріледі. Осы мақалада белгіленген қуаты 2 МВт болатын Қапшағай күнэлектрстанциясының мысалында өтпелі режимдерді модельдеу бойынша зерттеулер нәтиже-лерін ұсынамыз. PSCad виртуалды компьютерлік модельде 10 кВ-тық шиналарда қысқа тұйықталу жағ-дайында кернеу тұрақтылығыталданды, фотоэлектрлік жүйені басқару үшін интеллектуалды контроллерді қолдану үшін алгоритмдермен механизмдер әзірленді.

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ИССЛЕДОВАНИЕ СТАБИЛЬНОСТИ НАПРЯЖЕНИЯ В РАСПРЕДЕЛИТЕЛЬНЫХ СЕТЯХ ПРИ ИНТЕГРАЦИИ СОЛНЕЧНОЙ ЭЛЕКТРОСТАНЦИИ МОЩНОСТЬЮ 2 МВт

Аннотация. В Казахстане предпринят ряд мер по стимулированию ввода возобновляемых источников энергии (ВИЭ), одним из которых является солнечная энергетика [1, 2]. Большинство ветровых и солнечных электростанций (СЭС) не обеспечивают инерционный отклик или контроль статизма. Преобразовательные инверторы напряжения не имеют обратной связи с напряжением системы внешнего электроснабжения. Генерация мощности СЭС, как правило, является только функцией солнечного излучения и не зависит от режимных параметров сети [3]. В связи с этим, актуальным является вопрос внедрения адаптивных контроллеров по управлению инверторами в зависимости от изменения параметров режима [4, 5]. Ключевыми трудностями при интеграции больших мощностей генерации ВИЭ в энергосистему являются планирование и управление системой. Сценарии для изучения воздействия на систему зависят от высокой или низкой нагрузки, высокой доли или отсутствия ветряной /солнечной энергии. Для каждого случая рассчитывается напряжение на шине и проверяется на соответствие допустимым пределам, проводится расчет потокораспределения активной и реактивной мощности, а также потерь в трансформаторе, на ЛЭП, генераторах и других компонентах. В настоящей работе приведены результаты исследований по моделированию переходных режимов на примере Капшагайской солнечной станции (СЭС) установленной мощностью 2 МВт. В виртуальной модели ПК PSCad проанализирована стабильность напряжения при возникновении короткого замыкания на шинах 10 кВ, разработаны алгоритмы и механизмы по использованию интеллектуального регулятора для управления фотовольтаической системой.

Ключевые слова*:* распределенная генерация, стабильность напряжения, интеграция СЭС, переходные процессы, ток короткого замыкания.

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GONADOTROPIN-RELEASING HORMONEAGONISTS AND ANTAGONISTS: INFLUENCE ON NEUROANGIOGENESIS AND APOPTOSIS IN EUTOPIC ENDOMETRIUM IN A THERAPY FOR RECURRINGENDOMETRIOSIS GENITALIS EXTERNA-ASSOCIATED PELVIC PAIN IN PATIENTS

Abstract. Endometriosis is one of the most common gynecological diseases diagnosed in almost 70% of patients with chronic pelvic pain (CPP). However, quarter of women with pelvic pain was diagnosed with external genital endometriosis (EGE) during laparoscopy. A special group is represented by patients with PPthat did not stop after the removal of endometrial foci. The mechanisms of the pathogenesis of the formation of pain syndrome are not completely explored yet. According to a number of authors, significant rolein the pathogenesis of pelvic pain recurrence after surgical treatment of EGE is played by active neuroangiogenesis, both in ectopic and eutopic endometrium.GnRh agonists are the “golden standard” for the treatment of endometriosis and highly effective against pelvic pain associated therewith. In a number of European countries, GnRh antagonists have been registered for the treatment of EGE-associated PP. Taking into account not fully discovered mechanisms of PP development in cases of EGE, the study of the expression of neurovascular markers in eutopic endometrium during aGnRh and antGnRh therapy was of scientific interest.

The **aim of the study** was to compare the effect of GnRh agonists and antagonists on neuroangiogenesis and apoptosis in the eutopic endometrium of patients with pelvic pain that did not stop (recurrence) after surgical treatment of EGE. Expand the understanding of the pathogenesis of pelvic pain that did not stop (recurrence) after surgical treatment of external genital endometriosis.

Material and methods. The study involved 2 stages. At the first stage (algological), data from B&B, NRS and VRS algological questionnaires, which were completed by patients with recurrent PP after surgical treatment of EGE, were analyzed (n = 130, aged 18 to 45 years old, average age 32.5 ± 7.6 years). All women were operated on for EGE no later than 3-6 months; they did not receive drug therapy after surgical treatment and sought medical attention for recurrent pelvic pain.Patients were stratified in groups (group I - aGnRh, group II - antGnRh). Treatment was administered for 3 months (aGnRh intramuscularly once in 28 days, antiGnRh peros 100 mg/day). At the second stage, the dynamics of neoangiogenesis markers (VEGF), neurogenesis (NGF) and apoptosis (CASP3) in the course of treatment with immunohistochemical and molecular biological methods. Materials for the study of the endometrium were obtained by the papel biopsymethod. The control group was formed from a number of women with EGE without PP, who applied for surgical treatment of infertility (n = 30).

The **results** of the study have found that the basis of pathogenesis of pelvic pain recurrence in patients who did not receive medical therapy after surgical treatment of EGE is the activation of neuroangiogenesis processes and reduction of apoptosis. At the same time, a decrease in immunological labeling of VEGF-A in the course of aGnRhtreatment by 2,6 times was found, in the group of patients receiving antHnRh, on the contrary, there was a positive trend in the IHC response to VEGF ($p<0.05$). The immunolabelling reaction to NGF antibodies in group I decreased in the dynamics of aGnRhtreatment 1,8 times, and in group II – 2,4 times ($p <0.05$) in the course of antiGnRhtherapy. Expression level of CASP3 pro-apoptotic protein increased 2,1-fold in the course of aGnRh the rapy, which indicates intensification of apoptosis ($p<0.05$). In group II patients, in the course of antiGnRhtherapy, the expression of CASP3 during treatment did not statistically change, which indicates the absence of the proapoptotic effect of antiGnRhon the endometrial cell composition ($p> 0.05$).

Conclusion. GnRh antagonists provide stable endometrial trophicity during treatment of EGE-associated PP, causing their better tolerability as well as efficacy.

Key words: neuroangiogenesis, pelvic pain, endometriosis, apoptosis, GnRh agonists, GnRh antagonists.

Relevance of the problem. Endometriosis is one of the common gynecological diseases thatis diagnosed in almost 70% of patients with chronic pelvic pain [1]. There is external genital endometriosis (EGE) [2, 3] found in about quarter of women with pelvic pain who have laparoscopy. Despite large number of studies on various aspects of chronic pelvic pain (CPP) in EGE, to date, none of the proposed treatment methods has led to a complete regression of CPP and did not allow to avoid frequent recurrence [1, 3].

This is large lydue to the complexity of the chronic pain structure, which is usually heterogeneous and is represented by acombination of as etofsymptoms that reflect the presence of no ciceptive, neurogenic and psychogenic components of algological descriptors [1-4]. It is important to note that there are studies of individual CPP development factors in EGE, there are hardly any comprehensive studies of its pathogenetic components, especially with different intensity and nature of the pain syndrome, which further emphasizes relevance of this problem.

It is important to emphasize that attempts to deal with the mysteries of pathogenesis of pain syndrome development in EGE, the very first reports about the presence of sensory nerve fibers in the eutopic endometrium in women suffering from endometriosis were questionable, and it was believed that the number of endometrial nociceptive nerves correlated with pelvic pain regardless of the primary disease [5].

There is evidence of a correlation relationship between the presence of micromemyelinated sensory nerve fibers in the functional layer of the endometrium and endometrioid pelvic peritoneal heterotopies compared to normal peritoneum in women suffering from endometriosis-associated CPP [6].

According to various authors, in women with endometriosis, the expression of neurotrophins, their receptors and other neuron-active molecules in eutopic endometrium was significantly higher in comparison with the control group [5, 6, 8]. For example, the NGFexpression and its TrkA receptors was significantly higher in the eutopic endometrium of women with pelvic pain, unlike in the group of women with pain-free syndrome. Studies of anotherlevel of evidence have shown an abnormality in eutopic endometrium in endometriosis associated with neurogenesis, including an increase in the number of neuroendocrine apudocytes, macrophages, and NK cells. However, it should be noted that in addition to increased expression of neurogenesis promoters in eutopic endometria in women with endometriosis, demyelinated C-type fibers were detected in the functional layer in comparison with the control group [10]. A significant role in neovasculogenesis is played by vascular endothelial growth factor (**VEGF-A**), produced by fibroblasts, macrophages, some glandular epithelial cells and, finally, endothelial cells [7]. VEGF-A, by binding to the VEGFR-1 and VEGFR-2 receptors encoded by the same name genes, stimulates proliferation of vascular endothelium, affects the corresponding receptors and activates its own signaling pathway, which can significantly reduce the level of oxidative stress, the amount of ROSand thereby normalize local homeostasis, reduce activity of inflammatory phenomena and activate the processes of natural tissue regeneration [7].

A mandatory pathogenetic component that characterizes proliferative activity of endometrium in endometriosis, including EGE, is the reduction of apoptosis. This pathogenesis aspect in a group of women with PP remaining after surgery remains unexplored. A prominent apoptosis marker is effector **caspase-3**, which causes breakdown of key proteins (ICAD → DNase CAD, ROCK), resulting in self-destruction of cells (apoptosis), including glandular epithelium [8].

Nerve growth factor (**NGF**) is one of the leading neurotrophic substances involved in growth regulation and homeostasis of the nervous tissue by activating the proliferation of glial cells, growing and increasing the number of nerve fibers and maintaining activity of a number of neurons.Direct anabolic effect is due to the NGF banding to a high-affinity member of the tyrosine kinase receptor family, TrkA, encoded by the *NTRK1* gene. Changes in *NTRK1* expression correlate with NGF and decrease with tissue denervation and, on the contrary, increase with the growth and branching of nerve fibers. There is also information about the *NTRK1*involvement and directly the expression product - TrkA - in the development of local hyperalgesia in the context of neuroimmunogenic inflammation [9].

Protein products of *BAX* and *BAK* proapoptotic genes interact with potential-dependent anionic channels of mitochondria, stimulating their discoveries, which contribute to the release of proapoptotic mitochondrial peptide, which activates the cell caspases to effect apoptosis. The peptide encoded by *BCL-2*, in turn, inhibits the activity of BAX and BAK, thereby manifesting the anti-apoptotic nature of the action with respect to cell preservation and a stable cell cycle [10].

The issues of effective pain relief and prevention of its recurrence remains the subject of focused study by endometologists around the world. According to some researchers, hormonal endometriosis treatment contributes to a statistically significant decrease in the density of endometrium nerve fibers [11].

GnRh agonists are the “golden standard” for the treatment of endometriosis and highly effective against pelvic pain associated therewith. In a number of European countries, GnRh antagonists have been registered for the treatment of PP caused by EGE. GnRh antagonists (anthnRh) have a synthetic peptide structure whose mode of action is to competitively bind to receptors for gonadotropin-releasing hormone without causing activation of these receptors without contributing to the initial release of gonadotropins before or after the onset of the effect of drug. Taking into account not fully discoveredEGE-associatedPP developmentmechanisms, the study of the expression of neurovascular markers in eutopic endometrium during aGnRh and antGnRhtherapy was of scientific interest.

However, taking into account these pathogenetic features opens up the prospect of developing more effective drug therapy for various CPP associated with EGE. The above determines the relevance of the selected topic, demonstrates the need for careful examination of the innervation apparatus of eutopic endometrium in patients with recurrent PP after surgical treatment, objective algological monitoring, effective relief and anti-recurrence effect of drug therapy.

Research objective was to compare the effects of GnRh agonists and antagonists on neuroangiogenesis and apoptosis in eutopic endometrium of patients with pelvic pain that did not stop (recurrence) after surgical treatment of EGE. Expand the understanding of the pathogenesis of pelvic pain that did not stop (relapse) after surgical treatment of endometriosis genitalis externa.

Methods of research. Prospective comparative study was conducted at the clinical bases of the Department of Obstetrics and Gynecology with the course of perinatology at the Medical Institute of the Russian State University of Peoples’ Friendship for the period of 2016–2018. (Bauman MCH No. 29 of MHD and NGHCI CCH No. 6 of Russian Railways JSC).

Research Objective were as follows:

1. Expand the understanding of pelvic pain pathogenesis that has resumed (recurrence) after the stage of surgical treatment for external genital endometriosis.

2. To study the dynamics of neoangiogenesis markers (VEGF and its VEGFR-1, VEGFR-2 receptors) in the course of therapy with GnRh antagonists and antagonists of pelvic pain in patients of the studied cohort.

3. To identify the dynamics of the intensity of the reaction of immunolabeling of antibodies to nerve growth factor (NGF), as well as gene expression of its NGF and NTRK1 receptors during aGnRh and antGnRh treatment for recurrent pelvic pain associated with external genital endometriosis.

4. To study the dynamics of IHC - markers of apoptosis (CASP-3 protein) and expression of proapoptotic (BAC, BAC) and antiapoptotic (BCL-2) genes in the endometrium in patients with pelvic pain that did not stop (recurrence) after surgical treatment of external genital endometriosis in dynamics against in the course of treatment withagnRh and antiGnRh.

The following set of methods was used: algological analysis, morphological, immunohistochemical (IHC), real-time polymerase chain reaction (RT-PCR), and statistical research methods.

1.1. Clinical (clinical and laboratory) justification. Clinical and morphological study was conducted in 3 stages: Stage I - selection of the primary pool of patients with morphologically and endoscopically verified EGEsyndrome, complicated by recurrent PP who did not receive hormonal treatment; Stage II - allocation of patients by blind randomization to determine the type of pharmacotherapy, analysis, followed by comparison of the results of the study and voluntary informed consent to participate in the study; conduct of pharmacotherapy and laboratory and instrumental diagnostics with the obtainment and subsequent analysis of their biological material, the study of clinical, instrumental indicators, statistical processing and publication of the results.

Study inclusion criteria:

- reproductive age
- the presence of PP (ICD N94.8 "Pain and other conditions associated with female genital organs and menstrual cycle"),
- morphologically confirmed external genital endometriosis (N80.1),
- no contraindications for the prescription of hormonal drugs.

The exclusion criteria were as follows: pregnancy, lactation, the presence of contraindications to ongoing pharmacotherapy with GnRH agonists or antagonists, inflammatory diseases of the pelvic organs in the acute stage or chronic course of a recurrent nature, neurogenic or psychogenic PP.

As part of the study of the functional state of patients' endometrium with PP (n = 130) during drug administration, the selected cohort of patients was divided into 2 groups: Group I - GnRH agonist pharmacotherapy (n = 65), Group II - GnRH antagonists. Therapy in all groups was commenced on the 2nd- 5thday of the menstrual cycle. Patients in all groups successfully completed the therapy course, no discontinuation of the drug due to side effects was reported, regardless of the chosen therapy, no refusals to continue therapy by patients based on their personal convictions were recorded. Moreover, group III was formed as a control group; women with morphologically and endoscopically verified EGE diagnosis without PP (n = 30).

The source material was endometrial bioptic specimen obtained during aspiration biopsy in patients with recurrent EGE-associated PP, but prior to prescription of pharmacotherapy. Subsequently, an endometrial pipel-study was conducted twice more in women of groups I and II (patients with PP) right in the course of treatment (8thweek of therapy) and after its completion (16 weeks from the day of the start of drug administration, taking into account 4 weeks of monitoring after the end of therapy at week 12) while taking GnRh agonists, antagonists. Endometrial bioptic materials obtained from patients without PP (group III) in the postoperative period were the internal control in the framework of the study.

1.2. Algological Analysis. Algological profile was assessed using pain inventories (Biberoglu & Behrman Scale, Numeral Rating Scale, Verbal Rating Scale). Patients were asked to complete question-naires, where they independently assessed the pain caused by endometriosis, according to the Biberoglu & Behrman Scale (B&B) scale.

The cumulative score on the B&B scale was a score, the results of which were worth concluding that PP was absent in the case of 0 points, PP corresponded to a mild degree in 1-2 points, and moderate degree - 3-5 points, severe - 6-10 points, and PP was considered very severewhere the sum of points reached 11-15 [12].

The intensity of pain was estimated in points (0 to 10) by subjective pain assessment method using a numerical rating scale (NRS), which is a 10cm long segment of a straight line.

Evaluation of pain in accordance with the verbal rating scale (VRS) implied a description of such characteristics as occurrence of pain over the last 24 hours, when performing daily chores, dyspareunia, impeding sexual contacts in the last 24 hours, characteristic of abnormal uterine hemorrhage, where occurred over the last 24-hours period [13-15].

Algological analysis was performed in all patients before, during and after treatment of recurrent PP in EGE.

1.3. Methods of study of biopsy specimens (aspirates) of the endometrium. The study of bioptic material was conducted in the pathoanatomical department, where they were subjected to morphological and immunohistochemical (IHC) studies with computer morphometry, as well as molecular genetic research using real-time polymerase chain reaction (RT-PCR)

1.2.1. Morphological Analysis. Biopsyspecimens were fixed in 10% formalin buffered HCl (pH = 7.2; 5 to 24 hours); dehydratedinanascending alcohol series (histologicaltissue processing device by "LeicaBiosystems"company, Germany) andembeddedinparaffin.Tissue sections with a thickness of ≈ 4 μm were placed on ordinary, and for immunohistochemical studies (IHC) - on special adhesive super Frost Plus glass slides (Mainzel Glaser, Polylisine, Germany), deparaffinized according to the accepted standard method. Subsequently, sections were either stained with hematoxylin and eosin (H&E) for histological examination, or used for IHC.

1.2.2. Immunohistochemistry Assay. IHC-study was conducted after deparaffination and rehydration of paraffin sections according to the standard protocol in the automatic mode in the Bond-Max immunohistostainer (Leica, Germany). Monoclonal antibodies (Abcam, United Kingdom) to **VEGF-A** (Anti-VEGFA antibody, Clone ab46154, 1: 400) and rabbit to **NGF** Anti-NGF antibody, Clone ab52918, 1:300) and caspase-3 (Cas-3; Clone E87, 1:50). Secondary antibodies are universal Cell Marque (USA). For each marker, control studies were performed in order to eliminate pseudo-positive and pseudo-negative results. The nuclei of the cells were stained with Mayer's hematoxylin; sections were washed under running water; dehydrated and embedded in a balm.

The semi-quantitative method involved evaluating the results of immunohistochemical reactions using a 3-point system with counting the number of immunopositive cells in 10 randomly selected fields of view at ×400 magnification (%): "-" - absence, "+" - weak (5–25% of cells, 1 point), "++" - moderate (25–50% of cells, 2 points), "+++" - pronounced (≥51% of cells, 3 points).

The biopsy material was visualized using a Leica DM4500 optical microscope (Leica Microsystems, Germany), combined with a Leica video camera (Germany) and standard software.

Computer morphometry to assess the results of the immunohistochemical reaction and to determine the area of positively colored objects in the field of view was performed using an open source image analysis computer system - Image J 1.51. To do this, we took a microphotograph of 10 randomly selected fields of view with a ×200 magnification on microslides after the IHC reaction performed with the corresponding primary antibodies.Next, the resulting image was automatically normalized and transferred from the color 24-bit image (RGB) mode to 256 gray scale mode; binarization of objects with a specified sensitivity level was performed. When processing micrographs, the image analysis system binary objects with a brightness level of> 150 clipped and the total area of positively colored objects was determined from the total area of microphotographs as a percentage.

1.2.3. Real-time polymerase chain reaction (RT-PCR). Endometrial bioptic materials were placed in an RNAlater stabilizing solution (QIAGEN, the Netherlands) and stored at -70°C. Subsequently, the samples were homogenized according to a standard protocol.Extraction of total RNA was performed using a set of ready-made RNeasy Plus Mini Kit reagents (QIAGEN, the Netherlands). The synthesis of complementary DNA (cDNA) from the matrix of the obtained RNA was performed using the SuperScript ™ VILO ™ Master Mix (Invitrogen).The isolated cDNAs were subjected to RT-PCR using the ABsolute Blue QPCR Mix reagent mix (Thermo Scientific, USA) with the SYBR Green I fluorescent dye. RT-PCR was performed using the StepOne System (Applied Biosystems, USA) and the standard software. Analysis of gene expression was performed using the threshold cycle (Ct) determinationmethod and calculation of the relative genes expression according to the protocol. Standardizationand internal control are performed relative to GAPDH housekeeping reference gene, the expression level of which by default is considered constant. Statistical control was performed relative to the control group without NTD. Primers were selected on the basis of publicly available materials on DNA sequences and mRNA genes in the NCBI database using the Primer-BLAST program.

1.2.4. Statistical methods and data processing. The resulting data were statistically processed using the SPSS 7.5 program for Windows statistical software package (IBM Analytics, USA).The variation series, the arithmetic mean, the population standard deviation, the mean error, and probability of difference were determined. Then, the conformity/non-conformity of the results obtained to the normal distribution was evaluated using the Kolmagorov-Smirnov criterion. When statistical processing, the following non-parametric criteria were used to assess the reliability of differences in mean values between the following groups: Mann-Whitney U-test, Kruscal-Wallis H-test. In the absence of a normal data distribution, the non-parametric F. Wilcoxon criterion (Statistical Methods for Research Workers) with a significance level of $p < 0.05$ was used.

Quantitative data obtained during RT-PCR were analyzed using ANOVA on ranks.

Results. In group I patients, prior to the onset of EGE-associated PP treatment, the average B&B score was 5,08±0,49, on the NRS scale - 5,46±0,38 and VRS - 5,46±0,38 points; in group II patients – 5,46 ± 0,54, 5,79 ± 0,37 and 5,79 ± 0,37, respectively. Prior to commencement of EGE-associated PP therapy, no differences between groups' patients that subsequently received therapy were identified (p> 0,05). According to the results of a comparative microscopic study of endometrial biopsy specimens in all samples of the studied groups, a practically identical morphological pattern was established: the uterine glands in the proliferation phase of the menstrual cycle, with a clearly defined contour; the epithelial component prevails over the stromal, no signs of glandular hyperplasia, atrophy of the endometrium was detected.

According to the data of the morphometric analysis of the endometrium, no significant differences in the height of the glandular epithelium cells, the diameter of the glands and their density per unit area in groups I and II were found in patients with PP – *p> 0.05* (table 1).

Table 1 – Morphometric analysis of the glandular compartment of endometrial biopsies in groups I and II during and upon completion of aGnRh/antiGnRh therapy (p <0.05)*

Morphometric parameter	Epithelium height, µm	Gland diameter, µm	Gland density per, mm^2
Group I – aGnRh			
Before pharmacotherapy	19.1±1.2	112.3±5.7	16.4±1.4
8 weeks (during treatment)	11.4±1.4*	95.1±4.3*	7.2±1.3*
16 weeks (after treatment)	13.1±1.7*	91.3±3.5*	5.7±1.1*
Group II – antiGnRh			
Before pharmacotherapy	19.4±1.5	119.4±1.4	19.2±2.1
8 weeks (during treatment)	17.1±2.3	117.9±15.1	16.3±.2.3
16 weeks (after treatment)	18.3±2.6	118.3±14.2	17.1±1.9

In the course of IHC study of bioptic materials of endometrium, prior to the beginning of pharmacotherapy, a moderate (2 points) focal immunopositive response to antibodies to the **vascular-endothelial growth factor (VEGF-A)** was detected predominantly in the stroma, presumably, in the cytoplasm of active fibroblasts and vascular endothelium (29.5% ± 0.8%, p<0.05).

Algological analysis 3 months after the start of treatment of recurrent EGE-associatedPP showed that the average pain intensity score on the B&B scale in group I patients was 0,40 ± 0,10, which was significantly higher compared to group II women (0,09 ± 0,04, p <0.05). However, the average score on the NRS scale for the same groups was 0,51 ± 0,11 and 0,08 ± 0,03 (p <0.05), for the VRS scale – 0,51 ± 0,11 and 0,08 ± 0,03 (p <0.05).

Compared with the histological results before commencement of aGnRh pharmacotherapy course at week 8, changes in the endometrium at the light-optical level are generally characterized by moderate changes in the glandular epithelium, primarily atrophic in its nature, in 68% of cases in group I (n = 44). In a number of foci, uterine glands with a narrow lumen, relatively low basal-type epithelium were found - areas of non-functioning endometrium, compact stroma with a moderate vascularization index and collagen-rich fibers of moderate thickness with a small number of active fibroblasts predominantly dominate. On the contrary, in the course of histological examination of week 8 endometrial biopsies, obtained in patients of group II during antiGnRh therapy, no significant differences were found in comparison with the results of the group biopsy before the start of pharmacotherapy. Detectable endometrium in the proliferation phase with no signs of atrophy in almost all observed foci. Single-rowedepitheliumwithbasalnuclei. In certain visual fields, uterine glands with signs of minor atrophy (5.9% ± 0.2%, *p<0.05*) are visualized, which generally characterizes the effect of antHnRH in group II patients on the condition and activity of the endometrium as satisfactory.

6 months after discontinuation of therapy for recurrent EGE-associated PP, the average indices of algological B&B, NRS, VRS questionnaires for patients in group I were 1,11±0,19, 1,65±0,26 and 1,65±0,26 points, respectively; for women in group II who received anti-GnRh: 0,37±0,11, 0,41±0,11 and 0,41±0,11, respectively. The average score from the algological questionnaires was significantly higher in group I patients (p<0.05). Persisting gland atrophy sites (6.1% ± 0.4%, p<0.05) are found in the study of the microscopic pattern also at week 18 in group II in patients who were administered antiGnRh.

Algological analysis of the B&B questionnaire 12 months after discontinuation of drug therapy for recurrent PP revealed a statistically significant difference in the incidence of dysmenorrhea, which was 1,73 times higher in group I patients of who took aGnRh, compared with women in group II (p = 0,00389, p<0.05).

The results of group I biopsies in patients taking a GnRh course indicateachangein **VEGF-A** expression. According to the morphometric analysis of samples obtained after 8 weeks from the start of aGnRh pharmacotherapy, the positive immunolabelling of the stromal component for antibodies to **VEGF-A** is significantly reduced (17.9%±0.6%, p<0.05) and shows a minimal weak, local response (1 point) in 16th week preparations (11.1% ± 0.4%, p<0.05). An interesting IHC pattern was found in group II in patients who completed the antiGrNHcourse. Immunopositive elements of the stroma with an IHC response to antibodies to **vascular-endothelial growth factor (VEGF-A)** were visualized in all biopsy specimens of group II, both before the start of pharmacotherapy and during treatment and upon completion. It is important to note that the absolute number of tissue components immunopositive to VEGF-A increased during antiGnRh therapy reaching 31.6%±2.3% and 33.4%±2.6% based on the results of the 8th week biopsy specimen and at the end of pharmacotherapy with antiGnRh after 16 weeks (figure 4).

Nerve growth factor (NGF) in group I (aGnRh) shows a positive stromal response in all samples obtained immediately before, during and at the end of pharmacotherapy. Based on the results of the analysis of endometrial biopsy specimens, prior to the patients receiving aGnRh (internal control), a pronounced reaction (3 points) was observed in many diffuse foci, sometimes perivascular (59.7% ± 3.1%, *p<0.05*) and periglandular (55.3% ± 2.1%, *p<0.05*), which corresponds to the most significant parts of the tissue innervationof endometrium.In samples 8 and 16 weeks in the group in patients undergoing a course of aGnRh pharmacotherapy, this indicator was 41.1% ± 3.2% (p<0.05) and 31.3% ± 2.6%, (p<0.05), respectively (figure 5). The level of NGF and NTRK1 expression (c.u.±SEM) for patients receiving aGnRh amounted to 2.67±0.18 (c.u.±SEM) for NGF before treatment, in the course of the administered therapy 2.11±0.16, and at the end of study, at the 18thweeks 2.39 ± 0.21; for NTRK1: 2.87 ± 0.25, 2.17 ± 0.18 and 1.12±0.12, respectively. Therefore, duringaGnRh treatment, the expression of these markers was statistically significantly reduced (p<0.05).

Ingroup II, patients taking anti-GnRH, on the background of pharmacotherapy, showed as table moderated ecrease in the number of immunopositive elements for antibodies to NFG (37.2% ± 1.9%, p<0.05) ascomparedwiththeinternalcontrol (57.2%±1.9%, p<0.05). Given the persisting pharmacodynamic effect and cumulation after the end of therapy at week 16, this indicator also remained below the control, being 35.2±1.9% (p<0.05) (table 2).

When studying the NGF and NTRK1 genes expression in patients who received antiGnRh, the NGF level (c.u.±SEM) before treatment was 2.59 ± 0.21, in the course of therapy 1.84±0.16% (p<0.05) and upon its completion 1.25±0.15% (p<0.05). For the NTRK1 receptor gene, these figures were 2.78 ± 0.25, 1.89 ± 0.11 (p<0.05) and 2.17± 0.22, respectively (p<0.05).

Table 2 – The proportion of IHC-positive structures in endometrial biopsy specimens in groups I, II, and III during and upon completion of aGnRh /antiGnRh therapy (p<0.05)*

Marker	VEGF, %	NGF, %	Caspase-3, %
Group I – aGnRh			
Before pharmacotherapy	28.9±1.3	58.7±3.1	27.1±1.8
8 weeks (during treatment)	17.9±0.6*	41.1±3.2*	47.3±3.8*
16 weeks (after treatment)	11.1±0.4*	31.3±2.6*	57.7±5.4*
Group II – antiGnRh			
Before pharmacotherapy	27.8±2.2	57.2±1.9	25.2±2.1
8 weeks (during treatment)	31.6±2.3*	37.2±1.9*	28.2±2.7
16 weeks (after treatment)	33.4±2.6*	23.5±1.3*	29.2±1.1

The next stage of the IHC study was the evaluation of immunological labeling of effector **caspase-3** (CASP3). According to morphometric analysis, a moderate IHC reaction (2 points) was found in the cells of endometrial glandular epithelium in group I patients (aGnRh).The distribution in this group in endometrial samples of the 8thand 16thweeks was 47.3% ± 3.8% and 57.7% ± 5.4% (p<0.05), respectively - a significant increase in the expression of the test protein was observed compared to the control (27.1% ± 1.8% , p<0.05). In group II (GnRH), no statistically significant change in the expression of caspase-3 was detected *(p> 0.05)* (figure 6).

The relative expression level of **pro-apoptotic BAK gene** in group I (**aGnRh**) before treatment was (c.u.±SEM) 1.15 ± 0.13, while receiving therapy 1.73±0.32 ($p<0.05$) and after treatment 1.96 ± 0.41 ($p<0.05$); the expression level of pro-**apoptotic BAX gene** (c.u.±SEM): 1.25 ± 0.21, 1.91 ± 0.67 ($p<0.05$) and 2.16 ± 0.84 ($p<0.05$), respectively. For the expression of the **anti-apoptotic (BCL-2)** gene in group I, these values were: 1.86 ± 0.15, 1.15 ± 0.16 ($p<0.05$) and 1.23 ± 0.13 ($p<0.05$), respectively. In the group of patients who received antHnRH, the relative expression level of the **pro-apoptotic BAK gene** (c.u.±SEM) before treatment was 1.18 ± 0.11, when taking antHrH 1.05±0.03 ($p<0.05$) and 1.07±0.05 after a course of antGnRg treatment of EGE-associated PP, the level of **pro-apoptotic BAX gene** (c.u. ± SEM) was 1.21 ± 0.13, 1.03 ± 0.15 and 1.02 ± 0.11, respectively. For the expression of the **anti-apoptotic (BCL-2)** gene in group II, these figures were: 1.78 ± 0.21, 2.19 ± 0.38 ($p<0.05$) and 2.23 ± 0.29 ($p<0.05$), respectively.

After the end of EGE-associated PP treatment, 67,69% of patients in group I (aGnRh) experienced recurrence of PP, while 32,31% did not. In group II patients (antiGnRh), recurrence of PP was observed in 46,15% of women, while pain did not recur in 53,85%. Group I was statistically significantly different from group II patients in the incidence of PP recurrences after the end of aGnRh treatment ($p = 0,01315$, $p<0.05$), (OR = 2.44 (1.2; 4.98)).

Discussion. In the present study, biopsy specimen of eutopic endometrium were studied in patients suffering from PP that had not stopped after surgical EGE treatment. We found that during endometriosis-associated PP aGnRh therapy, endometrial function was significantly inhibited, and aGnRh had a cumulative effect on the endometrial receptor apparatus caused by the development of drug-induced hypoestrogenism. A different picture was observed in patients taking antHnRg, whose overall effect on the functional state of the endometrium was significantly more favorable, as there was almost no disruption of local homeostasis, which indirectly confirms high tolerability of antiGnRh compared with aHNRH in patients with endometriosis-associated PP.

The above histological picture was subsequently confirmed by comparative morphometric analysis, indicating statistically significant changes in terms of height of the glandular epithelium, diameter and number of uterine glands detected, which characterizes the progression of endometrial atrophy in long-term administration of aGnRh in contrast to antGnRh (table 3).

The resulting reduction in **VEGF-A** immunological labeling over a period ~2.7 times indicates a general inhibition of the natural angiogenesis process in the endometrium during aGnRh treatment. The negative staining dynamics on VEGF-A indicates the inhibition of endothelium proliferation during long-term aGnRh administration, which undoubtedly correlates with a decreased vascular index found during microscopic examination. The obtained data indirectly indicate the dissociation of cellular and molecular processes of maintaining local homeostasis, including an indication of degraded recovery to the proliferating stage with subsequent endometrial atrophy, morphologically manifested in its atrophy. These changes in the histophysiology of tissues are perhaps one of the key links in the pathogenesis of adverse and side effects accompanying the aGnRh course due to the development of drug hypoestrogeny, which imposes significant restrictions on their long-term use in PP therapy, taking into account the proven negative effect on endometrial function in vivo (figure 2).

Positive dynamics in the IHC response to VEGF in the course and upon completion of antiGnRh the rapy indicates an increase, presumably, associated with the compensation of theantiGnRh pharmacodynamic effect in the hypothalamic-pituitary-ovarian axis in response to a decrease in the secretion of LH and estradiol (table 3).

In the course of morphometry, it was established that the **NGF** immunolabeling dynamics pattern in patients taking aGnRh is accompanied by a gradual decrease in the absolute number of immunopositive tissue elements. A similar IHC reaction is observed in women in the course of antiGnRh therapy, who showed a stable moderate decrease in the number of immunopositive elements for NFG antibodies (37.2% ± 1.9%, $p<0.05$) compared to the pre-treatment measurement (57.2% ± 1.9%, $p<0.05$). A decrease in the *NGF* expression level and its *NTRK1* gene upon administration of aGnRh and antiGnRh indicates a decrease in the density of local tissue innervation, which plays a key part in the PP resolution.

Expression of CASP3 pro-apoptotic protein increased over the course of aGnRh therapy, which indicates an intensification of apoptosis, which is also one of the mechanisms involved in the development of endometrial atrophy when taking aGnRh (figure 6). The opposite picture was observed in group II patients duringantiGnRh therapy, where CASP3 expression did not statistically change during treatment, which indicates the absence of the proapoptotic effect of antiGnRh on the endometrial cell composition.

When assessing the relative expression of **proapoptotic** (BAK, BAX) and **antiapoptotic** (BCL-2) genes in group I (**aGnRh**), it was found that, under the influence of aGnRh, there is a statistically significant increase in the expression of proapoptotic genes and a decrease in the *BCL-2* expression by about 1,5 times, which confirms the earlierobtained IHC data on changes in the genetic pattern and induction of apoptosis. The opposite picture is demonstrated by evalution of the expression of these genes in group II (**antiGnRh**): a slight decrease in the expression of pro-apoptotic genes and a statistically significant increase in the expression of the anti-apoptotic *BCL-2* gene were found, which confirms the supposition about the protective effect of antiGnRh on the endometrium in comparison with antiGnRh.

At the same time, the above results are not isolated, but, on the contrary, represent interrelated links and indirectly prove the neurotrophic mechanism for the development of endometrial atrophy in the course of proapoptotic action when taking aGnRh in PP therapy. However, the antagonist drug has the opposite effect, being a kind of antipode of aGnRh in relation to the effect on the activity of the endometrium, despite the suppression of estrogen secretion.Having a positive effect in the PP treatment, antiGnRh also provides stable trophism and supports the endometrial tissue innervation apparatus, which plays a protective role in relation to the function of the entire mucous membrane of the uterus and, in aggregate, indicates better tolerability and efficacy, all other things being equal compared to arGnRh (figure 6) (table 3).

Table 3 – Comparison of the relative expression level of the studied genes
in endometrial biopsy specimenin PP pharmacotherapy with GnRH agonists

Gene	Pre-therapy, y.e. ± SEM	During therapy (8 weeks) c.u. ± SEM	At the end of therapy (18 weeks) c.u. ± SEM
BAK	1.15±0.13	1.73±0.32*	1.96±0.41*
BAX	1.25±0.21	1.91±0.67*	2.16±0.84*
BCL-2	1.86±0.15	1.15±0.16*	1.23±0.13*
VEGFR-1	3.49±0.37	2.97±0.39*	2.14±0.17*
VEGFR-2	2.57±0.12	2.12±0.26	1.96±0.26*
NTRK1	2.87±0.25	2.17±0.18	1.12±0.12*
NGF	2.67±0.18	2.11±0.16	2.39±0.21*
c.u. – conventional units, * – statistical differences, p<0.05.			

The study revealed changes in the endometrium of patients treated with aGnRh of predominantly atrophic nature in 68% of cases of group I (n=44). Minor are as of glands at rophy were observed in women whowere administered antiGnRh, (6.1%±0.4%, p<0.05). The resulting decrease in immunological **VEGF-A** labeling in group I (aGnRh) in the dynamics of ~ 2,7 times indicates an overall inhibition of the natural angiogenesis process in the endometrium during aGnRhtreatment. Positive dynamics in the IHC response to VEGF in the course and at the end of antiGnRhtherapy indicates an increase, presumably, due to compensation of the pharmacodynamic effect of antiGnRh in the hypothalamic-pituitary-ovarian axis in response to a decrease in LH and estradiol secretion. The number of immunopositive endometrium elements during IHC-reaction of immunolabeling to **NGF** in patients taking aGnRh decreased 1,9 times in patients receiving aGnRh, and 2,43 times during antGnRhcourse (p<0.05). The decrease in the expression of ***NGF*** and ***NTRK1*** during the in take of a GnRh and ant GnRh indicates a decrease in the density of localtissue innervation, which playsakey role in the PP resolution. This picture is presumably due to the same abnormalities in endometrial molecular cell processes developing during aGnRh administration in the context of hypoestrogenism. The pro-apoptotic **CASP3** protein expression is increased over the course of aGnRhtherapy, which indicates apoptosis intensification. In patients of group II during antGnRh therapy, **CASP3** expression did not statistically change during treatment, which indicates the lack of proapoptotic effect of anti-GnRG on endometrial cell composition.

It was established that under the influence of aGnRh in group I, there is a statistically significant increase in the expression of proapoptotic genes **BAKиBAX** and a decrease in the expression of *BCL-2*, about 1,5 times. Evaluation of the expression of these genes in group II (anti-GnRh) reveals a slight decrease in the expression of proapoptotic genes and a statistically significant increase in the expression of the anti-apoptotic BCL-2 gene ($p<0.05$).

Findings. The problem of EGE-associated pelvic pain caused by EGE, in its relevance is still the world's leading position. Summarizing the results of the study, it can be concluded that the potential for the formation of hyperalgesia in the case of EGE-associatedpain is increased innervation of the eutopic endometrium.Currently, foreign and domestic literature proposed a number of treatment regimens for endometriosis-associated PP, each of which has its own advantages and disadvantages. It is important to emphasize that the necessary specialized assistance to women with EGE and the resulting PP will be most effective with an adequate multidisciplinary approach after early elimination of other causes of PP without long-term delay.

GnRh antagonists are more effective ($p<0.05$) in correcting pelvic pain recurrence in patients who did not receive drug therapy after surgical treatment of external genital endometriosis, compared with GnRh agonists. In our opinion, this is due to the fact that in the pelvic pain pathogenesis in these women, the leading role is played by activation of neurogenesis mechanisms with an increase in angiogenesis and a decrease in apoptosis, typical of all forms of endometriosis. GnRh agonists have a pronounced inhibitory effect on neurogenesis and neoangiogenesis accompanied by the development of atrophy of the eutopic endometrium and iatrogenic amenorrhea. Compared to GnRh agonists, the effect of GnRh antagonists on inhibition of neurogenesis processes is more pronounced due to predominant inhibitory effect on nerve growth factor rather than its receptor, and the effect on apoptosis is mediated by preferential activation of anti-apoptosis mechanisms.The absence of inhibition of neoangiogenesis mechanisms not only does not prevent their therapeutic effect in relation to pain, but also allows preserving menstrual function in more than half of the patients in the cohort under study. The obtained results are promising with respect to the possible use of GnRhantagonists in patients with painful forms of endometriosis, including from the point of view of personification of their tactics.

CONCLUSIONS

Conclusion 1:

The basis of pathogenesis of pelvicpain recurrence in patients who did not received rug the rapy after surgical EGE treatmentis the activation of neurogenesis processes and reduction of a poptosis.This is evidenced by an increase in the expression of nerve growth factor - NGF (57,9±2,5 versus 35,3±2,1% ± SEM in patients with painless form $p<0.05$), its NTRK1 receptor gene (2,78±0,25 vs. 1,56±0,21 c.u. ± SEM, respectively, $p<0.05$); and a decrease in CASP3 protein expression (26,1±1,95 versus 23,1±2,2 c.u. ± SEM, $p<0.05$). At the same time, there were no statistically significant differences in the indices of angiogenesis activity (VEGF-A expression = 28,4±1,8 in patients with painful form versus 29,5±0,8 c.u. ±SEM painless form, respectively, $p>0.05$).However, there are no differences in the neoangiogenesis activity indices in comparison with the painless form (VEGF-A expression = 28,4±1,8 versus 29,5±0,8 c.u. ±SEM, $p>0.05$).

Conclusion 2:

GnRh agonists have apronounced inhibitoryeffect on the neoangiogenes is process. Their use is accompanied by as tatistically significant decrease in the intensity of immunolabeling reaction to VEGF antibodies (2,6 times; from 28.9±1.3% to 11.1±0.4%, $p<0.05$), as well as the expression of its VEGFR-1 receptor genes (1,63 times; from 3.49±0.37 to 2.14±0.17 c.u. ± SEM, $p<0.05$) and VEGFR-2 (2,68 times; from 2.57±0.12 to 1.96±0.26 c.u. ± SEM, $p<0.05$) in the presence of pronounced endometrial atrophy (epithelial height 19.1±1.2, gland diameter -112.3 ± 3.7μm versus 13.1 ± 1.7 and 91.3±3.5 μm, respectively in the control group, $p<0.05$) and naturally following amenorrhea in 100% of patients.

On the contrary, during therapy with GnRH antagonists, neoangiogenesis is not suppressed, and there is an increase in the intensity of the immunolabeling of antibodies to VEGF (1,2 times; from 27.8±2.2% to 33.4±2.6%, $p<0.05$) and the expression of its VEGFR-1 receptor genes (1,23 times; from 3.51 ± 0.36 to 4.32 ± 0.56 c.u.±SEM, $p<0.05$) and VEGFR-2 (1,13 times; from 2.53±0.11 to 2.86±0.19 c.u.±SEM, $p<0.05$),while 53% of patients had their menstrual cycles in the context of a minor endometrium atrophy (epithelial height 19.4±1.5, gland diameter –119.4±3.4μm versus 18.3±2,6, 118.3±14.2μm in the control group, $p<0.05$).

Conclusion 3:

During therapy using GnRh agonists, there is a firm decrease in the intensity of the reaction of IHC-labeling of antibodies to NGF (1,8 times; from 58.7±3.1 to 31.3±2.6%, $p<0.05$) NGF gene expression

(1,12 times; from 2.67±0.18 to 2.39 ±0.21c.u.±SEM, p<0.05) and the expression of its NTRK1 receptor gene (2,48 times; from 2.78±0.25 to 1.12±0.12 c.u. ± SEM, p<0.05).

During antiGnRh therapy, a similar dynamics takes place - a statistically significant decrease in the intensity of the reaction of IHC-labeling of antibodies to NGF (2,4 times; from 57.2 ± 1.9 to 23.5±1.3%, p<0.05), expression of the NGF gene (2,1 times; from 2.59±0.21 to 1.25±0.15CU±SEM, p<0.05) and expression of its receptor NTRK1 gene (1,28 times; from 2.78±0.25 to 2.17±0.22c.u.±SEM, p<0.05). However, the effect of GnRh antagonists on the inhibition of neurogenesis processes as compared with GnRh agonists is more pronounced due to the predominant effect on the nerve growth factor itself but not on its receptor (intensity of the IHC-labeling response of antibodies to NGF is 23.5±1.3% versus 31.3±2.6%, p<0.05; expression of the NGF gene is 1.25 ±0.15 c.u. ± SEM vs. 2.39 ± 0.21 cu ± SEM, p<0.05); expression of NTRK1 receptor gene is 2.17±0.22 versus 1.12±0.12c.u., ± SEM, p<0.05).

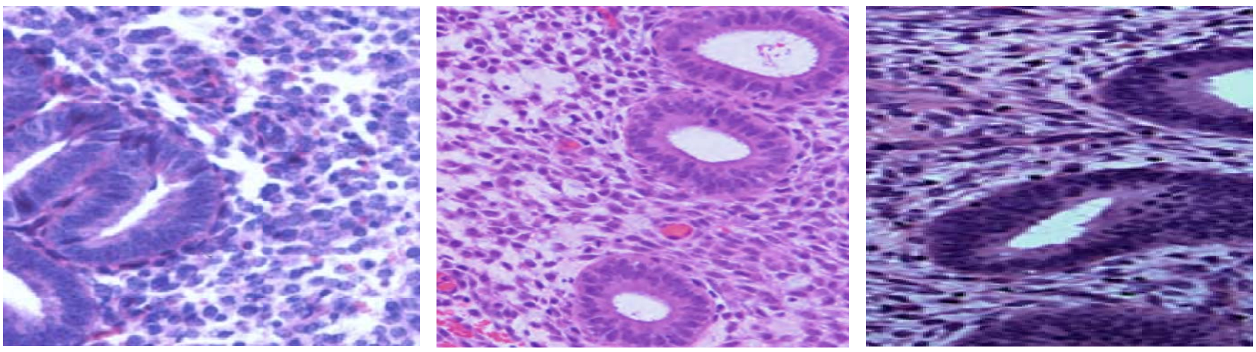
Conclusion 4:

During GnRh agonists therapy, there is a firm increase in the intensity of the IHC-labeling reaction of antibodies to CASP-3 (2,12 times; from 27.1±1.8 to 57.7±5.4%, p<0.05) and BAK gene expression (from 1.15±0.13 to 1.96±0.41 c.u.±SEM, p<0.05) and BAX (1.25±0.21 to 2.16±0.84 c.u. ±SEM, p<0.05), in a decreased expression of the BCL-2 gene (from 1.86 ±0.15 to 1.23±0.13 c.u.± SEM, p≤0.05).

GnRh antagonist therapy is also accompanied by a statistically significant increase in IHC-labeling of antibodies to CASP3 (1,16 times; from 25.2±2.1 to 29.2±1.1%, p≤0.05); however, their effect on apoptosis is due to a predominant activation of antiapoptosis mechanisms (increased gene BCL-2 expression 1,25 times; from 1.78 ± 0.21 to 2.23 ± 0.29 c.u. ±SEM (p<0.05). In this case, the expression of proapoptotic genes does not change (respectively, BAK - from 1.18±0.11 to 1.07± 0.05 c.u. ±SEM, p> 0.05; BAX - from 1.21±0.13 to 1.02±0.11 c.u. ±SEM, p>0.05).

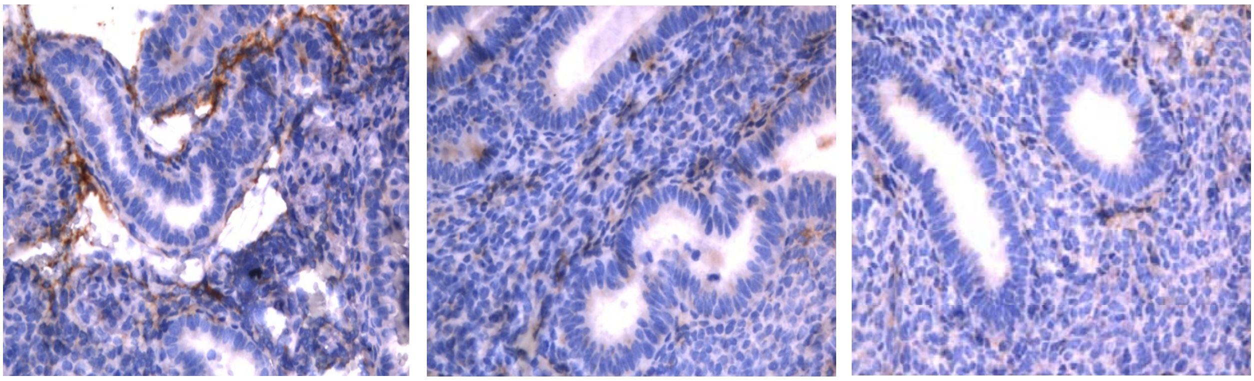
Table 4 – Comparison of the relative expression level of the studied genes in endometrial bioptic materials with pharmacotherapy with GnRh antagonists in PP

Gene	Pre-therapy, y.e. ± SEM	During administered therapy (8 weeks) c.u. ± SEM	Upon completion of therapy (18 weeks) c.u. ± SEM
BAK	1.18±0.11	1.05±0.03*	1.07±0.05
BAX	1.21±0.13	1.03±0.15	1.02±0.11
BCL-2	1.78±0.21	2.19±0.38*	2.23±0.29*
VEGFR-1	3.51±0.36	4.23±0.45*	4.32±0.56*
VEGFR-2	2.53±0.11	2.73±0.11*	2.86±0.19*
NTRK1	2.78±0.25	1.89±0.11*	2.17±0.22*
NGF	2.59±0.21	1.84±0.16*	1.25±0.15*
c.u. – conventional units, * – statistical differences, p<0.05.			



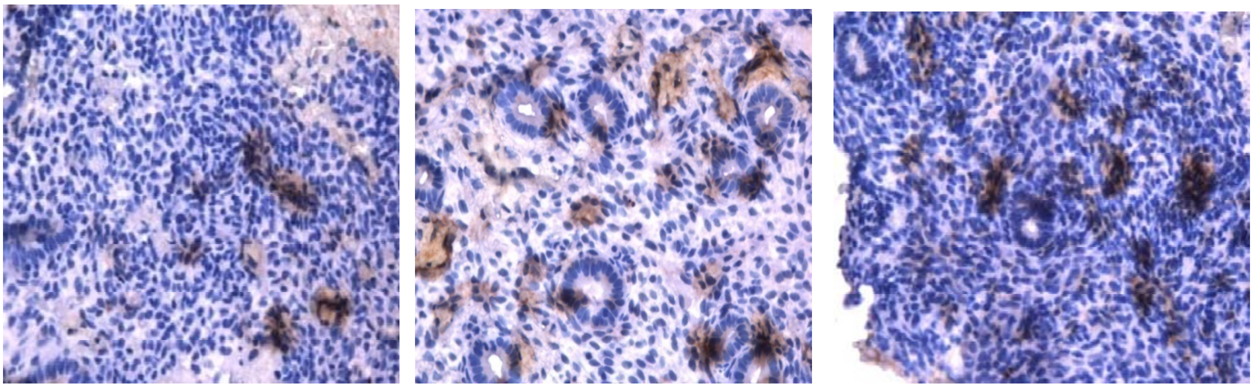
a **b** **c**

Figure 1 – Postoperative period (6 - 12 months). Endometrium (light microscopy method, staining: hematoxylin and eosin, magnification × 20): a – Group I (PP), b – Group II (PP), c – Group III (control)



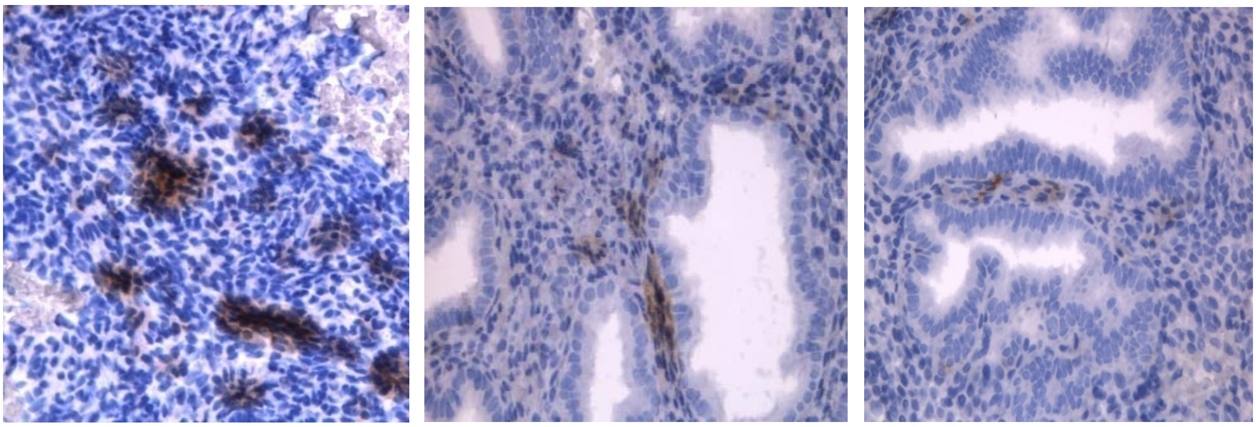
a b c

Figure 2 – Endometrium. Group I - aGnRh course (IHC method:
antibodies to VEGF-A, counterstaining using hematoxylin, magnification × 40): a - before therapy (internal control);
b - during therapy (8 weeks); c - at the end of therapy (12 weeks including monitoring)



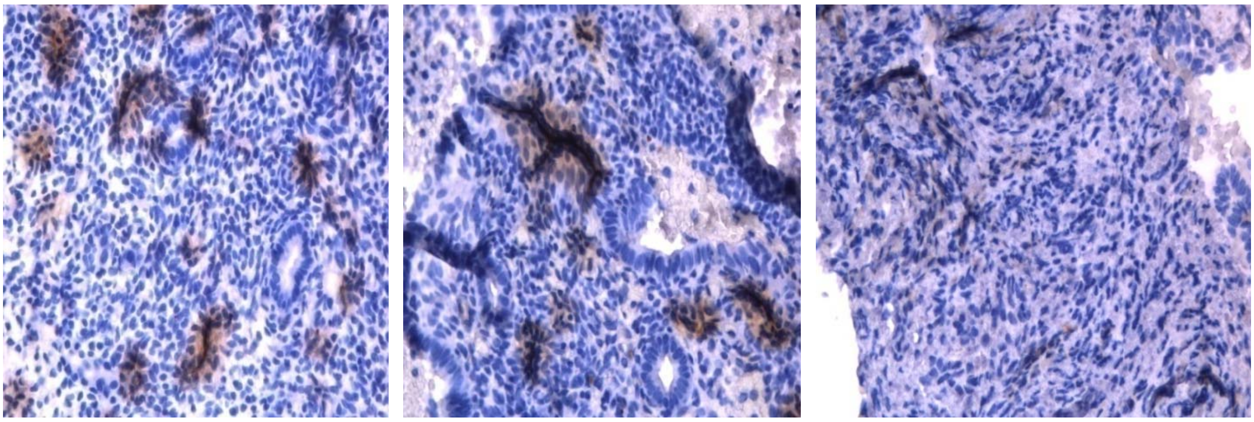
a b c

Figure 3 – Endometrium. Group II - antiGnRh course
(IHC method: antibodies to VEGF-A, counterstaining with hematoxylin, magnification × 40):
a - before therapy; b - during therapy (8 weeks); c - at the end of therapy (12 weeks including monitoring)



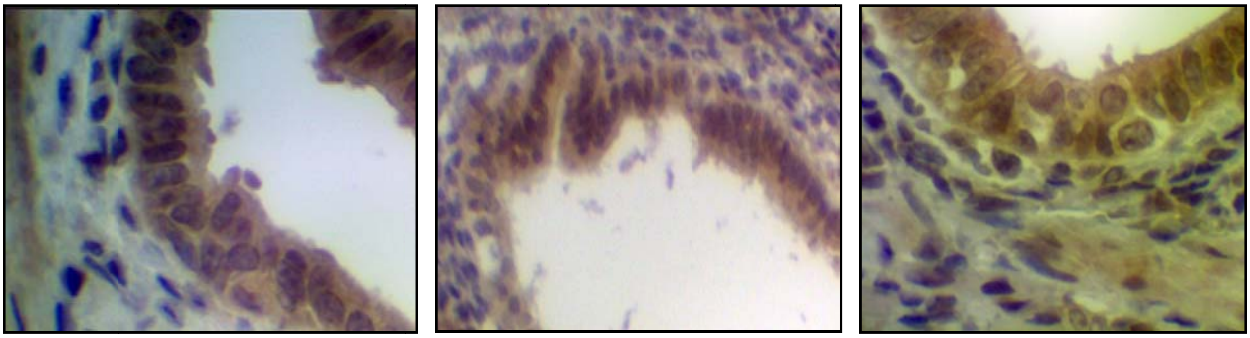
a b c

Figure 4 – Endometrium. Group I - aGnRh course (IHC method: antibodies to NGF, counterstaining
with hematoxylin, magnification × 40): a - before therapy (internal control); b - during therapy (8 weeks);
c - at the end of therapy (12 weeks including monitoring)



a **b** **c**

Figure 5 – Endometrium. Group II - anti-GnRh course
(IHC method: antibodies to NGF, counterstaining with hematoxylin, magnification × 40):
a - before therapy (internal control); b - during therapy (8 weeks); c - at the end of therapy (12 weeks including monitoring).



a **b** **c**

Figure 6 – Endometrium. Groups I and II (IHC method: antibodies to caspase-3, counterstaining with hematoxylin, magnification × 40): a - group I (aGnRh) during therapy (8 weeks); c - II (antGnRh) during therapy (8 weeks), c - before therapy

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АГОНИСТЫ И АНТАГОНИСТЫ ГОНАДОТРОПИН-РИЛИЗИНГ ГОРМОНА: ВЛИЯНИЕ НА НЕЙРОАНГИОГЕНЕЗ И АПОПТОЗ В ЭУТОПИЧЕСКОМ ЭНДОМЕТРИИ ПРИ ТЕРАПИИ РЕЦИДИВА ТАЗОВОЙ БОЛИ, ОБУСЛОВЛЕННОЙ НАРУЖНЫМ ГЕНИТАЛЬНЫМ ЭНДОМЕТРИОЗОМ

Аннотация. Эндометриоз является одним из самых распространенных гинекологических заболеваний которое диагностируется почти у 70 % пациенток с хронической тазовой болью (ХТБ). В то же время у четверти женщин с тазовой болью во время лапароскопии обнаруживается наружный генитальный эндометриоз (НГЭ). Особую группу представляют пациентки с ТБ, не купировавшейся после удаления эндометриоидных очагов. Механизмы патогенеза формирования болевого синдрома при этом остаются до конца не раскрытыми. Значительную роль, по мнению ряда авторов, в патогенезе рецидива тазовой болипосле хирургического лечения НГЭ играет активный нейроангиогенез, как в эктопическом, так и эутопическом эндометрии. Агонисты ГнРг являются «золотым стандартом» лечения эндометриоза и высокоэффективным в отношении тазовой боли, ассоциированной с ним. В ряде европейских стран для лечения ТБ, обусловленной НГЭ, зарегистрированы антагонисты ГнРг. Принимая во внимание до конца не раскрытые механизмы формирования ТБ при НГЭ, научный интерес представляло изучение экспрессии нейроваскулярных маркеров в эутопическом эндометрии на фоне терапии аГнРг и антГнРг.

Цель исследования – сравнить влияние агонистов и антагонистов ГнРг на нейроангиогенез и апоптоз в эутопическом эндометрии пациенток с тазовой болью, не купировавшейся (рецидив) после хирургического лечения НГЭ. Расширить представление о патогенезе тазовой боли не купировавшейся (рецидив) после хирургического лечения наружного генитального эндометриоза.

Материал и методы. Исследование предусматривало 2 этапа. На I этапе (алгологический) были проанализированы данные алгологических опросников B&B, NRS, VRS, заполненных пациентками с рецидивом ТБ после хирургического лечения НГЭ (n=130, в возрасте от 18 до 45 лет, средний возраст 32,5±7,6 года). Все женщины были прооперированы по поводу НГЭ не позднее 3-6 мес, они не получали медикаментозную терапию после хирургического лечения и обратились с рецидивом ТБ. Пациентки были стратифицированы группы (I группа – аГнРг, II группа – антГнРг). Лечение проводили в течение 3 мес (аГнРг внутримышечно 1 раз в 28 дней, антГнРгperos 100 мг/сут). На II этапе исследовали динамику маркеров неоангиогенеза (VEGF), нейрогенеза (NGF) и апоптоза (CASP3) на фоне лечения иммуногистохимическими и молекулярно-биологическими методами. Материалы для исследования эндометрия были получены методом аспирационной пайпель-биопсии. Контрольная группа была сформирована из числа женщин с НГЭ без ТБ, обратившиеся для хирургического лечения бесплодия (n=30).

Результаты исследования постановили, что в основе патогенеза рецидива тазовой боли у пациенток, неполучавших медикаментозную терапию после хирургического лечения НГЭ, лежит активация процессов нейроангиогенеза и снижение апоптоза. При этом выявлено снижение иммунологического маркирования VEGF-A в динамике лечения аГнРг в 2,6 раза, в группе пациенток, получавших антГнРг, напротив, отмечалась положительная динамика в ИГХ-реакции на VEGF ($p<0,05$). Реакция иммуномечения на антитела к NGF в I группе снизилась в динамике лечения аГнРг в 1,8 раз, во II группе на фоне терапии антГнРг в 2,4 раза ($p<0,05$). Уровень экспрессии проапоптотического белка CASP3 увеличивался в динамике в 2,1 раза

на фоне терапии аГнРг, что свидетельствует об интенсификации апоптоза (p<0,05). У пациенток II группы на фоне терапии антГнРг, экспрессия CASP3 за время лечения статистически не изменилась, что указывает на отсутствие проапоптотического влияние антГнРГ на клеточный состав эндометрия (p>0,05).

Заключение. Антагонисты ГнРг обеспечивают стабильную трофику эндометрия на фоне лечения ТБ при НГЭ, обуславливая их лучшую переносимость, а также эффективность.

Ключевые слова: нейроангиогенез, тазовая боль, эндометриоз, апоптоз, агонисты ГнРг, антагонисты ГнРг.

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RESULTS OF THE TARGETED SELECTIVE AND BREEDING WORK OF THE SIMMENTAL RED-AND-MOTLEY BREED OF DAIRY CATTLE

Abstract. The article presents the characteristics of selective-breeding work with the "Ertis" red-and-motley cattle of the Simmental breed created by scientists of the KazSRIAB&FP LLP, on the basis of improving the Simmental breed of cattle in the direction of raising dairy productivity using the gene pool of imported servicing bulls.

The aim was to summarize the results of targeted selective and breeding work for the period after approbation of animals of the new "Ertis" red-and-motley dairy type of cattle of the Simmental breed by the example of the herd of Kirov LLP, as well as the current state of their productivity.

The average indices of productivity of the main selection traits were taken into account, such as milk yield for 305 days of lactation, fat and protein percentage, live weight, and also their average duration of productive use. Where the percentage of fat and protein was determined by modern devices on the analyzers of the integrated milk quality system (Milkoscan FT+, Fossomatic FT+) and statistical data were processed according to standard methods.

As a result, for the period 2009 - 2016, a significant increase in the productivity of cows was achieved, the average milk yield for 305 days in lactation in the herd was increased by 2089 kg or 54.4% (from 3829±42.3 to 5928±27.8).

According to the last completed lactation, the average milk yield per cow for 305 days by the first lactation was 5040.1±65.16 kg of milk (n=108), by the second - 5814.1±49.66 kg (n=385), by the third and older lactation 6269.7±37.76 kg (n=410).

The average duration of productive use of cows was 2.8 lactations (lim 1-9), of which the third and older lactations were 45.4%.

Thus, the targeted selective and breeding work to improve the productive qualities of the "Ertis" red-and-motley type of cattle of the Simmental breed in the Kirova LLP is quite profitable and acceptable for further breeding and its selection preservation.

Keywords: breed, intra-breed type, cow, milk, lactation, gene pool, productive longevity, selection.

Introduction. Currently, one of the main methods of improving low-productive breeds of dairy cattle is the use of the gene pool of foreign high-yielding livestock breeds. One of the key tasks should be the creation of genotypes of dairy cattle, which combines the high dairy productivity of the world's breeding achievements with the preservation of the adaptive potential of the gene pool of domestic breeds.

With the aim of qualitative transformation of the Simmental breed of cattle in the direction of increasing the dairy productivity and improving the morphofunctional properties of the udder, in the breeding zone of the breed since 1986, under the scientific supervision of the researchers of KazSRIAB&FP LLP, large-scale works on the use of imported servicing bulls of the intensive dairy breeds: Montbeliarde, Holstein red-and-motley, German red-and-motley and Ayrshire.

As a result of many years of work, by the efforts of scientists and practitioners, in 2009 a new intra-breed "Ertis" red-and-motley dairy type of Simmental breed was created and tested. According to the data of the researchers [1-3], during the approbation of the "Ertis" red-and-motley cattle, in contrast to Simmental animals, it exceeds the milk yield, on average for all lactations by 1500 kg, or 73% by the first lactation, 57 % - by the second, for 46% - by the third and older. In comparison with the original gene pool of the mother breed (56th volume of the SSB of Simmental breed), this superiority is 95%, or more than 100 kg of milk per lactation. As for live weight and fat content in milk, cows conform to the Simmental breed standard; the indicators of development of young animals in all age periods are also at the level of the standard of the breed or exceed it.

A positive shift is also achieved in the selective improvement of the morphofunctional properties of the udder, its suitability for machine milking. More than 2/3 of the cow population of the created dairy type have a bath- and cup-shaped udder, which is 1.7 times larger than in the original Simmental breed. More than 30% increased the intensity of milk yield and at present is 1.42 kg/min.

The main array of the created population is represented by animals of strong and solid constitution, with a sufficient broad and deep chest, a harmonious physique close to the dairy type. The colour is predominantly red and mottled. The adaptability to long-term maintenance in the arid dry-steppe zone is preserved.

The aim of the work was to summarize the results of targeted selective and breeding work for the period after approbation of animals of the new "Ertis" red-and-motley dairy type of cattle of the Simmental breed on the example of the herd from Kirova LLP.

Object and methodology. Scientific research was conducted in Kirova LLP in the Pavlodar region on the breeding herd of the "Ertis" red-and-motley type of cattle of the Simmental breed. The documents of primary zootechnical and pedigree records served for the analysis of productivity.

The milk yield was determined by monthly control milk yield with conversion to 305 days of lactation, the fat and protein content in milk was determined by modern devices on the analyzers of the integrated milk quality system (FOSS electric, Denmark).

The class composition of cows was identified in the course of livestock judgement during the year according to the instructions for the bonitation of dairy and dairy-meat cattle [4].

Analysis of the traits of cows for dairy productivity and the duration of productive longevity were processed by methods of variation statistics using the MS Excel computer program [5].

Results of the research. In consequence of targeted selective and breeding work with the Kirova LLP herd, a significant increase in the productivity of cows was achieved in 8 years after the approbation of the "Ertis" new red-and-motley dairy cattle type of Simmental breed (table 1).

Table 1 – Growth dynamics of average milk yield of cows in the herd

#	Years	Number of cows, heads	Average milk yield per cow, kg	Difference by years	
				kg	%
1	2009	572	3839 ± 42,3		
2	2010	898	3825 ± 33,1	- 14	- 0.4
3	2011	763	4003 ± 37,5	+ 178	+ 4.8
4	2012	532	4046 ± 35,1	+ 43	+ 1.2
5	2013	459	4570 ± 38,8	+ 524	+ 12.9
6	2014	618	4924 ± 51,5	+ 342	+ 7.7
7	2015	797	5234 ± 56,6	+ 310	+ 6.3
8	2016	903	5928 ± 27,8	+ 694	+ 13.3

Thus, the average milk yield for 305 days in lactation in the herd increased by 2089 kg or 54.4% (from 3829±42.3 to 5928±27.8). However, it should be noted that the dynamics of increasing the milk yield of cows from year to year have been uneven. This is due to the natural and climatic conditions of certain years and maintenance conditions since the main milk yield is obtained in the summer pasture period.

The modern herd of Kirova LLP by average milk yield per cow exceeds the average indicator for Pavlodar oblast by 3274 kg or 128.6% of milk (5828 - 2554 kg) (table 2).

According to the last completed lactation, the average milk yield per cow for 305 days was 5040.1±65.16 kg of milk (n=108) by the first lactation. By the second lactation it was 5814.1±49.66 kg

Table 2 – The modern characteristics of cow productivity in the context of lactation

#	Lactation period	n	Milk yield for 305 days of lactation, kg		Fat, %		Protein, %		Live weight, kg	
			X ± m	Cv	X ± m	Cv	X ± m	Cv	X ± m	Cv
1	1 lactation	108	5040.1 ± 65.16	13.4	3.92 ± 0.01	2.3	3.31 ± 0.00	1.1	431.9 ± 1.88	4.5
2	2 lactation	385	5814.1 ± 49.66	16.8	3.93 ± 0.00	2.2	3.32 ± 0.00	1.4	475.2 ± 1.40	5.8
3	3 lactation and older	410	6269.7 ± 37.76	12.2	3.94 ± 0.00	2.5	3.26 ± 0.01	3.4	571.9 ± 1.43	5.1
4	Total:	903	5928.4 ± 90.10	15.8	3.93 ± 0.01	2.4	3.29 ± 0.01	2.6	514.0 ± 5.87	11.9

(n=385), by the third and older ones - 6269.7±37.76 kg (n=410), the fat content of milk, according to lactations respectively: 3.92%; 3.93%, 3.94%, protein content - 3.31%; 3.32%; 3.26%, live weight - 431.9±1.88; 475.2±1.4; 571.9±1.43 kg.

Of the total cow population of the herd, 77 animals were selected for breeding group according to the exteriors and productive qualities, their average yield was 7787.7±25.15 kg, fat in milk - 3.96±0.01%, protein 3.219±0.01 % and live weight - 524.1±5.85 kg.

The main indicator of animal adaptation to local conditions of maintenance and feeding is the duration of the productive longevity of cows. The process of intensification of dairy cattle breeding is accompanied by a significant reduction in the period of economic use of cows. According to many researchers in Canada, the USA, Russia, the productive use of cows does not exceed 2-3 lactations [6-9].

The average duration of productive use of cows in the herd of Kirova LLP was 2.8 lactations (lim 1-9), while the number of animals of the 3rd and older lactation was 45.4% (table 3).

Table 3 – Average duration of productive use of cows

#	Lactation	n	Milk yield for 305 days, kg		Fat, %		Protein, %		Live weight, kg	
			X ± m	Cv	X ± m	Cv	X ± m	Cv	X ± m	Cv
1	1st	108	5040.1 ± 65.16	13.4	3.92 ± 0.01	2.3	3.31 ± 0.00	1.1	431.9 ± 1.88	4.5
2	2nd	385	5814.1 ± 49.66	16.8	3.93 ± 0.00	2.2	3.32 ± 0.00	1.4	475.2 ± 1.40	5.8
3	3rd	184	6244.8 ± 61.28	13.3	3.94 ± 0.01	2.6	3.31 ± 0.00	1.8	568.5 ± 2.33	5.6
4	4th	159	6326.6 ± 53.97	10.8	3.94 ± 0.01	2.7	3.23 ± 0.01	4.1	576.9 ± 2.06	4.5
5	5th	19	6366.4 ± 175.62	12.0	3.92 ± 0.02	2.7	3.24 ± 0.03	3.5	572.9 ± 6.23	4.7
6	6th	24	6227.9 ± 161.07	12.7	3.93 ± 0.02	1.9	3.18 ± 0.03	4.1	562.5 ± 5.41	4.7
7	7th	8	5918.5 ± 185.33	8.9	3.96 ± 0.04	2.7	3.16 ± 0.04	3.4	570.0 ± 8.24	4.1
8	8th	15	6170.5 ± 214.97	14.7	3.94 ± 0.02	1.7	3.24 ± 0.03	3.3	578.0 ± 7.63	5.1
9	9th	1	5276.0		3.89		3.20		560.00	

From the analysis of the studied cows of the herd, it was established that full-grown cows (3rd lactation and older) show the greatest productivity - 6269.7±37.76 kg in the range of 5276-6326 kg.

In the age aspect, the fat and protein content in milk is not significantly different. The live weight showed an increase with age of the animals from 431.9 to 570.0 kg.

Thus, from the obtained data it follows that the targeted selective-breeding work to improve the productive qualities of the "Ertis" red-and-motley cattle of the Simmental breed is quite profitable.

Duration of productive use of cows of the herd of the Kirova LLP is acceptable for further breeding and its selection conservation.

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СИММЕНТАЛ ТҰҚЫМЫ СҮТТІ МАЛЫ ҚЫЗЫЛ-АЛА ТҮРІНІҢ МАҚСАТТЫ СЕЛЕКЦИЯЛЫҚ-АСЫЛДАНДЫРУ ЖҰМЫСЫНЫҢ НӘТИЖЕЛЕРІ

Аннотация. Мақалада симментал ірі қара мал тұқымын жақсарту мақсатында сүт өнімділігін көтеру үшін, шетелдік өндіріші-бұқалардың генофондын қолдану арқылы "ҚазМШжЖШӨҒЗИ" ЖШС ғалымдарының ғылыми жетекшілігімен құрылған симментал тұқымының "Ертіс" қызыл-ала түрінің малдарымен селекциялық-асыл тұқымдық жұмыстары жүргізілгендігі жайлы сипаттама берілген.

Алдыға қойылған мақсат болып, симментал тұқымының жаңа "Ертіс" қызыл-ала сүтті мал түрлерін сынақтан өткізгеннен кейінгі кезеңде мақсатты селекциялық-асылтұқымдық жұмысының нәтижелерін қорытындылау, сондай-ақ олардың өнімділігінің қазіргі жай-күйі есептелді, мысал ретінде "Киров" ЖШС мал табыны алынған.

Негізгі селекциялық белгілердің орташа өнімділік көрсеткіштері ескерілді, атап айтқанда, 305 күн ішіндегі сауым, май мен ақуыз пайызы, тірі салмағы, сондай-ақ өнімді пайдаланудың орташа ұзақтығы. Мұнда май мен ақуыз пайызы сүт сапасының интеграцияланған жүйесінің (Milkoscan FT+, Fossomatic FT+) анализаторларында қазіргі заманғы аспаптармен анықталған және жалпы қабылданған әдістемелер бойынша деректерді статистикалық өңдеу жүргізілді.

Нәтижесінде 2009 жылдан 2016 жылға дейінгі кезеңде сиырлардың өнімділігі айтарлықтай жоғарылап, сиырдың орташа сауымы 305 күнге табын бойынша 2089 кг немесе 54,4% (3829 ± 42,3-тен 5928 ± 27,8-ге дейін) өсті.

Соңғы аяқталған лактация бойынша сиырға орташа сауым 305 күн ішінде бірінші лактация бойынша 5040,1 ± 65,16 кг сүтті (N=108), екіншісінен 5814,1 ± 49,66 кг (N=385), үшінші және одан жоғары лактация бойынша 6269,7 ± 37,76 кг (N=410) құрады.

Сиырларды өнімді пайдаланудың орташа ұзақтығы 2,8 лактация (lim 1-9) құрады, оның ішінде 3-і және одан жоғары лактация 45,4%.

Осылайша, "Киров" ЖШС табындағы симментал тұқымының "Ертіс" қызыл-ала түрі асыл тұқымды малдарының өнімділік сапасын жетілдіру бойынша мақсатты селекциялық-асылтұқымдық жұмысы тиімді және де оны одан әрі өсіру мен оны селекциялық сақтау үшін қолайлы.

Түйін сөздер: тұқым, тұқым ішіндегі түр, сиыр, сүттілік, лактация, генофонд, өнімді ұзақ өмір сүру, селекция.

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РЕЗУЛЬТАТЫ ЦЕЛЕНАПРАВЛЕННОЙ СЕЛЕКЦИОННО-ПЛЕМЕННОЙ РАБОТЫ КРАСНО-ПЕСТРОГО ТИПА МОЛОЧНОГО СКОТА СИММЕНТАЛЬСКОЙ ПОРОДЫ

Аннотация. В статье дана характеристика селекционно-племенной работы с красно-пестрым типом скота «Ертіс» симментальской породы созданного под научным руководством ученых ТОО «КазНИИЖ и К», на основе совершенствования симментальской породы крупного рогатого скота в направлении повышения молочной продуктивности с использованием генофонда импортных быков-производителей.

Целью явилось обобщение результатов целенаправленной селекционно-племенной работы за период после апробации животных нового красно-пестрого молочного типа скота «Ертіс» симментальской породы на примере стада ТОО «Кирова», а также современное состояние их продуктивности.

Были учтены средние показатели продуктивности основных селекционных признаков, такие как, удой за 305 дней лактации, процент жира и белка, живая масса, а также их средняя продолжительность продуктивного использования. Где, процент жира и белка определяли современными приборами на анализаторах интегрированной системы качества молока (Milkoscan FT+, Fossomatic FT+) и проведена статистическая обработка данных по общепринятым методикам.

В результате за период с 2009 по 2016 гг. достигнуто значительное повышение продуктивности коров, средний удой коровы на 305 дней в лактации по стаду повысился на 2089 кг или 54,4% (с 3829 ± 42,3 по 5928 ± 27,8).

По последней завершенной лактации, средний удой на корову за 305 дней составил по первой лактации 5040,1 ± 65,16 кг молока (n=108), по второй 5814,1 ± 49,66 кг (n=385), по третьей и старше лактации 6269,7 ± 37,76 кг (n=410).

Средняя продолжительность продуктивного использования коров составила 2,8 лактации (lim 1-9), из них 3-й и старше лактации 45,4%.

Таким образом, целенаправленная селекционно-племенная работа по совершенствованию продуктивных качеств красно-пестрого типа скота «Ертіс» симментальской породы стада ТОО «Кирова» вполне выгодны и приемлемы для дальнейшего его разведения и ее селекционного сохранения.

Ключевые слова: порода, внутрипородный тип, корова, молочность, лактация, генофонд, продуктивное долголетие, селекция.

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PENETRATION TESTING

Abstract. Detection of vulnerabilities is an important composite component of both internal and external audit of information security systems. Potential internal vulnerabilities can be revealed by testing for penetration. At the same time, both the commercial and being in the free access instruments of penetration test are used differently. The review of recognized methodologies (standards) of conducting testing for penetration is made. The list of free distribution kits of instruments of penetration test is provided. One of the widespread attacks is BackDoor allowing to receive control over the attacked system. With the help of the utility of Msfvenom which is a part of a free distribution kit of penetration test Kali Linux with methodology of PTES the attack of BackDoor by implementation of an exploit is successfully realized. Control over the attacked virtual machine was as a result received.

Keywords: vulnerabilities, penetration testing methodology, BackDoor attacks.

Introduction. Now there was the standard international practice of support of the mode of the information security (IS), one of the stages of which is audit of the IS systems. Existence of management system of IS (Information Security Management), and in particular audit of management system of IS (Risk Management), is an indispensable condition of the organization of the IS mode at the enterprise.

IS audit is carried out by a team of security experts of enterprise systems and experts in the field of management. One of the methods in case of the active audit of information security systems is testing for penetration. Testing for penetration - the valuation method of safety of computer systems or networks simulars of the attack of the malefactor (ethic hacking - ethical hacking). Testing for penetration is an integral part of the analysis of security of any information resource. The authorized search of vulnerabilities of protection system is execute and their subsequent use for penetration into subject to protection. The purpose of penetration test is independent assessment and the expert opinion on a status of security of the critical information. The recommendations about closing (elimination) of the found vulnerabilities are whenever possible formulated. As a result, security concerns which need to be solved urgently come to light. There is a certification of CHE (Certified Ethical Hacker) for experts in the field of conducting testing for penetration which is recognized around the world today and confirms existence of appropriate level of knowledge. The certified examination of EC-Council CEH approved by the U.S. Department of Defense is one of recognized for experts of IT safety. State structures of the USA require existence of this certificate for certain positions of IS that once again emphasizes importance of penetration test as instrument of the active audit.

Methods. There are several recognized techniques (standards) of conducting penetration test: Payment Card Industry Data Security Standard – PCI DSS (Penetration Test Guidance, methodology of Special Interest Group PCI Security Standards Council), OSSTMM (Open Source Security Testing Methodology Manual), NIST Special Publications 800-115 Technical Guide to Information Security Testing and Assessment (NIST methodology, CSRC subdividing), Study A Penetration Testing Model (BSI methodology, the German subdividing of Federal Office for Information Security), ISSAF (Information System Security Assessment Framework, methodology of Open Information Systems Security

Group), OWASP Testing Guide (methodology of Open Web Application Security Project), PTES Technical Guidelines (Penetration Testing Execution Standard), methodology of Deloitte [1-8].

The offered methodologies differ on steps of conducting testing, types of testing for penetration, detailing of testing objects, determination of testing procedures, the description of utilities for conducting testing, a formulating, structure, a detail of description of a technique and purposes of penetration testing.

PCI DSS is oriented on a penetration testing for the organizations which processing, storing and transferring data of card owners. OSSTMM is one of the first techniques of complex testing of information security of the organization. In methodology of NIST different recommendations about testing types are described, there is in the separate document an operation methodology with a fire-wall (NIST SP 800-41 Guideline on Firewalls and Firewall Policy). The detailed methodology of BSI provides both technical and organizational aspects of testing, and legal aspects. ISSAF describes assessment of safety of fire-walls, routers, anti-virus systems and many other things. Methodologies of PTES and OWASP are well structured therefore they are widely used when testing for penetration. PTES is model which was used in the system of a penetration testing Rapid7 Metasploit.

Tools. Penetration test is subdivided on external and internal. External infrastructure penetration test is an analysis of perimeter from the Internet. The expert makes attempts, trying to compromise available network services and to develop the attack which main goal is to get in system. Internal infrastructure penetration test is a simulation of action of the insider. As the insider the infected node in a network can appear.

In turn external penetration test is conditionally divided into categories: network scanners, scanners in web scripts, exploits, automation of injections, debugger. There are both separate programs, and distribution kits (commercial and free) for conducting testing for penetration.

Usually distribution kits represent the processed versions existing Linux distribution kits.

The most known of them which are in the free access [9]:

- BlackArch Linux, a distribution kit is based on Arch Linux. Includes 1359 utilities for testing for penetration, it is intended for professionals, maintains architecture of i686 and x86_64;
- Parrot Security OS, is based on Debian Linux, the easy and effective testing tool on penetration, idle time in mastering;
- BackBox, is based on Ubuntu Linux, is convenient for private use, and has rather good functionality for daily use;
- Pentoo, is based on Gentoo Linux, contains a set of security-utilities;
- Network Security Toolkit, is based on Fedora Linux, intended for the analysis of safety of a network, gives simple access to a wide set of the opened network applications, many of which are included in one hundred the best security aids recommended by the website insecure.org;
- DEFT Linux, is founded on Lubuntu, has the convenient graphic interface, includes antiviruses, the systems of information search in a browser cache, network scanners and utilities for detection of rootkits, tools for search of the hidden data on a disk;
- Samurai Web Security Framework is intended for testing for penetration of different web applications. It is delivered in the form of an image of the virtual machine which contains the most popular Open Source of the utility for information collection and carrying out different attacks to web applications;
- Santoku Linux, is based on Ubuntu Linux. It is intended for the analysis of mobile devices and applications: carrying out the analysis of safety, extraction of data, the reverse engineering, forensic, also contains development tools. It is provided only for the X64 platform;
- WifiSlax, is based on Slackware Linux, intended for check of safety of the WiFi networks systems and carrying out the criminalist analysis. It is used for audit of Wi-Fi of networks as the majority of popular utilities for the analysis of security of wireless networks are included in it, maintains the majority creates network interface cards;
- Kali Linux, is based on Debian Linux, includes more than 600 security-utilities (Wireshark, Nmap, Armitage, Aircrack, Burp Suite, etc.) and multilingual support. There are several types of this distribution kit for different platforms: x86 and ARM systems, systems of virtualization, mobile platforms (Kali Net hunter).

Results. Kali Linux – the most popular and advanced distribution kit for conducting testing for penetration and security audit today [10]. The special kernel of Kali Linux is protected from injections that allows to book audit of wireless networks safely. Kali Linux maintains a large number of wireless devices, is compatible to USB and other wireless devices.

In [11] risks and threats of virtualization and results of detection of vulnerabilities of the virtual machines by port scanning by means of the utility of Wireshark from the Kali Linux distribution kit were presented.

Also the utility of Msfvenom is a Kali Linux part by means of which it is possible to realize the attack of BackDoor, having created an exploit. Successfully realized attack of BackDoor allows to implement on the attacked computer the small program through which it is possible to collect confidential data, to control far off an operating system and the computer in general, to use the cracked computer for scanning of a network, carrying out network attacks of network hacking. Usually in case of this attack two programs are used. The program of control is installed on the computer of the tester and controls other program which is illegally set on the attacked computer.

The exploit uses vulnerabilities of the attacked system to violation of its safety. There is an open database of exploits (The Exploit Database) and the appropriate vulnerable software. The basis is created and supported for testers on penetration and researchers of vulnerabilities. There are also closed databases in which the most interesting exploits are collected. Access to them can be or paid, or for a certain circle of people. To one of examples can serve the tool for testing for penetration – Metasploit Exploitation Framework. It contains a big basis of exploits. There are two Metasploit versions, free and paid. There are websites on search of exploits, such as The Exploit Database, WPScan Vulnerability Database (a fresh basis of exploits for WordPress) and Packet Storm (the most different fresh exploits).

With the help of the utility of Msfvenom which is a part of a free distribution kit of penetration test Kali Linux with methodology of PTES the attack of BackDoor was organized. As attacked the virtual machine was used. With the help of Msfvenom the special program - an exploit (exploit) with the .exe format is created. Implementation of this program in the attacked computer, gives to the malefactor access to the virtual machine and means of the user.

During creation of an exploit it is necessary to specify the IP address of the attacking machine, the port and the place of saving the file of an exploit in the attacking machine. To learn the IP address, it is possible to use the ifconfig command. This command will issue information on a configuration of the attacking machine, including the IP address - 192.168.209.138 (figure 1).

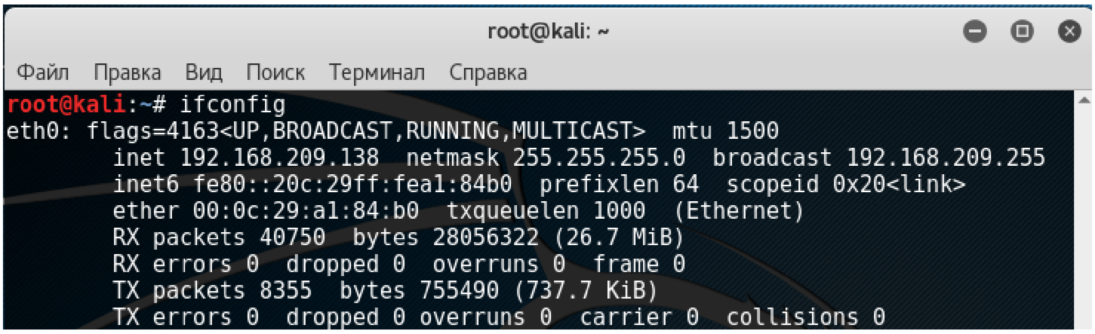

Figure 1 – Configuration of hacking machine

We use data retrieved during creation of an exploit: we specify the IP address of the attacking machine (192.168.209.138), the port (5566), the place of saving and file name of an exploit (attack.exe). The exploit is created on the x86 platform, file size 73802 bytes (figure 2).

After creation of an exploit we will send it to the virtual machine Windows 7 via the Internet. For example, through e-mail, explaining attacked that it is the useful program.

Further on the attacking machine we will launch metasploit framework (figure 3).

Then we register the IP address of the attacking machine and on what port there will be a connection with the implemented exploit (figure 4).

Attacked launches an exploit by the machine, thinking that it is the useful program.

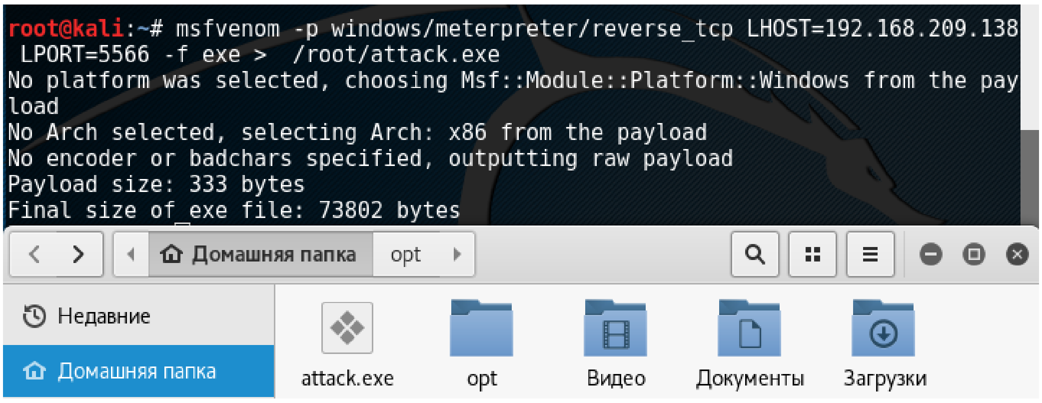

Figure 2 – Creation of exploit

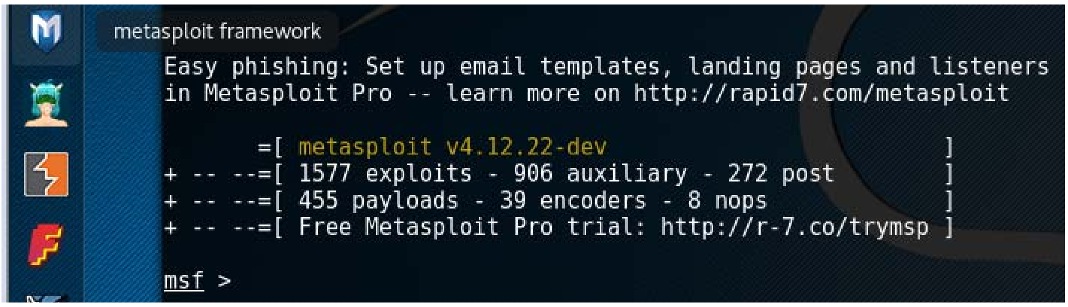

Figure 3 – Start of metasploit framework

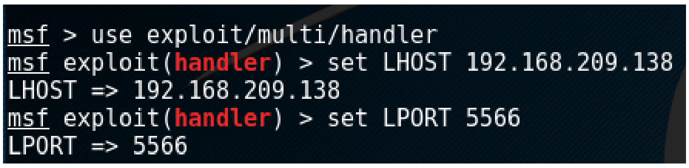

Figure 4 – Configuration of linking with exploit

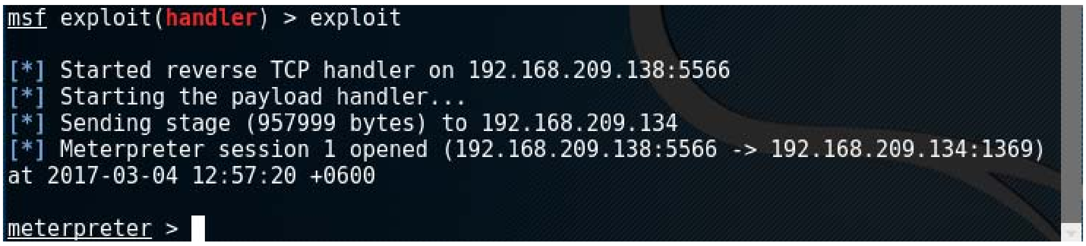

Figure 5 – Link with exploit

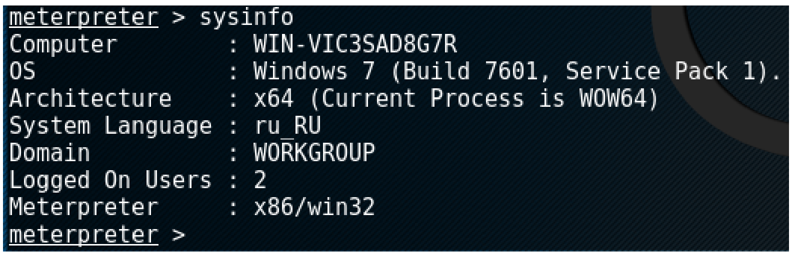

Figure 6 – Messages from exploit

By this time by the attacking machine it is necessary to open a session of connection with an exploit (figure 5).

Now the virtual machine under monitoring of the attacking machine (figure 6).

Conclusion. Innovation, organization, and sophistication - these are the tools of cyber attackers as they work harder and more efficiently to uncover new vulnerabilities [12]. With the help of testing for penetration it is possible to be ahead of malefactors, having revealed and having eliminated vulnerabilities before real cyber-attack. Now penetration test is a mandatory component of both internal and external audit. Free products of penetration testing are easy to use. They allow identifying vulnerabilities on the channel, network and transport levels, having built-in expert systems. When solving problems at the application level, these products unusable. In this case necessary to use commercial solutions (commercial versions Nessus and Rapid 7 NeXpose, Xspider 7, Retina Nenwork Security Scanner, SAINT and etc.) [13-16]. Commercial products of the penetration testing use more advanced technologies and have extended capabilities compared to free ones. This provides additional opportunities in assessing risks and threats. Penetration testing should be performed on both the channel, network and transport layers, and at the application level.

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ЕНУГЕ ТЕСТІЛЕУ

Аннотация. Осалдықтарды анықтау – ақпараттық қауіпсіздік жүйелерінің ішкі және сыртқы аудитінің маңызды құрамдас бөлігі болып табылады. Әлеуетті ішкі осалдықтарды енуге тестілеу арқылы анықтауға болады (pentest). Бұл ретте, әртүрлі коммерциялық, сондай-ақ пентесттің еркін қол жетімді құралдары пайдаланылады. Енуге тестілеу жүргізудің танылған әдістемелеріне (стандарттарына) шолу жүргізілді. Пентест құралдарының тегін дистрибутивтерінің тізімі келтірілген. Кең тараған шабуылдардың бірі – шабуылға ұшыраған жүйені бақылауға мүмкіндік беретін BackDoor шабуылы. Пентесттің тегін дистрибутиві Kali Linux құрамына кіретін Msfvenom утилитасының көмегімен PTES әдісітемесі бойынша эксплоитты енгізу арқылы BackDoor шабуылы іске асырады. Нәтижесінде, шабуылданған виртуалды машина бақылауға алынды.

Түйін сөздер: осалдықтар, енуге тестілеу әдістемелері, BackDoor шабуылдары.

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ТЕСТИРОВАНИЕ НА ПРОНИКНОВЕНИЕ

Аннотация. Выявление уязвимостей является важной составной компонентой как внутреннего, так и внешнего аудита систем информационной безопасности. Потенциальные внутренние уязвимости могут быть выявлены тестированием на проникновение (пентест). При этом используются различные как коммерческие, так и находящиеся в свободном доступе инструменты пентеста. Сделан обзор признанных методологий (стандартов) проведения тестирования на проникновение. Приводится перечень бесплатных дистрибутивов инструментов пентеста. Одной из распространенных атак является атака BackDoor, позволяющая получить контроль над атакуемой системой. С помошью утилиты Msfvenom, входящей в состав бесплатного дистрибутива пентеста Kali Linux, по методологии PTES реализована атака BackDoor путем внедрения эксплоита. В результате был получен контроль над атакуемой виртуальной машиной.

Ключевые слова: уязвимости, методологии тестирования на проникновение, атаки BackDoor.

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TRANSFORMATION OF INFORMATION INTO KNOWLEDGE AT SOLVING THE MANAGEMENT TASKS

Abstract. The article considers the problems of people engaged in intellectual activity related to information overload. In the modern world, the amount of information with which managers, analysts and experts work is constantly growing. At that, the information required for daily work in the decision-making process is approximately constant in terms of volume. Due to which there is a problem of qualitative selection, filtering the flow of information with the transformation of its various forms: records, texts, documents into knowledge. The issue of transformation of information into knowledge is poorly understood in the scientific literature.

The issues of how to arrange your thinking and organize your intellectual activity within the organization are of interest to people involved in management activities. It is important for them that the process of creating new knowledge be manageable and productive. To solve this problem, we offer the technology of the subject's knowledge digitalization with Insight-DNA.

In 2016, Insight-DNA technology with a wide range of applications was registered as a copyright object. In this article, we will disclose one aspect of the application of this technology – the creation of text products in the digitalization of knowledge. We believe that well-organized and structured knowledge is transmitted and perceived in text products.

The emergence of digital knowledge technology in the market and creation of domestic robots – CEO assistants on its basis activates the scientific developments in the artificial intelligence.

Keywords: digitalization of knowledge, knowledge management, intellectual product, corporate knowledge.

The ability to use information resources most effectively is one of the basic requirements for the successful operation of any organization operating in the constantly increasing competition.

The amount of information in the modern world that analysts, experts, and managers must work with is constantly growing. But the amount of information that is necessary for daily work and decision-making is approximately constant. This leads to the loss of logical links between information objects and the brain, which processes 160,000 times more information every day than the human brain had been processing in the 19th century, and more and more produces disruptions in impulsive behavior, depression, chronic fatigue syndrome, etc. [1]

UNESCO noted the emergence of a new "information fatigue syndrome – info-phobia" in 2002, which is experienced, as a rule, by people actively engaged in intellectual and managerial activities [2].

It is difficult to disagree that the activity of any organization is a process-oriented search for the required procedural decisions in the system of distributed information of knowledge, which is related to the moment of transformation of the information flow forms into knowledge made in the form of records, texts, documents. We understand that information turns into knowledge when it is in demand and solves the specific issues. There are many definitions of the concept of "knowledge" in the scientific literature. But within our work, the definition of the Standard of the Republic of Kazakhstan ISO 9001 is well correlated determining the knowledge as the information that is repeatedly used during the activity.

And as the knowledge of the organization is the corporate knowledge, which cannot arise by itself. In today's publications, there are many discussions about the usefulness of corporate knowledge systems [3-11]. But there are no practical works that would show the mechanism of creating a corporate knowledge system itself in companies when creation of such system is needed.

Corporate knowledge is a system that integrates the knowledge of individual players who are constantly involved in the process of forming a corporate base. For example, if there are only consumers who are already using the knowledge formed by someone, then such a corporate knowledge system will no longer be necessary after a certain period.

The issues of how to organize the thinking and how to organize the intellectual activity within the organization are of interest to people involved in management activities. It is important for them that the process of creating new knowledge be manageable and productive.

To solve this problem, we offer the technology of digitalization of the individual's knowledge by Insight-DNA – the technology of transforming thoughts into intelligent products [12].

In 2016, Insight-DNA technology with a wide range of applications was registered as the copyright object. Today we will disclose one aspect of this technology application – creation of text products in the digitalization of knowledge. We believe that well-organized and structured knowledge is transmitted and perceived in text products, i.e. in text forms that allow to perceive, interpret, understand them, facilitating the adoption of managerial decisions [13].

Studying the literature on digitalization of knowledge, we formulated several search queries on international scientific bases and searched for information on a common network. After analyzing the materials received on request, we concluded that the scientific community had not developed this issue enough and began to carry out our own research of the theme [14].

The word "digitalization" itself requires an interpretation. Today, there is an interest in new words, probably contributing to our inclusion in the world community. And the term is used universally and literally without understanding its meaningful palette. We focused on one definition of digitalization, which was published by Alexei Marey, Board of Directors of Alfa Bank: "digitalization is a paradigm shift in how we think, how we act and how we communicate with the external environment and with each other. That is, digitalization is more a tool than a goal" [15].

Let us outline a brief description of the management system for creation of text products (MSCTP) – a pilot version that implements Insight-DNA technology in the process of creating a corporate knowledge base, based on this understanding of digitalization.

The key concept of our development is the "consciousness flow". Today this concept is met in the modern version in the works of E. De Bono when he forms his apparatus [16]. However, De Bono does not consider and does not define the concept of "consciousness flow". After a literary survey, we found a definition in the Great Soviet Encyclopedia proposed by James Wiliams back in 1890. In his scientific work "The Foundation of Psychology", the consciousness flow is a complex river in which thoughts, sensations and emotions and associations are strangely mixed [17]. Now the purpose of our digitalization technology of subject knowledge becomes clear.

The Insight-DNA technology of digitalization of the subject's knowledge is aimed at:

- transformation of spontaneous thoughts, sensations and associations into ideas;
- increasing the survival of ideas;
- fixing the idea in symbolic forms;
- development of ideas in intellectual products (solutions, publications, developments, etc.);
- synthesis of ideas and products disaggregated in time and relevant now.

It is very important that one of the purposes of the system is to guarantee the survival of ideas. On a pragmatic and practical level, we always feel that thoughts somehow spontaneously come to mind and go away, and we remember something. Our technology contributes to the survival of spontaneous ideas that can be formed in the process of orderly and systematic transformation of spontaneous thoughts into ideas.

Also, the technology allows to consolidate ideas in symbolic forms, which are specially prepared and recommended by us as tested in practice. A whole system of notations and rules was developed. Because the consolidation of the ideas themselves in symbolic forms is not carried out once at any time, it is distributed over a sufficiently long period. Personal experience within the Insight-DNA technology since October 10, 2012, showed that in a certain version the idea itself can be formed depending on its depth within a period from one month to several years. Moreover, the process of formation of ideas itself involves the clarification of certain formulations of conceptual things that arise as the subject receives information from outside during reading and in real life all it is all fixed. An important condition for permanent participants of this process is the continuous record keeping. Significant insights, thoughts, important day outputs (the so-called 'out-put') should be registered daily and this is a mandatory requirement for the technology application. Our idea is well illustrated with one of Nikola Tesla's 25 quotes: "If there was some exhausting task in front of me, I would attack it again and again until I made it. So, I practiced day by day, from morning till night. At first it required a strong mental effort directed against inclinations and desires, but for years the contradiction became weak, and finally, my will and desire became the same. So they are today, and this is the secret of all my successes" [18]. And so, the technology allows to develop ideas into intelligent products. This is already a whole set of algorithms, rules of behavior, processing rules that allow connecting and developing this idea, orienting it on current goals, plans and responding to changes.

And finally, the main feature of this technology is that it is aimed at the synthesis of ideas and products disjointed in time and relevant to the current situation.

The five areas listed below still do not exclude some additions that are being worked out, we are studying them now.

The technology includes 4 groups of processes (see figure 1). Moreover, these groups of processes are also the phases of the process of converting spontaneous thoughts into intellectual products.

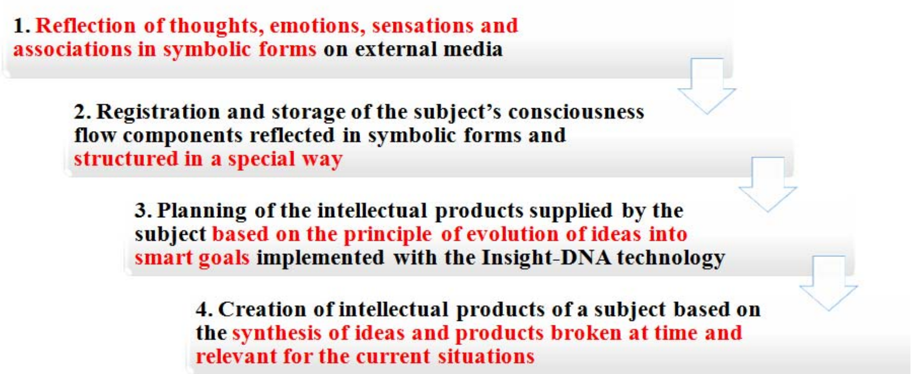

Figure 1 – Insight-DNA technology process groups

Those moments that relate to the new innovative developments were highlighted in red.

It turns out that the presence of the base itself, which has been formed in compliance with the Insight-DNA technology principles leads us to achieve higher goals, namely the SMART goals. It became clear to us only after five years of practical work. We began to understand that this technology cannot help the team or a group of people, if they do not have their own initial reserve. Therefore, our technology provides self-diagnostics, namely the thematic self-diagnostics of components using the tools of the artificial intelligence algorithm and the knowledge base itself, which relates to the database of accumulated records, allows identifying the areas that are the most developed today. The most prepared, in our practice, were the bases for the preparation of publications.

Finally, the last phase is the creation of intellectual products of the subject based on the synthesis of intellectual products broken in time and relevant for the current situation [19]. The main categories of information objects in the Insight-DNA technology introduced in the pilot version in the MSCTP are:

– personal records of the subjects that form the corporate knowledge system;

– text products that are being created as deliverables. The delivered result is any unique and verifiable product, result or the ability to provide the service that must be performed to complete the process, phase or project. The deliverables are usually the material components created to achieve the project objectives, which may include elements of a project management plan [20];

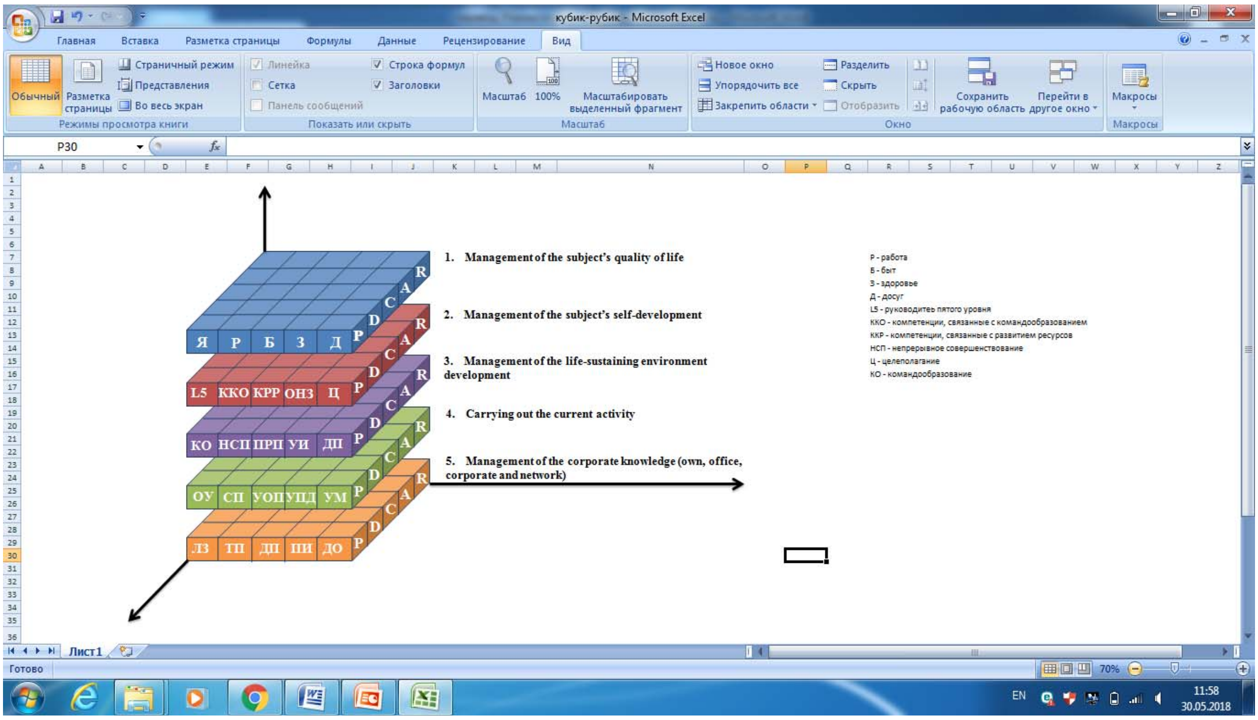

Figure 2 – Model of "CEO-organization" dyad development management

– primary sources;
– documents for configuration management.

An innovative element in Insight-DNA technology is: creation of a "CEO-organization" "dyad development control cube" of the (see figure 2).

The model consists of five levels. We proceed from the fact that management should be comfortable. At present, software applications are widely used to calculate the number of steps that have been taken. But there are no software applications that assess the quality of thinking activity: how much time was spent on work, how much time for leisure, and how long our mind was resting, etc.

The first level was called "Management of the quality of life of the subject". It includes: "Work", "Life", "Health" and "Leisure" (WLHL) strata, S - subject, Deming and Shewhart PDCA cycle: Plan-Do-Check-Act - and repository of lessons learned - R. "WLHL" may be linked with the known four dimensions of human nature that Steven Covey suggests: "body", "mind", "emotion" and "spirit" [21]. The person starts feeling the happiness comfort when he has balanced 4 dimensions of human nature. They are expressed through the WLHL strata. S is a complex sense of own personal dignity, it is formed in comfort on four strata of the WLHL. Each of these strata ends with a repository of lessons learned.

The second is the management of the quality of life, in the unity of the leader-organization-family-society. For this, we introduce the concept of quality and self-development management of the subject as a leader by analogy of the PMI talent triangle with the sides of technical project management, strategic management and business management and leadership.

Among the components of our concept of the side are:

1. Management of own living environment development.
2. Implementation of current activities.
3. Knowledge management: personal, office, network and corporate.

Speaking about the adaptation of technology to the current terms, we note the following features:

– focused on project management;
– adapted to the conditions of Kazakhstan (100% Kazakhstani content);
– contains the developed modern conceptual-categorical apparatus that incorporates the best international practices;

– the main components of the technology and author algorithms that implement them are tested in practice and provide digitalization of the subject's knowledge in managing the organization development (through projects);

– the key users of the pilot version are the head managers, top managers and project managers.

To form a circle of people interested in more details, we need to connect the purpose of this technology with the tasks that arise at high levels of management. With this purpose, let us apply to the Decree of the President "On approval of the strategic plan for the development of Kazakhstan until 2025". It becomes obvious that this technology is not limited to an industry or a single group of interested persons. Practically, it is aimed at implementing the most important reform (one of seven) - it is obtaining the new human capital in the country. Moreover, it is in demand to carry out the modernization of consciousness, the first step of which is "Rukhani zhangyru" [22]. Unfortunately, the program lacks an important component that related to the search for a tool allowing to accelerate and ensure the formation of this new human capital, which will have a higher culture of thinking. The goals of our technology are focused at enhancing the culture of thinking.

The emergence of the knowledge digitalization technology on the market and creation of domestic robots - CEO assistants on its basis activates the scientific developments in artificial intelligence. The development of a universal management tool will have a multiplier effect on all sectors of the country's economy and in the Higher School system.

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БАСҚАРУ МӘСЕЛЕЛЕРІН ШЕШУ КЕЗІНДЕ АҚПАРАТТЫ БІЛІМГЕ АЙНАЛДЫРУ

Аннотация. Мақалада зияткерлік қызметпен айналысатын адамдардың ақпараттық жүктемесіне қатысты мәселелер қарастырылған. Қазіргі таңда ұйым жетекшілері, талдаушы-сарапшылар жұмыс жасайтын ақпарат көлемі қарқынды ұлғаюда. Алайда шешім қабылдау үрдісіндегі күнделікті жұмысқа арналған ақпарат көлемі тұрақты болып қала береді. Осыған сәйкес болашақта білімге айналатын жазбалар, тексттер, құжаттар секілді әртүрлі формалардан тұратын ақпарат ағымын сапалы іріктеу мәселелері туындайды. Ғылыми әдебиеттерде ақпараттың білімге айналу мәселесі аз зерттелген. Өзіндік ойлау жүйесін және өзіндік зияткерлік қызметін дұрыс ұйымдастыру мәселесі басқарушылық қызметпен айналысатын адамдардың қызығушылығын тудырады. Олар үшін жаңа білім қалыптастыру үрдісінің басқарымды және табысты болуы маңызды. Осы мәселені шешу үшін субъект білімін цифрландыратын Insight-DNA технологиясы – ойды зияткерлік өнімдерге айналдыратын технология ұсынып отырмыз. Қолдану саласы кең Insight-DNA технологиясы 2016 жылы авторлық құқық нысаны ретінде тіркелді. Бұл мақалада біз аталған технологияның қолдану аспектілерінің бірі – білімді цифрландыру барысында тексттік өнімдерді әзірлеуді қарастырамыз. Жақсы ұйымдастырылған және құрылымдалған білімдер тексттік өнімдер түрінде, яғни басқару шешімдерін қабылдауға ықпал ете отырып, қабылдауға, түсінуге, түрлендіруге мүмкіндік беретін тексттік формаларда беріледі және қабылданады. Бүгінгі таңда нарықта білімді цифрландыру технологиясының пайда болуы және соның негізінде отандық роботтар – CEO көмекшілерін жасау жасанды интеллект саласындағы ғылыми зерттеулердің белсенді жүргізілуіне ықпал етеді.

Түйін сөздер: білімді цифрландыру, білімді басқару, зияткерлік өнім, корпоративтік білім

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ТРАНСФОРМАЦИЯ ИНФОРМАЦИИ В ЗНАНИЯ ПРИ РЕШЕНИИ ЗАДАЧ УПРАВЛЕНИЯ

Аннотация. В статье рассматриваются проблемы людей, занимающихся интеллектуальной деятельностью, связанные с информационной перегрузкой. В современном мире количество информации, с которой работают руководители, аналитики-эксперты постоянно растет. При этом информация, которая необходима для ежедневной работы в процессе принятие решений, приблизительно остается постоянной по объему. В связи, с чем возникает проблема качественного отбора, фильтрации потока информации с превращением его разнообразных форм: записей, текстов, документов в знания. Вопрос трансформации информации в знания слабо изучен в научной литературе. Вопросы как организовать свое мышление и как организовать свою интеллектуальную деятельность в рамках организации вызывают интерес у людей, занимающихся управленческой деятельностью. Для них важно, чтобы процесс создания нового знания был управляемым и продуктивным. Для того, чтобы решить эту задачу нами предлагается технология цифровизации знаний субъекта Insight-DNA. В 2016 году технология Insight-DNA с широким спектром применения была зарегистрирована как объект авторского права. В данной статья мы раскроем один аспект применения этой технологии – создание текстовых продуктов в рамках цифровизации знаний. Мы считаем, что знания, хорошо организованные и структурированные передаются и воспринимаются в текстовых продуктах. Появление на рынке технологии цифровизации знаний и создание на ее основе отечественных роботов – помощников CEO активизирует научные разработки в сфере искусственного интеллекта.

Ключевые слова: цифровизация знаний, управление знаниями, интеллектуальный продукт, корпоративное знание

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RETIREMENT PREPAREDNESS AMONGST WORKING ADULTS IN KAZAKHSTAN

Abstract. Today, the topic related to the retirement planning and the future of a person at retirement age is relevant, because the aging of the nation is going on all over the world. All countries of the world are engaged in the study of this topic. However, for Kazakhstan, this topic is still not sufficiently developed, and there is a great potential for research and improvement. In Kazakhstan, the number of elderly people is also increasing, and retirement planning is important. This study aims to determine how the citizens of Kazakhstan plan for their retirement; their long-term care and what level of financial literacy they have in relation to pension accrual. In addition, it was clarified on what factors the final decision of people regarding retirement planning. The study was conducted in the form of interviews with 10 respondents. Each of them shared their opinion, experience and perspective on their financial matter in responding to retirement planning.

Keywords: retirement preparedness, Kazakhstan, working adults, financial literacy.

Introduction. Over the past fifty years, retirement planning is the main personal and social problem in the world. To ensure adequacy in the planning of a retirement, a profound and critical reflection is needed in the future means that they have in the household [1]. The Republic of Kazakhstan gained its independence in 1991 after the collapse of the Soviet Union. In 1998, the pension reform was implemented, replacing the PAYG system of the former Soviet Union, which was aimed to address the deteriorating government budget and creating an independent and self-financing pension system. The accumulative pension system after this reform began to develop before the crisis, which was in 2008. After the crisis, pension system performance deteriorated significantly, which raised questions about the ability of pension funds to provide adequate benefits in the future. Therefore, in 2013, a new version of the pension law was signed, which consists of two parts: 1) increasing the retirement age of women from 58 to 63 years; and 2) creating the SiAF (single accumulated pension fund) the only legitimate fund to collect mandatory pension contributions. The only legitimate fund for collecting mandatory pension contributions is the SiAF. The only shareholder of SiAF is the government, and the National Bank manages the company SiAF. But the National Bank has an option, not an obligation to delegate management of pension assets to the NSAF [2].

The pension system of Kazakhstan is divided into three level, where there is a solidary and funded system. The first level is a solidarity pension accrued to persons who worked before 1998 not less than six months. The basic pension, which increases annually and, as of 2018, is 15,274 tenge (National currency of Kazakhstan). All pensioners receive basic pension payments, regardless of deductions and length of service. Since July 1, 2018, a new concept of the appointment of a basic pension, not fixed by a certain indicator and depending on the length of service and the amount of the subsistence minimum (PM), has been introduced. Second level compulsory accumulative pension system with a fixed 10% pension tax. Third level accumulative system based upon voluntary occupational pension contributions. A complete transition to accumulative scheme will be completed by 2040. Present and future Kazakhstan pensioners are concerned about the effectiveness of the Single Accumulated pension Fund (SiAF) pension system which leads to new risks. Planning for retirement in Kazakhstan is poorly organized. Most of the elderly depend on the pension, as well as on the income of their children. This allows thinking about the pension fund even more to ensure future [2].

In Kazakhstan, men can retire at the age of 63, for women - 58 years. From 2018 on the basis of the legislation of the Kazakhstan, the retirement age for women will increase every year for 6 months. Such an increase will occur until 2027 upon reaching the threshold of 63 years. Raising the retirement age to 63, which is related to life expectancy and about 70% is made up of women's [3]. Although the article by G. A. Taspenova concluded that "In the country, the average duration of life has reached 69 years" [4, p. 100]. In 2017, the proportion of the population in Kazakhstan at the age of 65 years and over is 7.65%, which is 1418 million people [5]. In Kazakhstan, the nation is aging, so it will lead to the problem of the social life of older people who will receive inadequate income in the future.

Another problem in financial literacy. In article T. K. Bekzhanova says that "Kazakhstan has adopted a state program for the development of education for 2011-2020, where it is written that investment in human capital is essential for creating a technically progressive, productive workforce that can adapt in a rapidly changing world" [6, p. 127]. But at the same time, Botagoz Zhumanova, a financial analyst of Kazakhstan noted that "If take a ten-point scale, the overall level of financial literacy in Kazakhstan is at the third level". The bulk of the population has no understanding of many financial concepts. In general, people with an income above the average are financially literate. They know how and where to invest, control expenses, increase incomes and orientate themselves in services. But there are not so many [7].

In addition, Due to the rapidly aging population in Kazakhstan, there may be a problem with the high level of medical care requirements. The elderly will have a high demand for outpatient, inpatient, and chronic care. Another problem is long-term care for very old people. This care will be costly, as it will have great opportunity costs. For example, if young people spend time caring for the elderly, instead of working. Thus, the expenses for medical care and health care will increase as the population grows.

Research questions and significance of study. According to the above purpose statements, the study is seeks to explore the following research questions:

1. How the citizens of Kazakhstan plan their retirement planning?
2. At what level of financial literacy regarding retirement planning are residents of the Republic of Kazakhstan?
3. How the employees of the Republic of Kazakhstan plan their long-term care after the retirement age?

This study will examine the current situation of people's retirement planning in Kazakhstan and add knowledge future retirement planning. The purpose of this study is to help those younger generations, to plan their retirement goals when these people are employed at work, and to prevent social and economic burdens in Kazakhstan. An important factor for people themselves is their recognition of the need for income during the retirement age. They thus can save or postpone a certain amount before the retirement.

Methodology. In this study, the theory will be developed using the inductive approach. The study will be qualitative with a phenomenological strategy. In the research, the philosophy of interpretivism was taken. To collect the data, semi-structured individual in-depth interviews with the size of ten target samples will be applied. Answers to the interview will be received from various organizations, where adults aged 35 to 63 years old work. The interview will be conducted with the help of Skype and WhatsApp application.

RESEARCH RESULTS.

Descriptive Statistics. The interview was taken from 10 working citizens of Kazakhstan randomly. Of the respondents, 70% of women and 30% of men. All respondents have higher education. And 9 out of 10 respondents have children.

Knowledge of the Pension System. The results of this research, it was clarified that people living in Kazakhstan are partially know of the pension system of Kazakhstan. One of them explained that "*We give 10% of the salary for a special fund…After retirement, the pension fund gives us this money every month… There are 2 types of accumulation of pensions… Men retire at 63, and women at 58. But the government said that there will be an increase in the age of women probably up to 63. But this has not yet been confirmed… The reason is that of the shortage of human capital and the fact that there are many women in Kazakhstan… I do not have extra money. Now I'm paying for studying to my oldest daughter, who will finish study this summer… Even if I do not pay my daughter's studies, my salary is small enough to save a good amount. Because of the salary, there is no possibility to save*".

The majority know that 10% of the salary is accrued on a mandatory basis every month, and after the retirement age, the pensioners will receive the accumulated money every month. All the respondents understand that the current salary will not provide them with a good pension, but they will be saved money in other kinds of retirement savings. For this people do not have enough extra money. All the expenses they spend on utilities, food, schooling children and other small expenses. People with an average monthly salary live from wages to wages, which is simply not enough to spend extra money. Many people who worked until 1998, do not know that they can receive a solidarity pension from the state. Also, all the respondents did not know how many types of pension system exist. Most respondents suggested that there is only one, which accumulates 10% of wages. After explaining respondents to all types of pension systems, some told that they had heard about such types, but they never checked the information, but most knew that the information could be obtained on the SiAF website. All the respondents knew that the retirement age for men is 63 years, and for women 58 years, but they also added that the retirement age of women will increase to 63 years, but no one was aware that this law came into force. In addition, some even knew in detail that the increase in the retirement age of women will be every year for 6 months. The respondents answered that the reason for this increase was the first working capacity of people of Kazakhstan and the lack of human capital, secondly, the life expectancy, the third number of women more than men, the fourth because of the small pension, many want to work additionally and earn money after retirement and the fifth reason is the increase in the country's economy.

Future Retirement Planning. Some of the respondents to the question of what they will do at retirement age have answered that they want to travel, but they also realized that such an opportunity would be if the children help them or they can do something that will bring them additional income in the pension age. All the respondents understand that the accumulated pension will suffice for food, utilities, as well as for the medicine, although some have also added that if the illnesses are serious, then the pension will not even suffice for the medicine. They explained the shortage of pensions by the fact that the very sum of the pension will be small. The reason is that they are currently receiving an average wage. Considering that only 10% of the salary is deducted every month this is very little for the future. Therefore, some respondents hope for the help of their children at retirement age, but there are also those who rely on themselves and children. Also, some of the respondents answered that they will work even in retirement age. One of the respondents said that "*My pension will be low, so after retirement age, I will work for private or foreign companies. Because I cannot live on a pension. But if I cannot continue working and if I will have enough money, then I would open a business myself. I also have a daughter, but I take refuge in myself. Maybe she will help me too… If there were extra money, I would buy real estate and then rent it out*". Many after explaining retirement planning thought it over and answered that if they had the opportunity and the extra money now, they would have first bought real estate, then put in a deposit and opened a business. Only one respondent said that she was already insuring her life for the future.

Financial Literacy. Considering table can see that first compound interest question received 80% of the correct answer, but when compared with the second compound interest, only 30% answered correctly, and 70% answered incorrectly. The difference between the two questions was the interest rate, wherein the first it was 2%, and in the second 20%. Hence it can be concluded that with large amounts of respondents could not cope. The question of inflation has a higher correct answer, in which 80% answered correctly that they will be able to buy less in a year if the interest rate is 1%, and inflation is 2%. Also, 60% of respondents correctly understand that buying two shares of different companies is better than buying one share of one company. In the time value of money, 90% answered correctly, saying that after 3 years, a devaluation may occur, the prices for food and other services will change, so the one who will receive in the present time is rich. Money Illusion 80% had the right answers, which meant that if wages doubled, but also doubled the price of goods, then if do not change the shopping cart, then with a new salary can buy the same thing which bought before that. In addition, a question was asked as they relate to the pyramids, online casinos, and slot machines, whether they consider them a financial tool. The answer was negative. None of the respondents would like to contact this. Everyone believes that all this is reckless, illegal, charlatans and time wasted. Of course, many know that if a person is lucky, then this is fast money, but the respondents would not risk using them.

Financial literacy

	Responses			
	Correct	Incorrect	DK	Refuse
First compound Interest	80%	0	20%	0
Inflation	80%	20%	0	0
Stock Risk	60%	40%	0	0
Second compound Interest	30%	70%	0	0
Time Value of Money	90%	10%	0	0
Money Illusion	80%	20%	0	0

Lack of trust. When conducting the interview, it was clarified that lack of trust plays an important role in decision-making. As quoted by the respondent "*I myself will not voluntarily contribute, I'd rather keep this money in banks abroad. Because it does not trust that in the future we will be able to get our accumulated pensions or not. Such cases were in Kazakhstan, that the accumulated money we will say so simply disappeared*". If consider the public sector, then all respondents refused to voluntarily accrue additional interest on a future pension. The first reason was that people do not have extra money because of their wages and the second is distrust towards the state. The reason for this is the changing rules for which the citizens of Kazakhstan cannot keep track of. The respondents are not even sure that they will be able to receive the accumulative pension at the retirement age. This factor was affected by the fact that the money from the investment in "Coupons" was not returned to anyone in the past [8]. They are afraid that the state can change all rules relating to retirement to their retirement age or not give them money. Also, due to the devaluation, the respondents do not want to accumulate further, because in the future this money will lose its value. Many preferred to take a deposit in a short time, but in the long term categorically refused. Open the business of the respondents preferred on the accumulated money or on the money they put on the deposit in the short term. Respondents believe that doing business in Kazakhstan is very difficult and there is a high probability of bankrupt. They also noted that not everyone can do business, what it is necessary to be able to do. If the business will prosper, then this is a good option for retirement age, then it is not necessary to depend on pension accumulation, but if the business does not give us good money, then will have to hope for a pension. But they did not want to take out a loan to open a business, because business itself is a risky option. If the business is not successful and, moreover, the interest rate is high, it will be difficult to close the loan accordingly. This fear does not allow residents of Kazakhstan to take out a loan to open a business. To take a loan, some agreed only in the case of buying a property or a car. The reasons for the refusal are unworkable state system, the credit rate is high, the wage is low and the opportunity to lose work for the respondents was easy. This shows that in order to take out a loan, a person must be sure of the opportunity to work before the loan is closed, in which all 10 respondents were not sure.

In addition, because of the devaluation of the tenge, it was depreciated that it also struck the population of Kazakhstan [9]. Thus, the deposit is also unreliable, except that it is to keep money in three currencies. The respondent had this to say "*money now does not have value. Even the interest rate in the long term will lose its value. The deposit can be taken in the short term. Because if there is a devaluation, the probability of covering losses will be small. The best option is to keep money in different currencies. If there are losses in one currency, then there is the possibility of at least recovering losses from another currency*". In the current state, one can see that several banks have already unified in Kazakhstan, this also causes distrust in the people of the country and they would prefer to keep money in banks abroad or invest extra money in real estate. Respondents believe investment in real estate is the best option. Because there will be no risk of loss of real estate and loss of real estate value. In the future, have opportunity can rent real estate and live on the money received.

There is also no trust in the private sector in Kazakhstan. According to respondents "*Now a lot of people are opening insurance companies, but this is not a guarantee that they will exist until my retirement. Is that one or two will work. But not all insurance company. Therefore, this is a very big risk. But if the system is like in Germany, then I would be insured*", could say that they would not mind paying their money to insurance companies, as they do in Germany. But they cannot do this because of the lack of extra money. Some responded that even if there were extra money, they would not even deduct to insurance companies. Respondents do not believe that private companies in retirement age will give them their saving money. During this long period, everything may change, private companies may become bankrupt. They came to this conclusion because now many private insurance companies are opening all over Kazakhstan, and some are already going bankrupt and this says that in the future the possibility that private companies will become bankrupt is great. There is no established system in Kazakhstan like in Europe, hence, there is no trust in the private sectors in Kazakhstan itself.

And a big factor of distrust is fear. Fear of losing everything that has accumulated. Fear of taking a loan and not closing it. Fear of a sharp devaluation. Fear of the fact that banks and private companies will go bankrupt. Therefore, the best option for all was the purchase of real estate, which will not lose its value in the future. In addition, in retirement age, people can sell or rent it and receive additional money. Many of the respondents answered that if there is stability in the country and everyone will know what awaits them in the future, both from the state and from the private sector, then all people would start already in the present to plan their retirement.

Long-term care. For residents of Kazakhstan, who receive an average salary, it will be difficult to live in retirement age. All respondents did not know the exact concept of long-term care and first heard this word, but many associated it with caring for people who cannot care for themselves. After a full explanation of long-term care and how important it is, respondents were interested in Investment in long-term care. They had this to say "*We realized that we should start planning now because in retirement age we will live normally. But in our country, this is not possible with a small salary, not everyone gets a good salary… Thus, we simply do not have the opportunity to do something now. All our money is just spent on the necessary things now… We realized that it requires a lot and pension money may not be enough. Because the medicine is expensive and the house for old people is also not cheap*".

In Kazakhstan, children or relatives wake cares for retirees. Each of them understood that if people in retirement age cannot get support from the family, they will often get sick, then they will have to pay all expenses with his accumulated money. Respondents stressed that many pensioners have only enough pension to cover the communal services and daily meals, other types of services simply lack the accumulated money. The respondents also stressed that many are afraid of retirement age, compared to people from Europe. Such a reason is a small pension and the inability to enjoy life after retirement. For all the respondents, it was not possible to go nursing home because they did not want someone to take care of them, they want to be with their families in old age and pension houses are not in a good condition. Of course, there are exceptions, this is when a pensioner has no relatives, no children, then it is better to pay money to a nursing home and live there than live in an apartment and pay utility bills.

Wages play a big role in the planning of long-term care, if the salary of a person is more than the average in Kazakhstan, at the retirement age people will receive a pension, which can be lived normally. But many receive an average salary or lower than the average, it is impossible to accumulate a good pension, and if consider the devaluation, higher prices in the future, then it will be difficult to live with this pension. In this case, of course, one should think about long-term care in advance and start saving at the present time, but this is not possible since all wages are spent on necessary things in the present tense, such as food, utilities, school fees, and etc. Some can accumulate, but only in the short term.

By results, can say that long-term care is important, but also not cheap. All the respondents answered that life insurance is a good idea, but they also added that this is not possible. The reason for saving money for long-term care is that people do not trust insurance companies, as well as a small wage that is spent on the necessary things.

Conclusion. The results of the study, it was clarified that residents of Kazakhstan know in part about the pension system of Kazakhstan and that many have never been interested in it. Most of them knew only one type of pension contribution in the form of an accumulated system, how many percent they accumulate from wages each month and that after the retirement age all residents of Kazakhstan will receive a monthly pension. Workers who worked until 1998 did not even know about the existence of a solidary system and that they can receive it during the retirement age. They knew that the woman's retirement age would be increased to 63 years, but that this law came into effect no one knew. My finding showed that most of the respondents did not have a retirement planning because they understand that the pension will go to necessities, that they will not have extra money in the future. The small pension is due to the fact that they have a small salary. For all respondents have explained the pension system of Kazakhstan, an example is given based on the German pension system and several types of retirement planning that work well in Europe. According to the answers, it was found that citizens of Kazakhstan at retirement age would like to rest abroad, be with grandchildren and live without needing anything. In this many are relying on their children, which confirms the work that is mentioned in the literature [10] and [11]. And those who do not have, are already trying to find a way out, buying real estate and trying to participate in various projects.

It was also clarified that none of them would additionally accumulate money in funds on a voluntary basis because of distrust of the state and lack of money. My finding exactly in line which mentions in the literature [9] about mistrust to the state which arose because of changing the rules about retirement, the sharp devaluation in the country and the situation with the "Coupons". Although the order for the "Coupons" was no longer valid, all respondents were not aware of this. It says that the residents of Kazakhstan themselves were not interested and did not read the decree, and that no measures have been taken from the state to inform the citizens of the state well. To best of my knowledge, this most of the residents did not want to insure their health, knowing that long-term care will be expensive in the future. The reason for this was the lack of extra money and mistrust of private companies.

In the study of financial literacy, it was revealed that most of the respondents know how to calculate certain calculations. Many of them because of mistrust of banks, they themselves calculated the deposit and loans. But none of them have ever counted on how much they will accumulate now on the pension fund and how much they will receive at retirement age. Everyone only understands that it will be difficult to live with the received pension money. Given the devaluation and instability in the country, none of them prefers to take a deposit in the long term. In the case of a loan, the majority refused to take a loan because of high-interest rates and fear that they would not be able to close it later. As for the opening of the business, most were confident that not everyone is born to do business and taking credit for business is a big risk for them. If open a business, it's a good idea to first save money on it. For respondents a good plan is to invest in real estate and in the education of children. Most believe that investing in real estate is one of the profitable plans in Kazakhstan. If buy a real state, it will not lose its price even during the crisis and devaluation. Also, it can be rented by months and days, which will give an additional income. And the real state can be left as an inheritance to children and children can receive benefits from it. In addition, citizens of Kazakhstan prefer to invest in knowledge of children.

Financial literacy among citizens of Kazakhstan at a good level, but as for the retirement planning, it can be concluded that the citizens of Kazakhstan themselves did not see the need for calculating the future accumulated pension. The citizens of the country have a fear of the impossibility of obtaining future pension savings. And fear prevents them from trusting state and private sectors. Low wages do not allow citizens of Kazakhstan to accumulate additional money for the future. All wages go to pay for communal services, food, family expenses and the education of children. Summing up, it can be said that the citizens of Kazakhstan did not engage in planning a retirement and long-term care and will not be engaged yet.

The contributing factors in this study are that residents of Kazakhstan spend their wages on things of prime necessity and that they do not think about the long-term perspective. And, the factor that they do not have an adequate salary. In addition, they would like to have vacation and work extra. If they had extra money, they would have invested it. It was also clear that they have great fear in relation to private sectors like insurance and social opinion.

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ҚАЗАҚСТАНДАҒЫ ЕҢБЕК АТКАРАТЫН ЕРЕСЕКТЕРДІҢ ЗЕЙНЕТКЕРЛІККЕ ШЫҒУҒА ДАЙЫНДЫҒЫ

Аннотация. Бүгінгі таңда зейнетке шығу жасын жоспарлау және зейнеткерліктің болашағы туралы мәселе маңызды болып тұр, өйткені бүкіл әлемде адамзаттың қартаюы жүріп жатыр. Барлық ел осы тақырыпты қарастырған, зерттеген. Дегенмен, Қазақстан үшін бұл тақырып әлі түбегейлі зерттелмеді, осыны зерттеудің дамытудың потенциалы жоғары. Қазақстанда егде жастағы адамдар саны артқан сайын, зейнеткерлікті жоспарлау да маңызды. Бұл зерттеудің мақсаты – Қазақстан азаматтарының қаржылық сауаттылығын, олардың зейнетке шығуды қалай жоспарлау керектігін және олардың ұзақ мерзімді жинақтары туралы білу денгейін анықтау. Сонымен, зейнеткерлікті жоспарлау туралы қандай факторларға сүйендік. Зерттеуге 10 жауап беруші ерікті түрде қатысып, олардан сұхбат алынды. Сұхбаттасушылардың әрқайсысы зейнеткерлікті жоспарлау туралы қаржылық көзқарастарымен, тәжірибесі және өзіндік устанымдары туралы пікірлерімен бөлісті.

Түйін сөздер: зейнеткерлікке дайындық, Қазақстан, еңбек аткаратын ересектер, қаржылық сауаттылық.

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ПЕНСИОННАЯ ГОТОВНОСТЬ СРЕДИ РАБОТАЮЩИХ ВЗРОСЛЫХ В КАЗАХСТАНЕ

Аннотация. На сегодняшний день актуальна тема, связанная с планированием выхода на пенсию и будущим человека в пенсионном возрасте, поскольку старение нации происходит во всем мире. Все страны мира занимаются изучением этой темы. Однако в Казахстане эта тема недостаточна развита, и существует большой потенциал для исследования и совершенствования. В Казахстане увеличивается число пожилых людей, и планирование выхода на пенсию имеет важное значение. Целью этого исследования является определение того, как граждане Казахстана планируют свою пенсию; их долгосрочный уход и уровень финансовой грамотности. Кроме того, выяснить от каких факторов зависит окончательное решение людей относительно пенсионного планирования. Исследование проводилось в форме интервью с 10 респондентами. Каждый из них поделился своим мнением, опытом и перспективой своих финансовых вопросов в ответ на планирование выхода на пенсию.

Ключевые слова: пенсионная готовность, Казахстан, работающие взрослые, финансовая грамотность.

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FAMILY PATTERN AS KEY FACTOR OF PRIMARY SCHOOL CHIDREN ACADEMIC PERFOMANCE

Abstract. Nowadays many families face problems caused by differences in their view of the parental and educational style of upbringing. The progress of the child at school is one of the essential criteria of its assessment. The relationship in the family where emotionally atmosphere is warm, the family where parents are respectful to the identity of the child is defined, recognizing his rights, accepting it as the personality – give the child the chance successfully to develop and be successful in the study. We used specific methods: Varga, Stolin Questionnaire of the parental attitude towards children, Schubert Test "Definition of school motivation," «School test of IQ development" (ShTUR), Phillips Test level of school anxiety. We divided participants (48 students) into two groups (Control and Experimental). According to the results of research EG showed a low level of school motivation of 33,3%, these children attended school reluctantly, preferred to skip classes. At lessons students often were engaged in the different activity. We found significant differences in the results of the IQ test between EG and CG. The problem of influence of the dominating type of the parental relation on the child gained particular relevance today. From a strategy of behavior which parents choose depends on emotional, motivational children development.

Keywords: IQ; Motivation; Students; Parental style; Education.

Introduction. The family is the most important source of social and economic development of society; it makes the most critical public wealth - the person. The most important function of a family is the education of children. The family represents a basic model for the socialization of the child, and parents are the first teachers. They are obliged to lay the foundation of the physical, moral and intellectual development of the child at children's age.

Education in a family is emotional, individual, and specific. Family nurture is focused, constant and includes real opportunities in various fields of activity (household, economic, leisure, public). The wide range of different subsystems (age, gender, professional occupation) is presented in a family; it allows the child step by step join a social life, and also show and realize the emotional and intellectual opportunities. In the many kinds of research (Eydemiller &Yustitskis, 2001) directed on studying of family influence on the mental development of the child were shown that crucial importance had the type of the relations between parents and the child. The position taken by parents, the attitude towards the child in a family in many aspects defines all course of its mental development, abilities which are formed at the child and a trait of personality. The variety of family relationship depends on their traditions, values, culture, and education of parents, etc.

Problem Statement. Many factors influence the success of pupils. Children with poor health or receiving insufficient food, anxious with problems in a family or possessing the underestimated self-assessment, often insufficiently successfully cope with school tasks. The perception of them as the competent pupil can also have a noticeable influence on the success of training. According to Eric Chikweru

Amadi (2018), more than 20% of school students underestimate the real abilities. These children do not expect from themselves much and are surprised if their estimates are high from time to time.

According to David Mac-Clelland (McClelland, 1985), the reasons of higher achievements of one child in comparison with others is in cultural values in which they are brought up. The comparison of several historical periods in some various cultures let Mac-Clelland (1985) make conclusion that the achievement motivation – the aspiration to achieve success and superiority – is the acquired cultural value. In any society, during any period at some national groups, the value of such achievement is much higher, than at the others. Besides, different cultures or subcultures can appreciate different types of achievements. In one society appreciate education level more; give preference in others to achievements in society. Children which parents divide the values differing from accepted at school; often have the weaker motivation to the performance of the academic tasks.

The role of parents in the creation of conditions and stimulation of certain skills development which helping children to succeed is significant. Child will defiantly have some difficulties at school if student comes from abusive or toxic family (criminal pattern); one of his parents has mental health problems; family has poor housing conditions; when he has to live in foster family (Sameroff, Seifer, Baldwin & Baldwin, 1993). If we look at the parents of the children differing in achievements in school, we will find types of parental behavior which can realize practically any the father and mother irrespective of economic conditions.

Researchers know long ago that the following factors relating to parental behavior are connected with the success of children in school (Hess, Holloway, 1984).

1. Parents of successful children have realistic ideas of their current achievements, but thus believe that in the future they will inevitably succeed in the career. Such parents help the child to develop self-confidence, encouraging to the performance of the tasks corresponding to age at school and home.

2. The relations of parents and children differ in warmth and love. The control methods used by parents and maintenance of discipline are characteristic instead for authoritative, than authoritative style of behavior. Children know borders legal, but thus feel safe and know that they are desired and loved.

3. Moreover, probably, the most critical variable: parents of the children advanced at school continuously communicate with them. They read to them books, attentively listen to them and regularly talk to them. Parents maintain the interest of children in knowledge and research and serve as role models. It is necessary to add that explanation parents of the advantage of preparation of lessons, and they are insisting on it are also important factors of success of children at school. In general children, as a rule, well study if parents give them support and help the councils. So, the atmosphere of support is inherent practically in all families of natives of Southeast Asia.

Parents in these families very much highly appreciate education and persistent work and believe that their children will be able to achieve success in any activity if show determination and persistence (Kaplan et al., 1992). In this way, Afro-American parents which children will study at school, also highly appreciate education and encourage the development of self-esteem and belief in the forces and abilities. At the same time, they assume that their child can face at school racial prejudices, and try to prepare him for such situations (to Patterson, Kupersmidt & Vaden, 1990). Poor pupils can be long and to families with an average and high prosperity. Children whose mother and the father pay too much attention to children's entertainments, games or real problems, as a rule, study worse than what parents highly appreciate knowledge and education (Kaplan et al., 1992). In families where children raise with high growth, but not with high self-esteem, attentions to the identity of the child (his interests, tastes, the relations with friends) are combined with sufficient insistence. School progress is the critical criterion of an assessment of the child as persons from adults and contemporaries. The attitude towards itself as to the pupil considerably is defined by family values. The child meets all worry of his parents – maintenance of prestige («And who else did get the five?"), obedience ("Did anyone try to abuse you today?"). In consciousness, parents show more interest not the educational, but household moments in his school life (" Is it warm in a class?", "What did you eat on a breakfast?"). Rather an indifferent question: "What was at school today?" will lead to the corresponding answer sooner or later: "Anything special," "Everything is normal." Parents also set the initial level of claims of the child, on what it applies in educational activity and the relations.

The family – the most widespread type of social group, the leading cell of society in which is born, formed, develops and the most of the time during life is the person. The family relations usually define psychology and behavior of the person; therefore, the family is of particular interest for social and psychological research. The typical modern family in the developed European countries consists of 2 – 6 people: the husband, the wife, children and the nearest relations on maternal and fatherly lines – grandmothers and grandfathers. The fundamental purpose of a family is the satisfaction of public, group and individual requirements. Being a human cell of society, the family satisfies a number of his major requirements, including in the reproduction of the population. At the same time, it satisfies the personal needs of each member, and also all-family (group) requirements. From this also the primary functions of a family follow: reproductive, economic, educational, communicative, organizations of leisure and rest. Between them, there is a close interrelation, interpenetration, and complementarity. In a family, both adults and children are brought up. Especially the importance has its influence on a younger generation. Therefore the educational function of a family has three aspects. The first is formation of the identity of the child, development of its abilities and interests, transfer to children by adult family members (mother, the father, the grandfather, the grandmother, etc.) The second aspect is the systematic educational impact of the family collective on each member during all his life. The success of the performance of this function depends on the educational potential of a family. It represents a complex of the conditions and means defining pedagogical opportunities of a family. This complex unites material and living conditions, number and structure of a family, development of family collective and character of the relations between his members. It includes the ideological and moral, emotional and psychological and labor atmosphere, life experience, education and professional qualities of parents. The personal example of the father and mother, the tradition of a family are of great importance. It is necessary to consider nature of communication in a family and its communication with people around, level of pedagogical culture of adults (first of all mothers and the father), the distribution between them educational duties, the interrelation of a family with school and the public. Individual and essential component are specifics of the family education process. The family plays the leading role in an intellectual child development (the American researcher Blum revealed that distinction in coefficient of intellectual development of the children who grew up in safe and dysfunctional families reaches twenty points), and also influences the relation of children, teenagers and young men to study and in many respects defines its success. At all stages of socialization the educational level of a family, interests of her members affect intellectual development of the person, what layers of culture it acquires, on the aspiration to the continuation of education and self-education. Thus, parents play an essential role in child development and the more so in psychological readiness for school training. If parents accept the child, pay him enough attention, divide its interests, are a positive example for imitation, then the child develops thanks to that entirely it is inadequate conditions for development. If parents do not accept the child, interests, hobbies, thoughts, and feelings of the child seem to the adult frivolous, and he ignores them, the child does not see sense and aspiration to positive actions which could promote more favorable psychological readiness for school training. For the small child, the family is the whole world in which he lives, works, makes discoveries, learns to love, hate, rejoice, sympathize. Being her member, the child enters specific relations with parents which can render on it both positive, and negative influence. Thereof the child grows or benevolent, open, sociable, or disturbing, rough, hypocritical, false.

Nowadays the institute of a family endures the crisis, but, despite it, the family remains the stable, reality is bringing up and promoting disclosure of potential opportunities for children. According to Andreyeva, Gulyga (1991) the crisis phenomena in a family are shown, first of all, in its instability. Instability of a family leads to the growth of incomplete families, reduces parental authority, is reflected in opportunities of formation of families, on the health of adults and children. Parenting is both a biological and a social process (Lerner, Castellino, Terry, Villarruel &McKinney, 1995). Parenting is the term summarizing the set of behaviors involved across life in the relations among organisms which are usually nonspecific, and typically members of different generations. Thus, parenting is a complicated process, involving much more than a mother or father providing food, safety, and succor to an infant or child. Parenting involves bidirectional relationships between members of two (or more) generations (Ford & Lerner, 1992). Scoblik (1996) in her research found the connection between a parent's emotional attitudes and cognitive skills.

Research Questions. The role of the father, mother, and child is established according to public requirements and ideas of values prevailing in society. If the primary attention of ideology goes only to the husband and the father, mother retreats into the shadow, and her status is equated to the child status. On the contrary, if society is interested in the preservation of health and education of the child, attention goes to mother who becomes the main character.

According to scholars, paternity is not an obligatory component of a family; it expresses belonging to a particular type of culture, but not biological function instead. Kohn (2006) divides human cultures on "fatherly," (in which the father plays the main role), and "fatherless" (in which the man mostly acts as a male, not as the father). "Fatherless" of culture is characterized by more prominent male aggression, a sharp antagonism between men and women, less cordial relations between all family members (Kohn, 2006).

From centuries main duty for a male is getting food for females and children (hunting). In all known human societies everywhere in the future world man acquires that when he grows up to a full member of society, he will have to provide food to the woman and her descendants. However the degree of social responsibility of the man for life support of his family depends on various social conditions, but usually decisive the aspiration of the man will provide wellbeing of own children though there are exceptions.

According to a report from the Agency of Statistic (Kursiv, 2017), the quantity of divorces in last five years is rapidly growing. Every third marriage in country will be finished by divorce. The following list of disturbing symptoms shows that not everything is safe in a condition of the Kazakhstan family:

- every fifth couple living together isn't married;
- every seventh family – incomplete;
- in every twelfth family there are stepsons or stepdaughters;
- the woman is at the head in 90 percent of incomplete families;
- 30 percent of the Russian families are incomplete, for comparison: 20 percent of the Kazakh and 5 percent of families of other ethnic groups are incomplete.

Purpose of the Study. The influence of the parental style of education is the purpose of our study. We assume that condition of upbringing affects on cognitive abilities of students which estimated by

Research Methods. The total number of participants is 48 pupils in 4 grades and their parents. In the research part of the work with children we used the following methods:

- "Test questionnaire of the parental relation of Varga, Stolin."
- "Determination of the level of school motivation." Schubert.
- School Test of Intellectual Development (ShTIQ).
- The Philip's school anxiety test.

Findings. During experimental research, we divided participants into two groups Experimental Group (EG) and Control Group (CG). Participants from Control Group have full families (both parent), in Experimental Group one of the parents is exist (incomplete families).

As a result of the statistical analysis in the SPSS 21 program, we revealed the positive correlation between EG and data of the ShTUR test.

From ninth-graders it was required to show abilities in finding the essential general sign, to bring concepts under a specific category. The most often found mistakes were: substitution of a general word synonymic, relative concept or, on the contrary, very sweeping categorical generalization. Sometimes, these mistakes are caused by the same reasons which were described above: not identification of concepts as a logical category, and still initially – the weak level of awareness, a conceptual stock as it is impossible neither to analyze nor to classify, to generalize concepts which sense isn't precise.

From the obtained data it is visible that in Experimental Group participants showed a low level of school motivation of 33,3%, these children attend school reluctantly, prefer to skip classes. At lessons often are engaged in foreign affairs, games.

16,6% of examinees showed the high level of school motivation. They are interested in education. Examinees of this group have an informative motive, aspiration most successfully to fulfill all requirements imposed by the school. Pupils accurately follow all instructions of the teacher, are conscientious and responsible, actively worry if receive unsatisfactory estimates.

1. 8,4% participants showed good school motivation. Examinees successfully coped with an educational activity.
2. 25% of examinees somewhat safely feel at school, however, go to school more often to communicate with friends, with the teacher.
3. 33,3% participants have a low school motivation. Such children experience severe difficulties in the educational activity.

Table 1 – Correlation analysis

		Group	Analogy	Generalization
Awareness	Pearson Correlation	.975(**)	.982(**)	.953(**)
	Sig. (2- tailed)	.000	.000	.000
	N	48	48	48
Classification	Pearson Correlation	.934(**)	.945(**)	.942(**)
	Sig. (2-tailed)	.000	.000	.000
	N	48	48	48
Generalization	Pearson Correlation	.928(**)	.932(**)	1
	Sig. (2-tailed)	.000	.000	
	N	48	48	48

** Correlation is significant at the 0.01 level (2-tailed).

Table 2 – Determination of level of school motivation

Level of school motivation	EG, %	CG, %
High level of school motivation, educational activity.	16,6	50
Good school motivation	8,4	25
The positive relation to school, high interest to extracurricular activities	25	17,6
Low school motivation	33,3	8,3
Negative attitude to school	16,7	7,1

Some of the participants (16.6) showed a negative attitude toward school. Examinees test severe difficulties in training: they do not cope with educational activity, have problems in communication with schoolmates, in a relationship with the teacher. They quite often perceive the school as the hostile environment stays in which for them is intolerable.

Participants of CG showed the following results:

- 50% of examinees showed the high level of school motivation,
- 25% good school motivation,
- 8,3 low school motivation,
- 16,7% negative attitude to school,

The formation of the child of the motivational sphere plays a vital role in his success in the educational activity. Existence at the child of motive is reasonable to fulfill all requirements imposed by the school, to prove to be from the best party forces it to show activity in the selection and storing of necessary information.

Table 3 – The comparative estimates of school anxiety

Group	General School Frustration	Social Stress	The Need for Success Achievement Frustration	The Fear of Self-expression	"Uyat bolady" stress
EG	7.9	7.9	5.8	5.1	3.6
CG	3.1	2	2	3.75	3.6

According to the results of the test, 80% of the examinees from EG demonstrated an increased level of school anxiety. In CG 56% of examinees showed the average level of anxiety. Thus, we revealed the fears prevailing at all examinees. These are such fears as fear not to meet expectations of people around, problems and fears in the relations with teachers, fear of a situation of examination. Also at children, low physiological resilience to stress is revealed.

It is possible to draw a conclusion that children have fears, connected with various forms of life in school. Also existence of fears somewhat emotional a condition of the child against which his social contacts (first of all with contemporaries), there are negative emotional experiences of the situations interfaced to need of self-disclosure, presentation to another, demonstrations of the opportunities; negative attitude and experience of alarm in situations of check (primarily public) knowledge, achievements, opportunities; the general negative emotional background of the relations with adults at school reducing success of training of the child; the features of the psychophysiological organization reducing adaptability of the child to situations of stress character.

Table 4 – Comparative data of Varga and Stolin test

Type of relationship	Acceptance/ Rejection of child	Cooperation	Symbiosis	Authoritative Hyper Socialization	The Little Loser
EG	8.4	8.4	41.6	25	16.6
CG	25	33	25	8.3	8.3

The results of the study show that most of the parents in the Control Group (CG) accept their kids. The entirely different situation is in Experimental Groups where most families tend to reject their upbringing.

According to conducted research and compared results among two groups it is possible to tell that most common style of parental relation is "symbiosis" (41.6% in EG and 25% in CG), which means the parental tendency to come into close, intense emotional contact with the child, to participate in all trifles of his life.

16.6% of participants in EG demonstrated a type of "bad" family relationship known as parental style "little looser." It is rejecting with elements of an infantilization and a social invalidation - emotional rejection of the child, the low value of his individual and personal needs and values. Growing up in "incomplete family" is a critical factor of difficulties in adolescent socialization.

Family life – the social category in which we observe all features of the interpersonal relations - conflict situations and their decision, difficulties in communication. The many factors have an impact on wellbeing in a family. Family education, being the leading factor of socialization of the personality, acts as defining and information to the child in his search for problem-solving strategy in stressful life situations. A family one of the main factors which are having a massive impact on the child: vital self-determination, physical, mental and social development. Therefore it is necessary to improve the education of children in a family and to warn the pedagogical mistakes of parents. The knowledge of typical features of family education will help to avoid any misunderstanding in the relationship with own children. In the education of the child of the younger school-age interaction of a family and school which joint activity promotes the development of qualities of his personality is necessary. It is possible to reach it in the course of direct interaction of a family and school, enrichment of parents necessary knowledge of age and psychological features of children by education and prevention, identification of shortcomings of family education and its possible correction. In our study, we analyzed theory and methodological approaches of family education problem; studied features of the progress of primary school students and revealed the factors influencing it. Various reasons cause the reasons for the unsatisfactory progress of younger school students. Family education belongs to the group of social factors which, eventually, lead to the psychological reasons. Also, we conducted empirical research, analyzed results, drew conclusions. Uneasiness is revealed at 36,6% of children, in the selection of school students. We defined that family factors cause the uneasiness of children of primary school age. The low self-assessment makes children feel uncertain, lonely and unprotected. Even child is gifted and talented but doesn't feel family support. The low level of a self-assessment is the primary predictor of excessive suspiciousness, uneasiness, shyness, uncertainty in itself. We established interrelation of styles of the parental relationship with the progress of school students. Acceptance style positively influences progress, rejection style positive influence on the progress of style "cooperation", "authoritative hyper socialization" style is negative, also revealed influences progress negatively, excessive control of the child causes opposite (adverse) effect of its success in study, "little loser" style also has negative impact. The perception of the child as "unsuccessful," belittling of its advantages and abilities negatively affects the progress of the child. We found out that success level in the study depends on such parameters as uneasiness, the school student's self-assessment, the style of the parental relationship in the school student's family. At the same time style of the family, the relation has a direct impact on the development of uneasiness of the younger school student. Thus, destructive types of family education have the negative impact on the progress of children of primary school age.

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БАЛА – АТА-АНА ҚАТЫНАСЫ КІШІ МЕКТЕП ОҚУШЫЛАРЫНЫҢ АКАДЕМИЯЛЫҚ ЖЕТІСТІККЕ ЖЕТУІНІҢ НЕГІЗГІ ФАКТОРЫ РЕТІНДЕ

Аннотация. Жоғарыда аталған мақалада кіші мектеп оқушыларының оқу жетістігінің мәселелеріне талдау жүргізілген. Оқу және тәрбиелеуде процессінде жетістікке жету педагогтардың, балалар мен олардың ата-аналарының бір тұтас жетістігін анықтайды. Оқуда және тәрбие процессінде жетістікке жету туралы қатысушылардың ең болмағанда біреуі табыс және қуаныш сезімін басынан кешіргендер ғана айта алады. Психология және педагогика аймағындағы көптеген зерттеушілерді аталған зерттеу тақырыбы аз зерттелгендігімен назарын аударып отыр. Мұның өзектілігі білім беру жүйесі практикасында аз жүзеге асуында болып отыр. Бұл әсіресе оқушының қазіргі мектепте оқуға психологиялық дайындығы мәселесін және баланың оқуда жетістікке жетудіндегі ата-ананың ролін анықтайды. Мақалада кіші мектеп оқушысының оқуда жетістікке жетуінің әлеуметтік-психологиялық шарты ретінде отбасына жүргізілген эмпирикалық зерттеулер нәтижелері берілген. Зерттеулерден анықталғаны, отбасындағы бала және ата-ана арасындағы өзара қатынас баланың жалпы психологиялық жағдайына үлкен әсерін, сонымен бірге мектепте баланың оқу жетістік деңгейіне және оқу үлгеріміне тигізетін әсері анықталды.

Түйін сөздер: IQ, мотивация, кіші мектеп оқушысы, ата-ана қатынасының стилі, білім беру.

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ДЕТСКО-РОДИТЕЛЬСКИЕ ОТНОШЕНИЯ КАК КЛЮЧЕВОЙ ФАКТОР АКАДЕМИЧЕСКОЙ УСПЕШНОСТИ МЛАДШИХ ШКОЛЬНИКОВ.

Аннотация. В статье проведен анализ проблемы успешности обучения младших школьников. Успешность обучения и воспитания в педагогическом процессе в целом определяется успешностью педагогов, детей и их родителей. Об успешности процесса обучения и воспитания следует говорить только тогда, когда хотя бы один из его участников переживает или пережил чувство радости и успеха. Данная тема исследования притягивает внимание многих исследователей в области психологии и педагогики и изучена незначительно. Ее актуальность заключается еще и в том, что проблема, поднимаемая нами в этом исследовании, также имеет малую реализацию в практике образования. Особенно это касается проблемы психологической готовности к обучению в школе современных школьников и выявления роли родителей в процессе успешного обучения детей. В статье представлены результаты эмпирического исследования семьи, как одного из социально-психологических условий успешности обучения младших школьников. Выявлено, что взаимоотношения родителей и детей в семье имеют большое значение для общего психологического состоянии ребенка, а также оказывают значительное влияние на успеваемость и на уровень успешности обучения ребенка в школе.

Ключевые слова: IQ, мотивация, младшие школьники, стиль родительского отношения, образование.

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THE DEFINITION AND ESSENCE OF LAND RELATIONS AS AN ECONOMIC CATEGORY

Abstract. The basis for the formation of efficient agricultural production is the improvement of land relations and the formation of land use system, “adequate to market economy”. Society is in urgent need of transition to fundamentally new type of economic growth - intensive growth of resource-saving type, based on the careful use of natural resources, to achieve ecological balance. Special, outstanding value in the life of society has the earth by itself. It is an essential condition of human existence; an indispensable means of satisfying the most varied needs - economic, social, and aesthetic, etc. Nevertheless, use of land usually refers to its operation in the sphere of production. Rational use of land resources is the great importance in the economy of agriculture and the country as a whole. In the sphere of human production, the role of land is quite important. In industry, transport and urban planning it is used as foundation, spatial operational basis for the location of production. Land becomes more important in the extractive industry, where it serves as the source of raw materials. The process of production doesn’t depend on the quality of the soil, topography and many other landproperties.

Keywords: land relations, land resources, land ownership, land protection, land plots, land alienation, land cadaster, land use, market economy, ecological balance.

Management of land resources is one of the functions of public authorities, which, acting on behalf of the state, realize the powers of authority, represents the interests of legal entity, state ownership on the earth. According to Seifullin Zh.T.: “Management in the field of use and protection of lands represents the activity, directed to the organization of rational use and protection of the earth as a component of the environment, means of production, spatial and operational basis, an object of the property relations” [1, p. 99]. One of the main objectives of management of land resources is the correct distribution of land resources for their rational use. In the relations on acquisition, use and alienation of the land plots in which the state doesn’t participate the minimum control over the concrete land plot is implemented through the establishment, concerning concrete purpose, and already depending on use purpose of public authorities, with the opportunity of direct participation in the relations of this land plot. In the relations on granting the land plots the public authorities are directly involved. “Granting the land plots is the ordered activity of interested persons and executive authorities of appropriate level, which is carried out in the procedural form and other subjects, directed to establishment of the property law and other branches of the legislation for the concrete land plot” [2, p. 365]. Granting, unlike other bases of emergence of the law for the land plot, is possible, only according to the decision of public authority.

As T.S. Bobushev and K.O. Otorbayevnoted: “Correct in essence and determination of competence of each body, accurate in official form is one of the indispensable conditions of the perfect organization of management personnel, harmonious work of all its links, increases in responsibility of each body for the charged business” [2, p. 145].

According to N.M. Omarov, “the competence of governing body includes not administrative functions, which it carries out, areas of jurisdiction in which sphere are the acts, not acts of management, which it issues, and no other forms of activity, but a duty (before the state) and the right (in relation to objects of management) to carry out the specified administrative functions” [3, p. 14].

Basis of formation of effectively functioning of agricultural production is improvement of the land relations and formation of system of land use, “adequate to the market economy”. Society is in great need in transition to essentially new type of economic growth: to the intensive growth of resource-saving type, based on careful use of natural resources, on achievement of ecological equilibrium. The dependant relation to the nature has put the habitat of activity on a degradation side. As a result we see the surrounding environment, which being a source of factors of production and means of life, loses the qualities of self-restoration, and the economy faces with unforeseen and often acute contradictions, unpredictable on the consequences, between the nature and society.

In the life of society the earth has special, outstanding value. It is the most important condition of existence of mankind, irreplaceable means of satisfaction of the most different requirements: economic, social, esthetic, etc. However, speaking about use of the earth, usually mean its functioning in the sphere of production. Rational use of land resources has the great importance in rural economics and in our country, indeed. In the spheres of production activity of the person the role of the earth isn’t identical. In the industry, transport and city communicationsit is used as the base, spatial operational basis for the production placement. More particularly important the earth becomes in the mining industry, where it serves tothe quality as the source, raw materials. The process of production and receiving production doesn’t depend on the quality of the soil, relief and many other properties, inherent in the earth.

In agriculture receiving production is connected with a qualitative condition of the earth, with character and conditions of its use. It is the important productive force, without which the process of agricultural production is inconceivable. The earth in agriculture functions as an object of the labor, when the person influences the top horizon - the soil, and creates all the necessary conditions for growth and development of crops. At the same time the earth is also an instrument of labor, when at cultivation of plants mechanical, physical and biological properties of the soil for receiving agricultural production are used. Therefore, the earth becomesactive mean of production in agriculture. Its acts as a necessary material, prerequisite of process of work, one of the important material factors of the production. The earth is special, original, irreplaceable and non-reproducible mean of production in the agriculture of our country.

Land resources in agriculture have a number of specific features, which significantly distinguish them from other means of production and exert a great influence on agricultural production economics. The earth is a product of the nature. Unlike other means of production, which are the result of work of the person, the earth represents a product of ancient centuries, natural-historical development of the nature. Only the fertility of the top layer of the earth (soil) partly depends on results of work. Thus, the earth is artificially non-reproducible. The earth is territorially limited. From the economic point of view it means not so much limitation of a land surface, many insufficiency combination of the properties and environment are favorable for agricultural production.

The earth, unlike other means of production in agriculture, can’t be replaced. Separate grounds aren’t uniform in the fertility. One of them contain more nutrients, others are better provided with moisture, anothers have absolutely specific structure of the soil, etc. An equal investments in rural area receive various quantity of the production.

Land resources can be used only in their natural place. The earth can’t be moved from one place on another whereas use of the majority of other means of production aren’t connected with constancy of the place. The diversity of use of the earth means, that a large number of different types of crops are cultivated. The earth in the case of the correct use doesn’t wear out, become bad, week and improves the property and crop [4, p. 23].

All the features of the earth means the production in the theory and practice of the rational agriculture. The person can actively influence fertility of the soil. Level of this influence is defined by the condition of development of productive forces, their technological application in agriculture. Processes of liberalization of economy almost in all Commonwealth countries have begun practically at the same time. Rates and scales of this process differ with the prevailing forms, in the condition of commercialization and privatization of the state enterprises, liberalization of the prices, domestic and foreign trade, restriction of the role and influence of the central economic and branch departments, their formal reorganization or elimination. These directions of the reforms were represented and declared as the basic course of economic transformations, the main condition in the transition from the centralized planned economy to the marketeconomy.

However, full privatization of economic activity hasn't happened in one of the Commonwealth countries.Each state has some extent functions of the direct participationin the process of reproduction, influence and control in the main spheres of economy, in the distribution and redistribution of property, financial and material resources, management of the foreign trade and investment streams.

The reasons of preservation of the positions of the state in economy are interpreted by the different ways. Preservation of high extent of its nationalization with strong heritage of the centralized planned management and inability of private and corporate business, without the directing role of the state and its direct financial support, economic legislation, its insufficient market orientation. The theories of national mentality, public rejection of a private property on means of production, collectivist attachments of the most of the population, traditional dependence on clan and paternalism.

However, most often the reasons of incompleteness and insufficiency of liberalization of economic activity contact mistakes and miscalculations of reformers, lack of political will and socially recognized ideology of market reforms. Each of these reasons were shown in all Commonwealth countries (CIS), they have significantly limited introduction and development of free market forces, formation of the self-regulating economy.

Before passing to the questions of land use and the land relations, it is necessary to specify interpretation of such terms as: "land resources", "land use" and "efficiency".

Land resources mean the lands, which borders are on the territory of the country. Term "land resources" is many-sided and multiple-valued. It is obvious taking into account the practical requirements of society in the view of ecologic, economic, legal and technological aspects, and also concrete historical one. At the same time, the land resources always must to analyze the immemorial vital resources of mankind. The main criteria of inclusion of the territory in category "land resources"are the level of its study, economic requirement, expediency and technical capability of use. In this case the concept "land resources" means a certain part of the territory, which shows the development of productive forces and public relations as the prerequisite of any production,spatial operational basis, the storeroom of raw materials or means of production [5, p. 351].

Before establishing the differences in understanding in the above-named sources of the term "land resources", it is necessary to give definition to the concept "resource". We consider that this definition incomplete and is considered only from the positions of land resources of the state.

Therefore this part of definition demands specification. In relation to our subject researches on these criteria it is possible to exclude land resources of territories which aren't used today. For example, mountain pastures glaciers, the massif, and the settlements of rural territories. These territories can also drop out of category of the land resources.

Thus, land resources can be treated as follows:

1) the lands, which are in borders of the territory of the Kyrgyz Republic;

2) the lands, which are in administrative borders of subjects of municipal bodies;

3) the land plot of economic entity of various form of ownership and legal forms, belonging to them, according to the current legislation, used by them, according to their purposes.

The relationships between land use, land price, and land value show the relationships between authorities of the country and farmers. The variables affecting land use functional structure of the city namely: geographical, economic, urban, laws and legislation, political, environmental, social, public interest, and demographic variables. Finally, the integrated value model will be developed in the different countries very special. The value model is a mathematical based model for simulating future land use, especially in valuable lands.

Definition the land plot also needs some specification. The land plot is a part of the land surface, including soil fertile a layer, having fixed borders, the area, location and legal status. The land plot is the part of the land surface, having the closed borders, the fixed location, the area and legal regime.

Land use considered one of the essential factors, influencing the pattern of urban development. The limited space within cities combined with the growing space requirements for various purposes outlines the framework of the struggle for land for different purposes and by different vested interests. The difficulties in land use planning result from the contradiction between the rapid technological changes, which influence urban growth and the process of planning of land use. Land use in the city has a unique structure, mostly due to the interactions between its spatial configuration and functions, developing into a patchwork of functional regions of different forms [6, p. 118].

Mentioned above definitions of the land plot represented the land plot as the part of the land surface having the closed borders, fixed location, area, legal status and cost. Governments use lands, planning to manage the development of land within their jurisdictions. In doing so, the governmental unit can plan for the needs of the community, while safeguarding natural resources. There is the systematic assessment of land and water potential, alternatives for land use, and economic and social variables in order to select and adopt the best land use options. Through this process, governments need to use some tools like computer and mathematical models to guide land use to the optimal use.

Common fault of the above-stated definitions is considered only as an independent real estate object. In practice communication of the land plot and the real estate objects, which are on this site is indissoluble. Below we show two definitions, which eliminate this "gap".

Some authors understand a part of the real estate in the form of the site of the territory, defined in the legal description of this real estate as the land plot. They understand the description of the site and a real estate object, on which they can be unambiguously identified, accepted for judicial proceedings as the legal description. The land plot is a part of the Earth's surface (including a superficial soil layer), which borders are described and certified, in accordance with the established procedure.

Thus, in our opinion, the land plot is the part of the real estate in the form of a part of the land surface, having the closed borders, the fixed location, the area, legal status and cost considered together with the objects, which are over and under this land plot.

Land use on the terms of unlimited (continuous) use of the earth - on the property right and on the terms of temporary use by the earth - rent can act as use of the land plot.

A number of authors understand granting as land use in accordance with the established procedure in continuous or temporary use to the citizen or the legal entity of the land plot. Consequently, the different variables constituting the list of variables affecting land use functional structure of the city, based on all the previously introduced concepts. The variables that are affecting land use, land value and other variables are classified into geographic, environmental, economic, social, urban, public interest, laws and legislation, demographic, political variables. We almost wrote about these problems in the beginning of our article.

Land use supposes using the enterprises, collectives, and individuals, according to the order, established by the law, conditions and forms. Land use is the site of the territory in the established borders, provided by the state, according to the land legislation to the certain land user for a definite purpose. Land Code of the Kyrgyz Republic has fixed the conditions, the status of the persons, owning and using the land plots on the right of continuous (term less) use or on the right of rent. Thereby legislators have expanded the concept "land user", having included signs of "land owner", according to the positions of the current legislation have formulated this part of definition incorrectly.

Land value is one of the fundamental tools used in urban management and the quality of the urban environment as it has an essential role in evaluating and improving the land needs. A group of urban variables (roads, traffic network, buildings and public services) has a great relation with the land value as a result of the exchanging relations among them. As well as the modality of developing these areas as every group contains a set of subsidiary variables that interact with each other to change the land value. Subsequently, we can distribute the urban variables into three significant groups: the roads and transportation network, development density, and public services in the area and land uses.

"Land use" has double contents. On the one hand, it means the economic disposal or at the property of individuals, collectives, organizations, enterprises or states, in general land use. On the other hand, the concept "land use" means the use of the earth, regulated economic and precepts of law as general working condition in all spheres of human activity and the production in rural and forestry. In this sense the concept "land use" includes forms, the right and types of the economic operation with the earth as the natural resource.

As accessory of the earth, the property relation directly influence the amount of land use, conditions and the nature of use of the earth so far as the semantic shade of the concept "land use" of each case is defined by a context. Economic activity of the person is various that lead to allocation of different types of land use. Certain requirements are imposed on each type of land use.

Unlike many other land use models, the objectives of the value model is not to forecast the dimension of land use change but rather to integrate and allocate future land use claims from various sectorial models. The results of the model should not be interpreted as a fixed prediction for a particular location but rather as probable spatial patterns. The land use model employs the equilibrium principle to balance the need for various land use functions with the supply of suitable land.

In relation to our subject of a research we will mean use of the land plot belonging on the property right or rent to economic entity (the legal or natural person) according to purpose and a legal regime of use by land use.

There are the different kinds of the earth: agricultural; industrial; town-planning.

The land use model is mathematically based model that simulates future land use and which offers an integrated view on all types of land use. It deals with geographic, economic, urban, social, environmental, public interest, political, demographic, laws and logistic variables, usually distinguishing seven or more different land use categories, residential, commercial, educational, medical, social, recreational and cultural.

If process of production in the industry doesn't depend on the condition of fertility of the soil, quality, natural and many other properties inherent in the earth, then in agriculture process of work and creation of products is connected with these properties of the earth, with its qualitative condition, the nature of use. Land has special characteristics compared to other economic good: the supply of land is fixed (with the exception of land reclamation), every parcel of land has a fixed area, which is a unique property, and the use of a parcel of land affects the use and value of adjacent parcels. Spatial distributions of land uses are not linked to the primary principles of the site theory, but otherwise is connected to a number of factors which have similar direction in general, including many variables working together and are different in their impact and direction; such variables affect and are affected by each. Land market is not transparent and market information is often hard to get. Moreover, other values than the market price for land can exist, like the social land value or non-revealed values as a result of zoning restrictions. Land value with all its economic, social, and urban dimensions control the spatial and functional change of land use.

On the level of management and also depending on regional accessory all lands in our republic are divided into republican value and earth of local governments (area, the area, the mainly district).

On the other hand, we agree with T.Ch. Kultaev's and Sh. M. Musakozhoev's opinion, that "land resources" mean a certain part of the territory and operational spatial basis of production. For economic entities land resources are the place of concentration of other resources (labor, material, financial, information). It is impossible to use a complex of those elements without the production or rendering services [7, p. 3].

In economic literature there are different types of effect: economic effect and effect of production. The effect can be both positive and negative. In general economic effect is understood as useful result of a certain kind of activity, which is measured as the difference between activity and expenses on its implementation. The effect of production understood as the result of production activity. At the same time the positive effect of production is shown in the form of the positive final result, the useful result of production activity, characterized by the volume of material benefits, which quality and the range satisfied to the requirements of the society.

Land reform, a purposive change in the way in which agricultural land is held or owned, the methods of cultivation that are employed, or the relation of agriculture to the rest of the economy. Reforms such as these may be proclaimed by a government, by interested groups, or by revolution. The concept of land reform has varied over time according to the range of functions which land itself has performed: as a factor of production, a store of value and wealth, a status symbol, or a source of social and political influence [8, p. 140]. Land value reflects its relative scarcity, which in a market economy usually depends on the ratio between the area of usable land and the size of that area's population. As the land area declines, the relative value of land rises, and land becomes increasingly a source of conflict among economic and social groups within the community.

Thus, the economic efficiency is the relative indicator, commiserating the gained effect (or result) with the expenses or a resource, used for achievement of this effect that is quantitatively efficiency is defined by the result relation to expenses. Values of this indicator can't already be summarized in space and time.

In the conclusion we would like to note that all the greatest measure promotes the solution of the economic and social tasks facing society is considered effective. Questions of economic efficiency and its increase find extended coverage in economic literature. The essence of economic efficiency of production is treated by most of economists as the achievement of the maximum results for the benefit of the society at minimum possible costs. At the same time the set of various positions about criteria and indicators of production efficiency, the structure of results and expenses moves forward.

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ЭКОНОМИКАЛЫҚ КАТЕГОРИЯ РЕТІНДЕ ЖЕР ҚАТЫНАСТАРЫНЫҢ ТҮСІНІГІ МЕН МӘНІ

Аннотация. Тиімді жұмыс істейтін ауыл шаруашылығы өндірісін қалыптастырудың негізі «нарықтық экономикаға сәйкес» жер қатынастары мен жерді пайдалану жүйесін құруды дамыту болып табылады. Қоғам экономикалық өсудің түбегейлі жаңа түріне көшуге – табиғи ресурстардың мұқият пайдаланылуына негізделген ресурстарды үнемдеудің қарқынды өсуіне, экологиялық тепе-теңдікке қол жеткізуге мұқтаж. Жер қоғамның өмірінде айрықша, ерекше маңызға ие. Бұл адамзаттың өмір сүруінің маңызды шарты, оның әртүрлі қажеттіліктерін – экономикалық, әлеуметтік, эстетикалық және т.б. қажеттіліктерін қанағаттандырудың қажетті шарты. Алайда, жерді пайдалану туралы айтқан кезде, әдетте, өндіріс саласындағы жұмысы ойға келеді. Жер ресурстарын ұтымды пайдалану ауыл шаруашылығының экономикасында ғана емес, тұтастай ел үшін де өте маңызды. Адамның өнімділігі саласында жердің рөлі бірдей емес. Өнеркәсіпте, көлікте және қала құрылысында ол өндірістің орналасуы үшін кеңістіктік операциялық негізінің іргетасы ретінде пайдаланылады. Ал тау-кен өнеркәсібінде шикізат көзі ретінде қызмет ететін жердің маңызы үлкен орынға ие. Мұнда өндіріс процесі мен алынған өнім жердің сапасына, рельефке және басқа да көптеген қасиеттерге тәуелді емес.

Түйін сөздер: жер қатынастары, жер ресурстары, жерге меншік, жерді қорғау, жер учаскелері, жерді меншіктен шығару, жер кадастры, жерді пайдалану, нарықтық экономика, экологиялық тепе-теңдік.

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ПОНЯТИЕ И СУЩНОСТЬ ЗЕМЕЛЬНЫХ ОТНОШЕНИЙ КАК ЭКОНОМИЧЕСКОЙ КАТЕГОРИИ

Аннотация. Основой формирования эффективно функционирующего сельскохозяйственного производства является совершенствование земельных отношений и становление системы землепользования, «адекватной рыночной экономике». Общество остро нуждается в переходе к принципиально новому типу экономического роста - интенсивному росту ресурсосберегающего типа, основанному на бережном использовании природных ресурсов, на достижении экологического равновесия.Особое, выдающееся значение в жизни общества имеет земля. Она является важнейшим условием существования человечества, незаменимым средством удовлетворения самых разных его потребностей - экономических, социально-бытовых, эстетических и т.д. Однако, говоря об использовании земли, обычно имеют в виду её функционирование в сфере производства. Рациональное использование земельных ресурсов имеет большое значение в экономике сельского хозяйства и страны в целом. В сферах производственной деятельности человека роль земли не одинакова. В промышленности, транспорте и градоустройстве она используется как фундамент, как пространственный операционный базис для размещения производства. Более важное значение земля приобретает в добывающей промышленности, где она служит в качестве источника сырья. Здесь процесс производства и получения продукции не зависит от качества почвы, рельефа и многих других свойств, присущих земле.

Ключевые слова: земельные отношения, земельные ресурсы, собственность на землю, охрана земель, земельные участки, отчуждение земель, земельный кадастр, землепользование, рыночная экономика, экологическое равновесие.

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ROLE AND PLACE OF MEDIATION IN THE LEGAL TRADITION OF THE PEOPLE OF KAZAKHSTAN

Abstract. A legal conflict occupies certain position among different conflicts in the society. A conflict is considered as legal, if there are certain signs as an object, object, subject, and also motivation, sides conduct the definite dispute;usually, the conflict has some legal consequences. Dispute, for instance, is necessary to examine as the objectively expressed contradiction of wills of two sides, that consists of carrying legal character of requirements of one side, resisting to the legal requirement of the second side, that hampers the real satisfaction of this requirement. Under legal status the actual position of person is understood as the legal in accordance with that application of compulsion in regard to the approval of public organs subject. From the origin of dispute about the right ofits subjects the personal interest appears in the permission. A legal conflict has the constituents, such as an object and subject of conflict. To our mind, the sides of the conflict arethe physical persons, foreigners, persons without citizenship; state, public organizations, possessing legal personality come forward the subjects of conflict. On the basis of legal personality there is cooperationbetween each other in the process of conflict.

Keywords: legal conflict, мediation, mediator, legal traditions, customs, motivation, dispute, legal requirement, legal status, pre-conflict situation.

There are no explicit constraints in the Supreme Court of Kazakhstan's mediation program. A broad definition of mediation means that the mediation has been introduced into the litigation process and there are no restrictions on the kinds of mediation that may be practiced.Despite the fact that there are no explicit limitations placed upon court-connected mediation, in practice there appears to be a focus on settling based upon a discussion of the legal issues. This limited scope and practice of court-connected mediation has been confirmed consistently in empirical research.

There are the reasons, which allowedto mediation,been practiced in the Supreme Court of the Republic of Kazakhstan:

1. Non-legal interests tend to be ignored;
2. Lawyers rather than disputants are the main participants;
3. There is a tendency for competitive approaches were adopted.

This thesis also offers an explanation, why court-connected mediation has particular characteristics. The influences of the connection with the formal civil justice system, court-connected mediators' practices and the ways, that lawyers approach during the mediation procedure.

It is argued that in court-connected mediation, the potential scope of mediation is affected partly by the dilemma of court-connection. This dilemma is that when courts sanction mediation processes, they face the following tensions:

- Whether the court has an obligation to ensure the fairness of a private, consensual process conducted under its supervision.
- Whether court-connected mediated outcomes should comply with the law.
- How much courts (and mediators) should interfere in lawyer-client relationships and lawyers' promotion of their clients' interests andmanagement of their legal cases, by encouraging direct disputant participation.

The private and consensual nature of the mediation process impedes courts' ability to monitor mediation in the way that they can monitor other litigation processes. Formal rules of procedural fairness and the doctrine of precedent equip courts to monitor the trial process. These formal standards are difficult to monitor in mediation, largely because it is a private process. A record of trial proceedings is kept and can beexamined if allegations of unfairness in process or outcome are raised. Records of mediation proceedings are confidential and generally inadmissible [1, p. 11].

Furthermore, when mediation takes place in connection with the formal litigation system, the direct participation of disputants is an unusual practice within that system. The conventions of legal representation are that lawyers speak on behalf of their clients, often negotiating without their clients being present.

In formal trial processes, lawyers carefully manage the communications that occur and manage the legal case. Clients only participate directly by giving evidence in the witness box and giving instructions to their lawyer in private.

There is also tension between the cooperative opportunity of mediation and the context of a primarily adversary litigation system. This tension impacts upon the way that participants, including mediators and lawyers, approach mediation in the context of litigation.

Lawyers and mediators are officers of the Court and therefore share some responsibility for responding to the dilemma of court-connection. This thesis examines the ways that the Supreme Court of Kazakhstan, mediators and lawyers who practice within the mediation program have responded to the tensions arising from connection with the litigation system.

The way that lawyers understand the mediation process also impacts upon the nature of court-connected mediation. Lawyers' perspectives of the potential opportunities that may be realized through mediation processes are affected by their awareness ofthe range of practices within the mediation field and their understandings of the purposes of court-connected mediation. This thesis provides detailed insight into the perspectives and approaches of lawyers to mediation in the Supreme Court of Kazakhstan.

The qualitative analysis does not support generalization of the statements made by interviewees in this research to lawyers in a broader context. This research nonetheless contributes to the growing body of evidence about lawyers' practices and perspectives of court-connected mediation processes. Trends and themes are identified and compared to the findings in other court-connected contexts.

The research focuses on general civil disputes. The types of matters that are mediated in the Supreme Court of Kazakhstan's program are mixed general civil cases and therefore caution should be exercised when drawing comparisons with mediation practice in specialist courts. For example, the nature of mediation practice in the Family Court of Kazakhstan would be expected to differ markedly from the nature of mediation practice in personal injuries or commercial disputes, which make up the bulk of the Supreme Court of Kazakhstan's case load.

The practices and perceptions of lawyers who participate in the mediation program are the main focus of this thesis. The practices and perceptions of mediators are also considered. The other group of participants in court-connected mediation is disputants, whose perspectives fall outside the scope of this research.

This monograph is not an evaluation of the effectiveness of the mediation program at the Supreme Court of Kazakhstan. It therefore does not seek to draw any conclusions about whether or not the mediation program is 'successful.' The success of mediation is difficult to determine and depends upon the perspective from which the program is evaluated. In any event, the institutional objectives of the Court's mediation program have not been clearly defined by the Court. The quality of the mediation program cannot be determined in the absence of clearly defined objectives.

One of the consequences of a lack of clear institutional objectives is a diversity of participants' expectations. The diversity of lawyers' and mediators' expectations of the mediation program is demonstrated in this monograph.

Whether or not disputants are satisfied with the way that court-connected mediation is practiced within the Court is not considered here. Disputants' perceptions about mediation would address the question of whether it matters to disputants that court-connected mediation differs from the potential of mediation in other contexts. However, that question is not posed by this research. One of the reasons for notaddressing that question is that attempts to identify disputants' views were unsuccessful.

This monograph does not seek to evaluate the performance of either the mediators or lawyers who practice within the Court's mediation programmer. In relation to the nature and outcomes of the programmer, the roles of participants and the style of mediation practice, it is not asserted that there are 'right' and 'wrong' approaches. However, the approaches that are adopted shape the scope, potential and nature of court-connected mediation. This thesis investigates what is happening in the court-connected mediation programmer and asks whether that is the optimum that could be achieved, in terms of the full potential of mediation within the litigation context.

The nature of mediation practice in courts is under-researched. There is insufficient evidence of both the way that court-connected mediation is practiced and the way that lawyers perceive court-connected mediation. This thesis provides empirical evidence that addresses both of these deficiencies. It is the first examination of theway that mediation is practiced in the Supreme Court of Kazakhstan and of the way that Kazakhstan lawyers approach and perceive court-connected mediation in general civil disputes. This research therefore contributes a unique and significant insight into lawyers' perspectives of court-connected mediation in Kazakhstan.

The qualitative analysis in this research is based upon in depth interviews of lawyers and mediators. It is the largest Kazakhstan study to date based upon in-depth interviews of lawyers about their practices and perspectives of mediation. The richness of the qualitative data complements quantitative survey-based research about lawyers' perspectives of mediation. This research also complements research based upon in depth interviews of plaintiffs involved in court processes, by providing the perspectives of lawyers.

It will therefore contribute to the debate about whether lawyers tend to act in a way that impact on the potential of mediation, and if so, why they do so. Particular approaches to mediation by lawyers may be explained by developing a better understanding of factors that influence their perspectives of court-connected mediation.

The present research contributes a unique insight into Kazakhstan lawyers' perspectives and practices in court-connected mediation, which is compared and contrasted with research about international lawyers' perspectives of mediation, about which there has been more research conducted.

It is generally recognized that court-connected mediation tends to be very lawyer-driven. It has been suggested that legal culture contributes to the legalistic nature of court-connected mediation.However, there is a dearth of empirical research addressing the influence of lawyers in mediation. This thesis provides empirical evidence of the shaping of court-connected mediation by lawyers, provides a better understanding about how legal perspectives impact on the practice of court-connected mediation and the implications of this for the civil justice system and the mediation field [2, p. 64].

Therefore, the case study of the mediation programmer at the Supreme Court of Kazakhstan is detailed. The description of the programmer provides important contextual information. It is recognized that there are limitations to the application of research findings between different court-connected mediation programmers. However, where programmer characteristics are clearly defined, some qualified conclusions may be drawn about similar programmers operating in other locations.

Core features of mediation are then identified and it is concluded that each of these features is universal within the mediation field and that a degree of each is expected in every mediation process. The impact of the connection of mediation with the litigation system on each of the core features is considered. The key opportunities linked to each of the core featuresare identified and form the theoretical construct upon which the examination of the Supreme Court of Kazakhstan's mediation program is built, through a testing of the hypotheses.

This research also concludes that although there is a tendency for mediation at the Court to have a narrow legal focus, there are some cases where a broader range of issues are discussed. Mediators are able to respond to the individual preferences of the disputants in relation to process and content. They actively support direct disputant participation in private sessions and are supportive of direct disputant participation in joint mediation sessions. However, mediators tend to take a 'hands off' approach to many decisions about process and content, leaving it primarily to lawyers to shape the mediation process and outcomes.

The findings demonstrate that lawyers actively narrow the scope of mediation, perceive its primary purpose to be the efficient resolution of legal issues and generally prefer to act as spokespersons for their clients. Lawyers, through their interactions with their clients and their approaches to the mediation process, limit the capacity for court-connected mediation to realize the key opportunities of mediation.This thesis examines how one programmer, and the lawyers in it, has responded to that dilemma and it measures the consequent impact on the potential of mediation in that programmer.

The particular issues that arise when mediation is connected with courts are considered throughout this chapter. The tensions that arise when mediation is conducted within the context of the formal legal system reflect distinctions between the way that the formal legal system resolves disputes and the alternative approaches to dispute resolution that are embedded in the mediation field. Some tensions arise from the court's obligations as the public institution of justice compared with the private ordering that may occur in mediation. Other tensions arise from uncertainty about the appropriate roles of lawyers and their clients in court-connected mediation. The dilemma of court-connection presents inevitable challenges for mediation within the legal system and must be resolved in some way.

This begs consideration of the extent to which different ideologies, practice models and purposes might be promoted in the court-connected context. Consideration of this matter contributes to the justification for the hypotheses to be tested in the examination of court-connected mediation in the Supreme Court of Kazakhstan. Court-connected mediation generally operates within a context of broad definition and non-restrictive guidelines. This is true for the Supreme Court of Kazakhstan. It is concluded that it is inappropriate to restrict expectations about court-connected mediation practice to particular theories or practices of mediation, as there is an opportunity for any of them to be promoted in the court-connected context[3, p. 825].

The history of mediation as an alternative to formal justice systems, the multiple directions in which mediation has grown, the use of mediation in Kazakhstan and the interaction between mediation and courts is discussed. This introduces the diversity of the mediation field, the foundations on which the field is grounded and issues particular to court-connected mediation.Intervention in disputes by a third party has always been a common method of conflict management and has been practiced in diverse communities and circumstances. Modern understandings of mediation reflect contemporary values of individualism, self-determination and consensus, values which became prominent in Kazakhstan during the 2011-th.

These values contrast with the importance in the formal legal system of universal application of legal standards, determination by a third party decision-maker and competition between perspectives rather than cooperation. The contrasting underlying values of the mediation field and the formal legal system create the dilemma of court-connection that is presented when mediation is conducted within the legal system.

The history of the modern dispute resolution field demonstrates that mediation gained prominence as an alternative to formal legal processes and is laden with values that may conflict with the values of the adversary justice system. The development of mediation as an alternative is of particular relevance when examining mediation within the context of the court system. The way that the mediation field has developed in Kazakhstan is considered, particularly trends in court-connected programs. This part concludes by considering some of the ways that courts and mediation have interacted within the court-connected context.

The modern dispute resolution field, of which mediation is a part, emerged from dissatisfaction with existing processes, promises about what new approaches offered and changed attitudes towards conflict.New approaches to dispute resolution arose from dissatisfaction with dominant paradigms and practices of negotiation and conflict resolution. These included: the adversarial nature of the justice system, competitive approaches to dispute resolution and determination by third parties rather than participatory decision-making. Dissatisfaction with existing conflict resolution paradigms and practices emerged in the context of rapid social change that challenged existing hierarchies, prioritized individual freedom over state control and promoted peace.

Theorists and practitioners of dispute resolution started developing alternative ideas about "how people might more effectively interact to solve problems". Advocates of new approaches to dispute resolution maintain a conviction that a cooperative problem-solving approach to dispute resolution is preferable to an adversarial positional approach.

The adversarial, positional approach to dispute resolution is a defining feature of the adversary justice system. In that system, parties compete to have their own position accepted as the "truth" by the third party decision-maker. Conflict is resolved through competition, from which there emerges a "winner" and a "loser".

Mediation is said to provide an opportunity to treat conflict as a positive learning experience, to celebrate diversity, to priorities cooperation over competition and to resolve the underlying issues that have contributed to the conflict. Such claims present mediation as a process that overcomes the inadequacies of traditional approaches to dispute resolution. Mediation is presented as an educative, inclusive and cooperative process that promotes peace. Its potential includes the achievement of longer lasting resolutions and social change[4, p. 180].

The dispute resolution field is founded on recognition that conflict is an inevitable consequence of living in a human community and it should not be feared, avoided or unexpected. Theories have developed which assume the inevitability of conflict and propose means of managing that conflict in a constructive, peaceful way. Therefore, to be in conflict is not perceived to be a sign that a relationship has failed, but is an opportunity to manage difference. Such theoretical notions are contradicted in the philosophy of the traditional legal system which tends to assume that there is onlyone truth and that if one understanding of a situation is right, then alternative understandings are wrong. This is a positivist approach that produces binary outcomes. By contrast, dispute resolution tends to emphasize diversity and may encourage imaginative outcomes that side-step the issue of blame.

The distinction between the privacy of mediation and the public nature of the formal justice system is another example of mediation as an alternative. The private, confidential and privileged qualities of mediation are fundamental features of the process. These qualities contrast with the open, accessible and public nature of court proceedings. However, they are qualities that mediation shares with the process of lawyer negotiation, which is a traditional means of resolving litigated disputes. The benefits of confidentiality include: the ability to avoid public scrutiny, the creation of a “safe” environment in which open and free communication is enabled and the protection from exposure of the terms of settlement to the public. Mediation provides an opportunity to enjoy the benefits of confidentiality that are present in informal negotiations with the added potential benefits of a mediator facilitating the process. In this sense, mediation offers an alternative to unassisted negotiations[5, p. 96].

Mediation is a dispute resolution process that offers an alternative to other processes, including the enforcement of rights by a judge, negotiation between lawyers on their client’s behalf and direct negotiation between the parties. The ways in which mediation can be distinguished from alternative processes varies according to the way mediation is practiced.

One of the defining features of mediation is the variety inherent within it. Mediation is flexible and adaptable so that its effectiveness can be maximized. The measures of effectiveness vary between the purposes of mediation, which are also diverse. Mediation may be interest-based, focus on relationships or have a pre-occupation with settlement.

There are a number of potential advantages of problem-solving negotiation over traditional positional negotiation. They include: the creation of an opportunity to address underlying issues, the consideration of a greater range of options, an emphasis on the emotional and procedural needs of the disputants in addition to their substantive needs, the potential for relationship building and trust promotion and the establishment of a model of cooperative behavior that may be valuable in the future. However, problem-solving negotiation is unlikely to achieve these potentials unless both disputants are committed to the problem-solving process. This will happen when their needs to negotiate a solution with each other and to invest time in the resolution of the dispute are prioritized over any desire to punish or take revenge upon their opponent.

Problem-solving approaches have been readily adopted from negotiation theory into the mediation context. Problem-solving theory has dominated mediation policy and literature.In problem-solving mediation the mediator facilitates a mutual problem-solving approach to dispute resolution. This involves educating disputants about the problem-solving process and guiding them through negotiations in that style. The problem-solving approach separates the people from the problem, focuses on interests rather than positions and encourages the generation of a wide range of options before any decision is made.

In the 1990s, in Europe, new approaches to mediation began to emerge that mirrored a shift from the individualistic world view to a relational orientation. Rather than the focus being on problem-solving or transactional approaches to conflict, a transformative approach has emerged that focuses on relational approaches to conflict. Here, the way parties relate to one another is treated as the source of conflict, rather than their competing interests.

Another relatively recent development in the mediation field is narrative mediation, which focuses on the way parties tell stories about their experiences of conflict. The aim is to find a shared narrative and thereby resolve the conflict between individual understandings. Narrative mediation also approaches conflict from a relational perspective.

Particular practices of mediation in connection with the formal legal system have also developed. Connection with the court system has shaped mediation in new ways. In the court-connected context, it has been claimed that the focus of mediation has often become procedural efficiency and a narrow legal definition of the problem. Further, court-connected mediators are said to adopt a directive approach, hear the parties‟ stories, diagnose the problem, suggest a solution and then try to persuade the parties to accept that solution. An adversarial negotiation style may be adopted to persuade the mediator to support one legal argument over another. Such practices mirror traditional legal processes such as trial and lawyer negotiation. Arrangements and processes for establishing, maintaining and ending the institutional arrangements of affect through which intimacies are legitimately created are supported by confessional experience or cultural taboos sustained by totemic ritual. To the extent that control and regulation over the entire process has become secular, the politics of the modern state legislates to change the nature of the relationships of intimacy. Some changes have emerged from secular interpretations of fundamental rights. To a large extent, political authority may seek to provide progressive change for better equality and protections in different family forms. However, even political authority may be resisted. Human rights law, as well as the higher law of comparative constitutional law, provides important challenges to cultural norms and expectations about questions of sexual morality, intimacy and human dignity [6, p. 122].

They have taken modern mediation away from its origins as an alternative to traditional adversarial approaches to dispute resolution. Such approaches to court-connected mediation practice have been said to reduce the focus on self-determination, choice-making, communication and sharing of perspectives, which are important concepts in the mediation field. In this thesis, these claims about court-connected mediation are tested in the Supreme Court of Kazakhstan.

Formal mediation programmers have emerged in Europe in both the private and public spheres since the late 1970s. The focus of mediation in the private sphere was initially in community disputes, primarily disputes between neighbors. The emphasis was on mediation as an alternative to legal avenues. Mediation was informal, confidential, and responsive to the needs of disputants, flexible, empowering and potentially restorative of the relationship between the parties. Community justice centers were the government funded organizations that pioneered mediation in community, public issues, family and victim-offender disputes Mediation in public institutions is by far the biggest growth area of mediation. Governments have enthusiastically adopted mediation by legislating for its use in family, commercial, administrative, workers compensation and anti-discrimination disputes. Trials of mediation were also conducted in many Kazakhstan courts and tribunals during the 2011th and 2012s. Since the mid-2011th all Kazakhstan courts and tribunals have referred matters to a dispute resolution programmer of some kind, usually to a process described as “mediation”.

The nature of non-determinative processes connected with courts and called “mediation” varies considerably. There are not usually restrictions in legislation, policy, or guidelines, on the style of mediation that may be practiced in the court setting in Australia. Nor are there typically limitations on the roles that might be played by the parties in dispute, the lawyers or the mediator. This leaves scope for a broad range of practices in the court-connected setting [7].

Among the most important issues about gender or sexual identity has been the depreciation of the status of women worldwide. The concern for the equality of women has by implication served to raise the general question of equality and affect in terms of men, women and other variations of gender perspective. This issue of affect and equality has generated fundamental questions about the imposed ascription of identity by culture, society or the state. The critical question is how far should the self's conception of the self be given deference in the ascription of identity by political authority which then allocates rights and obligations. These problems provide a normative challenge of mediating between traditions that are repressive and those that are supportive of a human centered deference to positive emotional values that are compatible with fundamental rights and to develop strategies for change when change is mandated by the moral priority of fundamental human rights values.

The most conspicuous fact of social organization is that human beings identify with and are invariably affiliated with a group of some sort. The reproduction of negative sentiment is about identification, groups and power. If we describe social processes as involving human beings (participants) pursuing values (desired goods, services, honors) through institutions (political parties, corporations, labor unions, colleges, hospitals, churches, etc.), based on resources (bases of power, base values), it will be apparent that institutions are often group-based and specialized to the vindication of basic values. For example, power and ideology find expression in political parties, the wealth interests in commercial actors, the professional concern for health care in the institutions of health care, education in the schools and universities, the skill interest in organized labor and professional groups, as well as the moral concern of religious or faith-based groups.

In the conclusion we would like to note, that in the tradition of Islam, one of the most obvious examples of patriarchy is found in the principle that a husband may unilaterally end a marriage by simply pronouncing three ritual words (talak, talak, talak). This was not a right given to women.

Society places limits on whatever one's feelings are about one's true self. Such feelings, predispositions or orientations cannot be displaced as sexual aggression, predatory sexual practices and the abuse of others. The community and the state seek to protect its vulnerable members who may from time to time be targets of predatory behaviors regardless of the degree of maleness, femaleness or any other aspect of the gender and/or sexual orientation. This is a complex and important discourse. It seeks to understand and mediate between self's perception of the self and the appropriateness of the social and cultural expression of this indicator of personhood. To the extent that the expression of personhood in this sense, invades the boundaries of others by exploitation, coercion, or aggression such conduct must invariably be restrained or proscribed. This is so when those "others", targeted by such conduct are vulnerable and depend on human restraint for their physical and psychological survival and well-being.

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ҚАЗАҚСТАН ХАЛҚЫНЫҢ ҚҰҚЫҚТЫҚ ДӘСТҮРЛЕРІНДЕГІ МЕДИАЦИЯНЫҢ ҚЫЗМЕТІ МЕН ОРНЫ

Аннотация. Қоғамда кездесетін шиеленістердің ішінде заңгерлік шиеленістер әрқашанда өздерінің нақты орындарына ие деп айтуға болады. Ал енді, заңгерлік шиеленістер деп біз өзіне тән объектісі мен субъектісі бар, анықтағыш белгілері бар, сонымен қатар себеп сардарлары бар және белгілі бір заңнамалық қасиеттерге ие шиеленістерді айтамыз. Шиеленістер деп біз екі жақтың арасында болған белгілі бір қайшылықтарды объективтілік іздеуге бағытталған іс-қимылдарды санаймыз. Бұл жерде екі бағыт та өздерінің мүдделерін заң арқылы қорғауға тырысады. Даудамайлардың құқықтық статусы деп біз белгілі жағдайдағы субъектінің іс-қимылдарына тек қана мемлекеттік органдарының руқсаты арқылы берілетін санкцияны айтамыз. Екі субъектінің арасындағы даудың пайда болғанынан бастап олардың осы қайшылықтарды шешуге мүдделілігі қалыптасады. Заңгерлік шиеленістер белгілі бір құрамдан тұрады. Оның ең негізгі құрамы шиеленістің объектісі мен субъектісі. Біздің ойымызша, шиеленістің субъектісі ретінде қандай азаматтар болмасын, шетел азаматтары, азаматтығы жоқ тұлғалар, мемлекеттік, қоғамдық ұйымдар кездесуі мүмкін. Әрбір адамның құқықтың субъекті ретіндегі қасиетіне байланысты қоғамда кездесетін әрбір жағдайлардағы шиеленістер мен даудамайлар құқықтық негізде шешілуге мүмкіндік алады.

Түйін сөздер: заңгерлікшиеленіс, медиация, медиатор, құқықтық дәстүрлер, салт, мотивация, дауласу, заңдық талаптар, құқықтық статус, шиеленіс алдындағы жағдай.

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РОЛЬ И МЕСТО МЕДИАЦИИ В ПРАВОВОЙ ТРАДИЦИИ НАРОДА КАЗАХСТАНА

Аннотация. Юридический конфликт занимает конкретное положение среди различных конфликтов, имеющихся в обществе. Конфликт считается юридическим, если имеются определенные признаками как предмет, объект, субъект, а также мотивация, стороны ведут определенный спор, как правило, конфликт имеет какие-либо юридические последствия. Спор, по сути дела, следует рассматривать, как объективно выраженное противоречие волеизъявлений двух сторон, которое состоит из носящего правовой характер требований одной стороны, противостоящей юридическому требованию второй стороны, что затрудняет реальное удовлетворение этого требования. Под правовым статусом понимается фактическое состояние лица в качестве субъекта права, в соответствии с которым применение принуждения в отношении него возможно только с санкции государственных органов. С возникновения спора о праве у его субъектов появляется заинтересованность в его разрешении. Юридический конфликт имеет свои составляющие, такие как объект и субъект конфликта. На наш взгляд, субъектами конфликта выступают стороны конфликта – физические лица, иностранцы, лица без гражданства, государственные, общественные организации, обладающие правосубъектностью. На основе правосубъектности и происходит взаимодействие друг с другом в процессе конфликта.

Ключевые слова: юридический конфликт, медиация, медиатор, правовые традиции, обычаи, мотивация, спор, юридическое требование, правовой статус, предконфликтная ситуация.

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THE DIGITAL KAZAKHSTAN. THE DEVELOPMEMT OF HUMAN RESOURSES IN EDUCATION

Abstract. The digitalization is strategic priorities of development in all around a world. According to the leading world experts, by 2020 a quarter of the world economy will be digital, and implementation of the digital technologies in economy allowing the state, business, and society to interact effectively. Development of the human resources will create a new generation of patriots with excellent ICT skills. This program is one of the strategic directions of Digital Kazakhstan economy development. Governments can play an essential role in enhancing digital literacy through the country's primary education system. Digital literacy skills lead to stronger creativity, self-expression and improved interpersonal relations, and provide a foundation for the responsible use of technologies.

Some of the main barriers to broadband ICT development are the high prices of the Internet, the lack of an enabling policy environment, high costs of infrastructure, low revenue potential and low digital literacy rates.

Today a considerable number of people uses the Internet, origin and promoting of social networks generally erased age and frontiers of the virtual communication of people. Social communities are one of the most exciting services existing on a network today. One of the successfully implementable tasks of social networks is the combining of users on shared interests. Another task is filling with a network various information. For teachers, the social networks are the set of opportunities – discussion of current problems of education, for example, implementation of new State standard teaching programs, representation in networks of own methodical development, creative pupils works and also the experience exchange. There is a massive number of different judgments whether it is worth "retracting" generally once again children in the virtual communication. The modern IT technologies provide the whole list of tools for communications of teachers with pupils not only in school hours but also behind walls of schools. Abroad mobile means of communications with a class through the program on the smartphone or a pad – pretty favorite thing. The Black Board and Canvas services, known in the USA, integrate schools and campuses. The closest to them in essence and to contents – the School student mobile application which serves as a site for combining of schoolmates together with their class teacher. Education of children of a primary school age develops on an electronic network model more and more active today. Implementation in introductory classes of the computer, mobile devices, and software applications transfers ordinary handling real objects to the virtual graphics space, and internal communication – in remote interaction through services and resources of communication of the Internet, including in social networks. Conclusions had addressed access to information and communications technologies for different groups of children, the importance of digital literacy, online safety concerns and other issues.

Keywords: Internet, social networks, mobile application, primary school age.

Introduction. In recent years, less than 20 percent of U.S. teens report reading a book, magazine or newspaper daily for pleasure, while more than 80 percent say they use social media every day, according to research published by the American Psychological Association.

Our digital lives may be making us more distracted, distant and drained, according to research presented at the annual convention of the American Psychological Association. This study built upon previous research that has shown that more narcissistic people use social more often than less narcissistic people. Virtually no research has been done on how emotional intelligence relates to social media use, according to Konrath.

She and her colleagues analyzed data from four studies of more than 1,200 adult participants and used existing scales that assessed narcissism, empathy, emotional intelligence and emotion recognition. The studies also asked questions about how frequently participants checked and posted on Facebook, Twitter and Instagram.

More empathic people used Twitter less frequently than those who were not as caring and compassionate toward others, the researchers found. Also, people who were more likely to be able to see the world from another's perspective did not spend as much time on Facebook and Instagram. Another interesting finding was that people who scored high on a test of reading others' emotions used Twitter and Facebook less often.

Conversely, more narcissistic people and those who feel overwhelmed by the emotional experiences of others spent more time on all three social media sites.

According to Gartner (the American research and consulting company specializing in the IT markets), an artificial intelligence, digital twins, the thought-over thinking, and the continuous adaptive safety create a basis for the next generation of digital business models and ecosystems of the enterprises.

TOP of ICT of technologies and skills, Gartner

1. Digital Security
2. Internet of Things
3. Speech Interface
4. Artificial Intelligence
5. 3D - the printing
6. Robots
7. Virtual/Expanded Reality
8. Digital Twins
9. Blockchain/Distributed Database
10. Transport

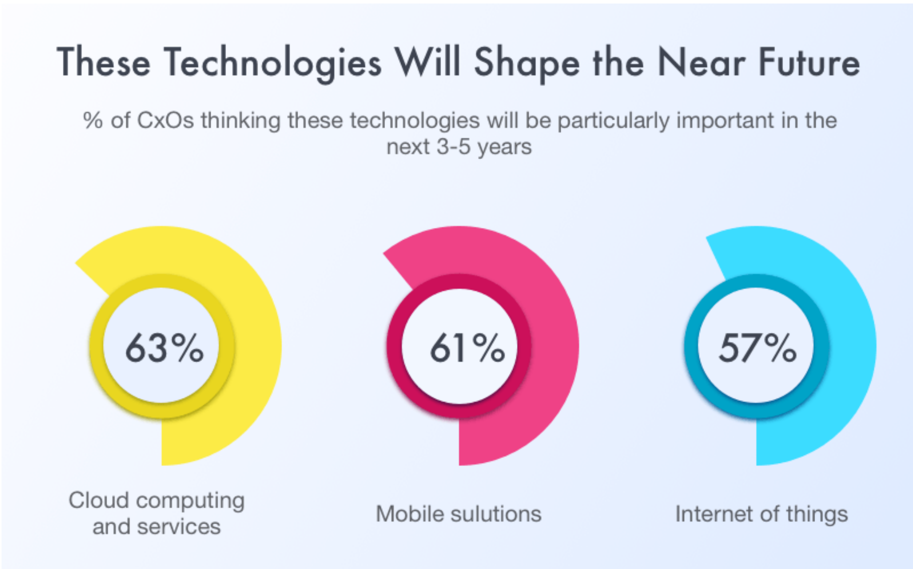

Figure 1 – Technologies of Future

Gartner reads that intellectual digitalization is a basis for future digital business. For the creation of competitive advantage, experts of Gartner mark, principals of the companies shall estimate the central tendencies for determination of opportunities which can be used.

As we know, five directions are the mains in the state program "Digital Kazakhstan". Development of the human capital is one of them. Development of the human capital is the direction of conversions enveloping creation of productive society. Society in which knowledge and skills of the future are cultivated since the youngest years the efficiency and speed of business operation due to automation, and other new technologies increase and the dialog of citizens with the states becomes open and straight-forward.

New requirements to the younger generation imply revising of maintenance of secondary education through the development of creative thinking and technical skills. The digital economy requires presence in the population of the digital skills allowing to use its products. Now the level of population digital literacy is 76,2%, and its growth in the next years is necessary. To create a digital society, it will need to update the education system in accordance with the best world practices.

Emphasis will be placed on the development of creative moreover, critical thinking, as well as the use of modern educational technologies in the learning process.

The development of education is one of the most important aim of the Russia's social and economic policies. Therefore, according to this scenario, the education quality improvement at any level is a priority. Nowadays, the most appreciated method to reach this goal is based on the activity approach (Digital Kazakhstan).

During the latest decades, Russia's process of school modernisation as a key part includes information and communication technology (ICT) implementation. The fast process of Internet technology evolution leaded to the replacement of the "ancient" computer into modern devices, for example tablets or smartphones.

Information society offers new opportunities for the teaching and learning methods upgrading. Those can include a transfer of everyday practices, supported by ICT usage, to education environment. Researchers provide a spotlight on how ICTs can help to improve the quality of education (O.V. Akulova, A.A. Andreev, A.A. Akhayan, N.S. Anisimova, V.I. Bogoslovsky, L.L. Bosova, E.I. Bulin-Sokolova, V.V. Laptev, V.P. Merkulov, T.N. Noskova, G.K. Selevko, V.A. Sitarov, G.V. Tarakanov, A.I. Shutenko, etc.) The research of the latest years has revealed the present-day acute need for innovative education approaches. State Educational Standard sets out the formation and development of comprehensive basic ICT competency as the expected metasubject outcome.

According to Russian and international studies schoolers own and actively utilize smartphones for a broad array of communicative purposes (G.U. Soldatova, D. Holloway, S. Livingstone.) This fact changes the whole design of educational environment. Nevertheless, research on the potential of mobile technologies in school education constitute on case studies and do not describe the situation comprehensively (I.B. Gosudarev, M.A. Grigoryeva, O.B. Golubev, T.A. Makarchuk, O.Yu. Nikiforova, etc.)

Social media is one of the most commonly used types of websites for teenagers. Students use social media services for communication as well as for information search and self-education (O.A. Gurkina, D.V. Maltseva, I.B. Gorbunova, I.O. Tovpich, etc.).

The use of mobile technologies as a unique element of education reform is under active consideration by the researchers (V.P. Andreev, A.S. Voronkin, S.G. Grigoryev, V.V. Grinshkun, O.A. Klimenko, T.N. Noskova, E.D. Patarakin, A.V. Feshchenko, A.I. Shutenko, N. Ellison, S. Manka, etc.) Therefore, the use of mobile and network technology application in the educational activities is being deeply developed due to its high practical importance. However, this is still an underexplored field.

Can technical innovations lead the educational innovation? United Nations Educational, Scientific, and Cultural Organization (UNESCO) are the following: "In a world that is increasingly reliant on connectivity and access to information, these devices are not a passing fad. As mobile technologies continue to grow in power and functionality, their utility as educational tools is likely to expand and, with it, their centrality to formal education." (M. West, S. Vosloo, 2013, p. 42).

These factors indicate the high relevance of the chosen research area-the use of mobile and network technologies in the modern school for upgrading the educational process.

It is shown that during the education in the period of Early–Soviet the central element with the help of which was planned to achieve the desired results was the textbook. In the period of 1960s, the focus has shifted to the upgrading of teaching through the redesigning the lesson (K. A. Moskovenko, 1959). In the 1980s the emphasis was on the optimization of the educational process (Y. K. Babanskiy, 1983), the change in the relationship of teacher and student (S. L. Soloveichik 1976). In the 1980s the emphasis was on the optimization of the educational process (Y. K. Babanskiy, 1983), the change in the relationship between students and teachers (S. L. Soloveichik 1976). During the Post-Soviet period (1990s), educational institutions was diversified as well as subjects programmes, wht leaded to an idea of education individualization (V.V. Serikov, 1994; I.A. Skopylatov, 1994; E.V. Bondarevskaya, 1996; I.S. Yakimanskaya, 1996; and G.M. Anokhina, 2003). Thus, the tasks of modernization of Russian education have been repeatedly revised. At different stages of the development of the education system, the driver of the changes were different actors and processes. Nowadays, the most appreciated method to reach this goal is based on the activity approach (State Educational Plan).

One of the central issues for modernization of education is the formation of innovative mechanisms, which leads to development of education. For these purposes, education modernization process has been reviewed in the innovation theory context. Literature analysis shows there two types of innovation implementation. Top-down innovation has the advantage that the stakeholders set the pace - they set the targets and the objectives and provide the funding. The implementation is left to the appropriate personnel. According to research a significant limitation of top-down innovation is the resistance to change, which leads to a number of difficulties at the stage of its implementation, including misunderstanding and lack of motivation. (V.A. Bolotov, A.E. Volkov, A.G. Kasprzhak, D.V. Livanov, A.A. Fursenko, I.D. Frumin, M. Barber, K. Donnelly, etc.)

According to E. Rogers, the higher the level of centralization and formalization of organization activities, the easier it is to make a decision on innovation implementation and the harder it is to really implement it (E.M. Rogers, 1962.)

On the other hand, there are bottom-up, or grassroots innovations. Generalizing the definitions by different authors (G. Seyfang, A. Smith, 2007; M.F. Hilmi, 2012; E.S. Phelps, 2013), grassroots innovations are rhizomatic (non-linear, chaotic, nonstructured) processes of development, implementation and expansion of novel methods and products happening at various hierarchy levels down to the lowest ones. This innovation type arises as a reaction to external changes.

When considering the formation of the information society and the requirements to change the organization of the educational process at school Informatization of education is described as a tool for modernization. A model has been introduced for the array of external and internal factors influencing the informatization process (A.G. Asmolov, A.L. Semenov, A.Yu. Uvarov, 2010) (figure 1).

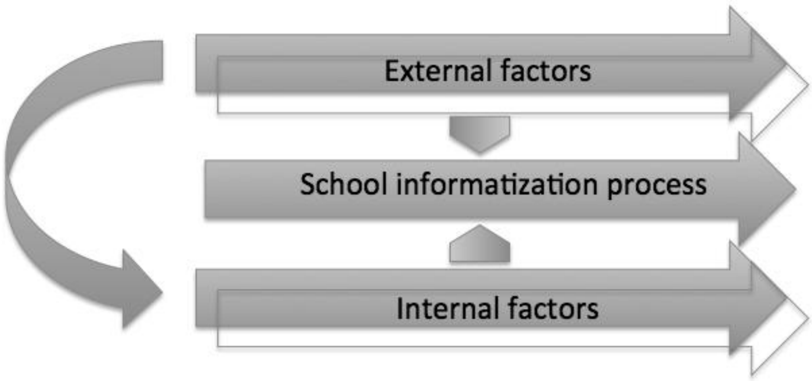

Figure 2 – Inter-relations between external and internal factors of school informatization process

The existence of these factors leads to the possibility of large-scale changes. First, the emergence and spread of new information technologies s inevitable (external factor). Secondly, it is necessary to develop and disseminate new educational technologies based on new information technologies (an internal factor determined by the system and associated with the level of development of pedagogical science and practice, readiness to support innovative processes, the ability to respond to emerging requests).

Key stakeholders interviews were taken to reach an information from a wide range of people – including community leaders, professionals, who have first hand knowledge about the process of education informatisation in Russia (S.M. Avdeeva; E.I. Bulin-Sokolova; V.V. Grinshkun; S.P. Kalashnikov; E.Yu. Kulik; M.E. Kushnir; A.Yu. Uvarov; and D.E. Fishbein).

Since the mid-1980s, Russia has seen a vast number of policy initiatives aimed at fostering various aspects of ICT integration into national learning environments.

The first wave of education informatization went underway in 1980s, when Decree No. 13-XI "On the Reform of General and Vocational Education" was passed in April 1984. As a result of this policy step, Russian schools and universities were equipped with the essential computer infrastructure enabling access to basic ICT. In terms of the curriculum, a new course, "Computer Science," was introduced in secondary schools, and some STEM teachers received special training in IT and computer operation to be able to give appropriate instruction in this new subject. Also, some training in computer basics was organized for teachers in other subject areas as well as for school administrators. At the same time, a number of disincentives and downside factors of various scale and socioeconomic nature dampened this reformative momentum. For one, there was a huge gap between urban and rural schools in Russia; for another, educators themselves would often counter the reform and the ICT transitioning processes it had prompted amidst then meagre awareness of the new role that ICT was soon to obtain as a major competitive driver in technology and human capital. The fall of the Soviet Union embroiled Kazakhstan into situation of persisting socioeconomic disarray where education-related objectives long remained outside the state executives' top-priority agendas. It was not until the late 1990s that education informatization came back to broad public and government attention.

According to innovation theory the first wave of informatization was consistent with the principle of *top-down innovation*: decision-making was centralized at higher levels of the system, excluding lower-level in the change planning process; innovation implementation was a time-consuming and deliberate process. Default of acceptance and lack of cooperation from the educators side was the main barrier for top down innovation implementation. Education system saw a period of reforms which gradually prepared schools for innovation.

The second wave of education informatization, which spanned a period from the late 1990s and through 2010, was marked by a surge in the number of initiatives to facilitate ICT-supported learning at both federal and various regional levels. These were complemented by a series of non-government endeavours run by international foundations and other organizations, such as World Bank, Intel and Microsoft, among others. For educators, training & development programs were deployed that sought to advance ICT literacy within a broader multidisciplinary cohort of instructors, unlike in the first wave of informatization when only limited teacher corps received such IT-focused professional upskilling. The above-mentioned measures to boost ICT integration into the educational perimeter have yielded noticeable enhancements in the overall ICT infrastructure. Thus, schools have been procured with more comprehensive background hardware, including computers and related IT systems, laptops, e-boards and other multimedia, which has facilitated the creation of mobile classrooms, hybrid libraries and media centers with access to various electronic learning resources, etc. In higher education, a number of massive state-run programs have also been implemented to spur sector digitization and ICT-assisted networking for more effective administrative and academic operation. Taking stock of the said period, as noted in the OECD's "Measuring Innovation in Education" report, Kazakhstan has achieved a major progress in transitioning to a digitally supported educational model thanks to the improved availability of computer and internet infrastructure across the country's institutional landscapes (OECD, 2014).

The second wave of Informatization, in comparison with the first wave, was more associated with new electronic technologies. Technology drove the educational process. The second wave of Informatization is also a *top-down innovation* example.

Definition and characteristics of education informatization after 2010 is complicated by the lack of reliable data. In recent years, many schools have been carrying out local programs to expand and renew their ICT infrastructure, which involve procuring modern desktop PCs, server and network equipment, as well as portable and tablet devices that have received growing popularity among an ever-expanding population band in today's settings ofubiquitous mobile communication and networking. These modernization initiatives are typically financed on a multilateral basis, including schools' own funds, parental donations and corporate sponsorship. However, the quantitative metrics, for example number of computers and Internet access speed, do not automatically insure positive attitudes towards the teaching process. According to the IEA Second Information Technology in Education Study (SITES), the extent of ICT use depended not only on school-level conditions, however, but also on national curriculum policies, as evidenced by large differences in the use of ICT among mathematics and science teachers within the same schools in some countries. (E.I. Bulin-Sokolova, 2016).

While computers purchased during the second wave of Informatization become obsolete, school environment is saturated with smartphones. The drivers for changes in teaching and learning in school education are students. The transition of everyday practices related to the use of ICT into education processes leads to its the transformation. This is a bottom-up innovation.

Analysis of the research results, which is the subject of chapter I, showed the replacement of the “ancient” computer into modern devices as tablets or smartphones. The grassroots innovation beetroots out the top of education system, indicate new emerging requirements that society will sooner or later present to education. Thus, *the third wave of Informatization* is brewing, which should bringinformation technologies and approaches used in education into line with the modern needs of society.

In TGU revealed, what groups "VKontakte" are pleasant to gifted school students. Scientific TGU improves the program in search of gifted entrants. The algorithm analyzes groups in a social network of "VKontakte" on which graduates are signed, and reveals, what subjects are pleasant to them. Its accuracy – about 85%. Also, the program learned to determine I.Q., creativity, and motivation of entrants by their subscriptions. The programming team, linguists, and philosophers continue to enhance the program in search of "the" entrant for Tomsk state university. In 2017 while receiving campaign, they looked for in Siberian Federal District potential entrants with obvious interest in the humanities. The program analyzed subscriptions to subject communities of 126 thousand graduates, the accuracy of determination of a profile appeared 82%.Besides, scientists added the program algorithm of detection of gifted entrants on three signs: intelligence, creativity, and motivation. For this purpose, they used machine training in the course of which the computer model masters specific data and in new materials can make out the vital signs with high accuracy.

As primary data for training of the program researchers used results of professional diagnostics and psychological testing this held among Tomsk school students of NOTs «Institute of Innovations in Education» of TGU. The program revealed that school students are signed with the high level of creativity on such groups as "Silence psychology", "The romantic of city suburbs", "Eskiza", "with Art the Shelter of creative people", "Indie Music" and others. Potential entrants with the high level of intelligence select "Literary memes", "FURFUR", "The Question", "Arzamas", "Postnauk", "Typical mathematician" and similar, and with the high level of motivation – groups "Is beautifully told...", "Ideas for life", "the Typical Leader", "FATALIST", "0 calories", etc.

While technologies such as BYOD (Bring Your Own Device) are not welcomed by teachers, analysis of intensity and scope of unauthorized Internet usage during the learning process among adolescent and their academic performance did not give statistically significant correlations.

Speaking about school computer equipment, more than half of respondents (56%) noted that access to school computers or other devices (laptop, tablet, etc.) is limited. Students can visit computer class only in special hours and usually during the “Computer science” course.

Despite the school network does not allow connection, among others, to social media, they have become one of the novel channels for student-teacher connections. A third (33%) of respondents have noted that they are used to writing to their teachers via social media, while 41% of them stated they can also communicate on mobile.

Students with no access to mobile and social network technologies (about 3%); students who use new technologies daily - the dominant group; students who use new technologies for education reason (about 70%).

Three groups of teachers were identified: teachers with no access to mobile and social network technologies are the dominant group; teachers using new technologies randomly group are fewer; and innovative teachers group are fewer still.

School principals demonstrate the following breakdown: administrators supporting innovations are the smallest group; those who banning new technology is the next one; school principals with neutral position (leaving decision to teachers) is the largest group.

Among the barriers to the use of mobile and network technologies in schools pointed out by managers is the lack of modern criteria for assessing the quality of the educational process, tools to promote and support educational initiatives, difficulties in involving teachers with experience in innovative practices. For school teachers, the lack of uniform and understandable rules and recommendations on these practices, as well as special training programs, is a serious restriction on the use of mobile and network technologies in the educational process.

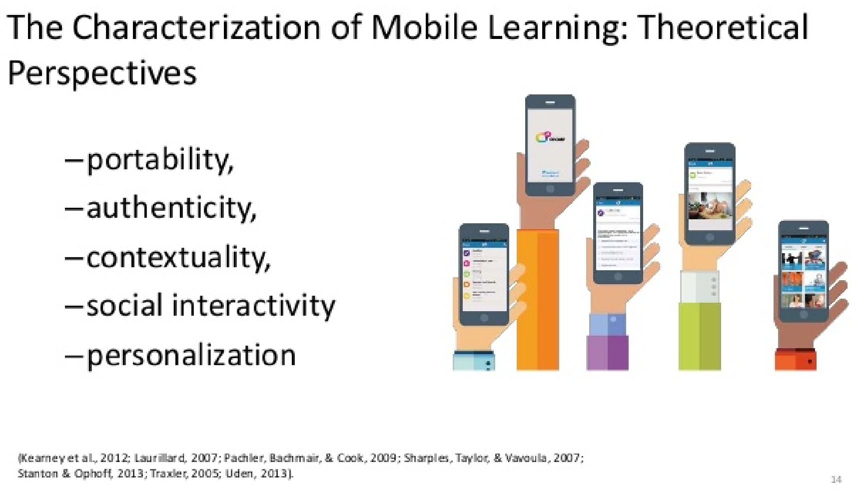

Figure 3 – Mobile Learning

In a nutshell, the undertaken quantitative and qualitative studies prove mass diffusion of mobile and social network technologies in modern school. This fact can be considered as a prerequisite for the appearance of *the third wave of informatization* that will be focusing on implementation of modern ICT in the education process. However, to shift from potential to real prospects of mobile and social network technologies use in school education, certain hurdles must be overcome. The conditions for the successful realization of the potential of new technologies in education include: development and implementation of new approaches and procedures of education quality evaluation, promotion of "grassroots" innovation in education (administrative level); training course for teachers and education staff on contemporary ICT skills (practical level).

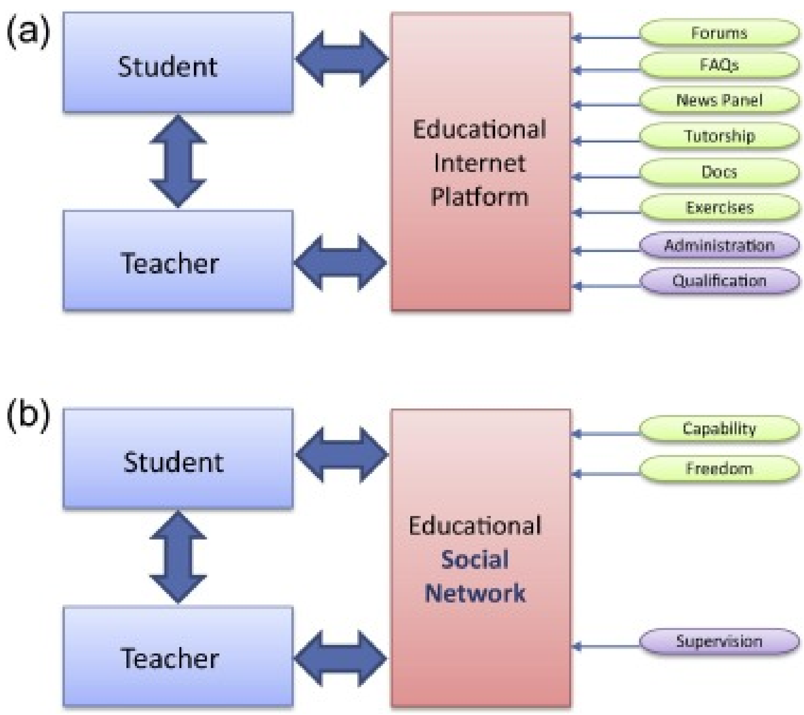

Figure 4 – Use of social networks and mobile application in education

A review of contemporary ICT trends in education has led to the conclusion that most of them are related to mobile and social network technologies. The most renowned trends include

1. Using student mobile devices, e.g. BYOD method when students are able to use their smartphones during classes to search for information, do the test, or watch relevant videos. Another example is interactive electronic books which could beuploaded to mobile devices (L.L. Bosova). The idea is not merely to digitize printed books but to produce an interactive book with the hypertext, video and multimedia embedded.

2. Using social media in learning and teaching (A.V. Feshchenko, O.A. Klimenko, S.H. Kim, S. Manca, M. Ranieri and more). Social networking sites are emotionally attractive and convenient environment for teenagers (M.A. Balandina, 2012). Students satisfy their information needs, while remaining in the environment of Facebook or Vkontakte, they use social media for collaboration and interaction with the peers and teachers.

The review of the literature provided descriptions of social media as a potential new resource, which provides the organization of teacher-student interaction, students' group communication, and increases student's involvement in the learning process. The analysis showed that social media is used in two main ways: 1) as service for support and operationalization of existing forms of teaching and learning, and 2) for upgrading the educational process. Positive aspects of the use of social networks for education are associated with a variety of activities of students, and negative aspect included low ICT literacy and higher workload of teachers. It also confirmed the presence of the «digital gap» between students and teachers.

For students - assignments can be fulfilled at any convenient time, moreoversocial media support self-education, increasing interest in learning (involvement), and develop creative thinking and ICT competences.

For the teachers: less time for individual work (social media allow makingteacher's reply to a certain schooler available for everyone, helping students to analyze the situation autonomously and find the solution for their problem), project activities and collective work.

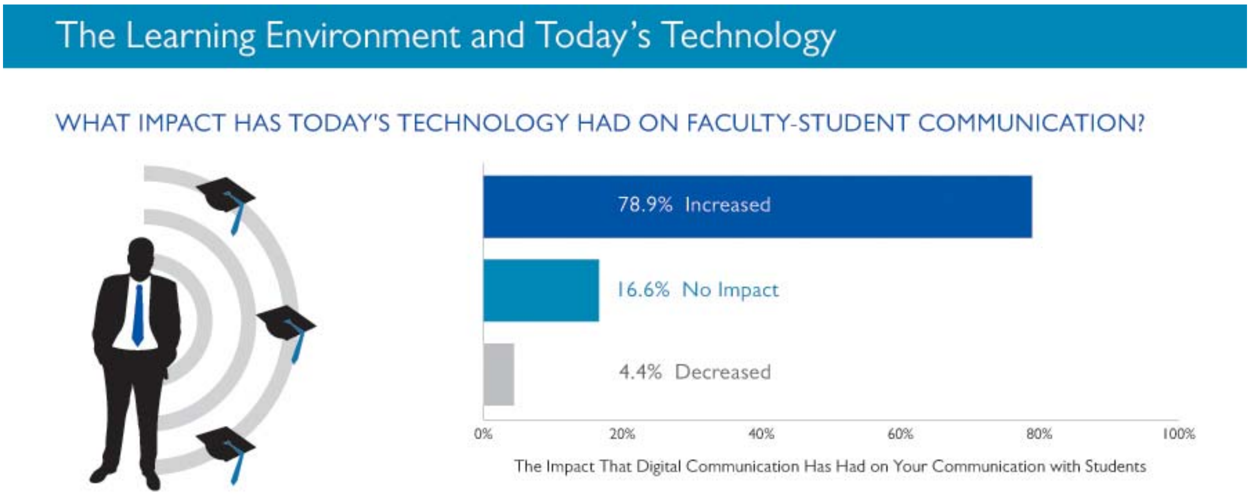

Figure 5 – The Learning Enviroment and Today's Technology

Limitations of social media usage in education include increased teacher's effort mainly caused by lower Internet connection speeds or resource blocking in the educational organization. Moreover, there is no methodology for the teacher's related to social media and mobile technologies; there are no tools to assess the quality of the of education. Students in social media face the risk of distraction.

Based on the results of the study the educational potential of mobile and social networking technologies is:

Realization of one student – one computer model, enabling individual education. Students gain the experience of choosing their individual education track, projecting the current activity to the planned result, getting immediate feedback. this is consistent with the meta-subject results stipulated by State Education Plan.

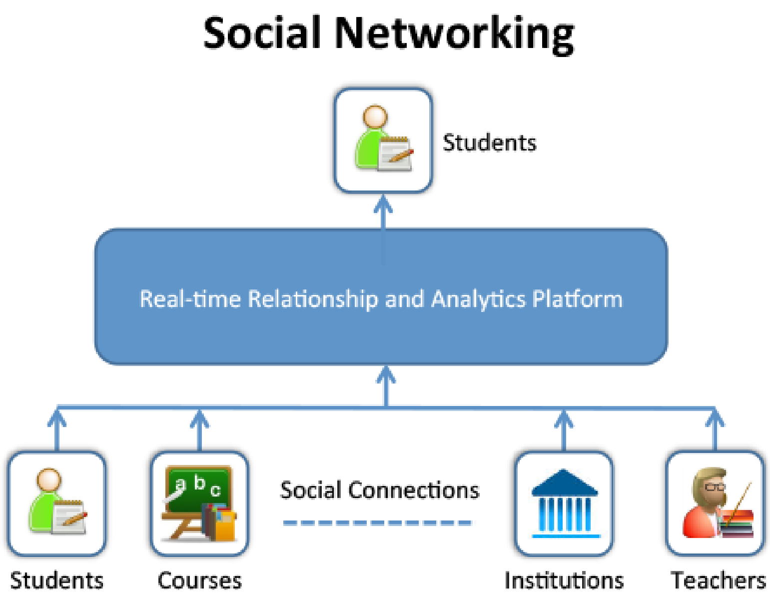

Figure 5 – The Social Networking in Education

Education process can be also individualized by the *emotional attractiveness ofthe environment* realized in the social media. Research suggests that users find anenvironment more attractive if it contains their personal data, enables communication with other users on non-work or non-education topics, and allows distractions (Q. Huy, A. Shipilov, 2012; P.A. Argenti, 2015). Despite the 'distracting' content, an emotionally attractive environment increases involvement in the project or group work, and positively influencing the education results.

Project activity or cooperative learning give students the chance to share theresponsibility to make choices, solve problems among themselves, and deal with conflicts of ideas. According to developmental theory this type of activity consistent with the Interpersonal communication - the leading type of activity for adolescents (D.B. Elkonin, 1971). The project activity involves problem articulation, creation of algorithms, monitoring and evaluation, pivot, est. that stimulates cognitive development.

New technology provides new opportunity for formative assessment. Teachers can create a multi-modal performance that requires students to write, draw, read, and watch video within the same assessment. Other tools allow for automatic grade responses, question-embedded documents, and video-based discussion. In addition to simplifying formative assessment, the use of these tools has been shown to amplify student engagement (Hwang & Chang, 2011). Digital footprint make students progress visible and can help to develop a self-assessment skills.

New technological advances in information and communications technologies can help to build students digital skills.

Referring to the administrative level, the education process quality assessment criteria should be amended. Beside the absence of any proof that the education innovations have valid effect on the academic results (Hattie, 2009), it reasonable to presume that the main goal of mobile and network technology implementation in the education is align the education system with information society needs and opportunities. Education process must be up-to-date and match the interests of modern students. As participants in the educational process, students should have the opportunity to choose educational technologies.

Considering the introduction of mobile and network technologies as innovations, the creation of conditions for the dissemination of "grass-roots innovations", has to be considerate as the support of educational initiatives in the education system for "soft" modernization. Therefore, the strategy should be as it follows: the first step is necessary to identify such practices; the second step is to promote their diffusion (through teacher communities, courses, etc.); the third step to promote their adoption (through the removal of barriers as could be the blocking services of social networks on school computers).

Among the possibilities of modern technology usage for schoolchildren teaching, it is possible to find out a large number of relevant methods.

Development of general rules and methodological recommendations on modern technology usage in schools would 'legalize' usage of the technology by teachers as well as simplify their work. It is necessary to develop and implement training programs for teachers and general courses ideas, as it was done in theprevious stages of informatization, but does not find response in modern programs. It is also important to organize the collection, evaluation and replication of the best pedagogical practices, which will create a "core" of pedagogical ideas, which, thanks to network technologies, will ensure equal access of teachers to new technologies.

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ЦИФРЛЫ ҚАЗАҚСТАН. БІЛІМ БЕРУДЕ АДАМ КАПИТАЛЫНЫҢ ДАМУЫ

Аннотация. Қазіргі уақытта көптеген елдерде цифрландыру дамудың стратегиялық басымдығы болып табылады. Әлемнің жетекші эксперттерінің болжамына сәйкес 2020 жылға қарай әлемдік экономиканың төрттен бір бөлігі цифрландырылады және мемлекетке, бизнес және қоғамға тиімді әсер ету үшін цифрлы технологиялар кең ауқымда және динамикалық процесс ретінде қалыптасады.Адам капиталының дамуын қалыптастыруда жаңа патриот ұрпақтың АКТ дағдыларының меңгеруі Цифрлы экономика даму бағдарламасының стратегиялық бағытының бірі болып табылады.

Білім беру жүйесінің барлық деңгейінде цифрлық сауаттылық басым міндеттердің болып тұр. Мұнымен бірге қазіргі бастауыш білім бағдарламасына кіріктіру және цифрлық шындық трендтері туралы көптеген сұрақтар туындайды. Қазіргі кезде интернет пайдаланушыларының адамдардың көп санын құрайды және әлеуметтік желілердің пайда болуы және кең таралуы адамдардың виртуалды қарым-қатынасының жас ерекшелік және мемлекеттік шекарасын жойып отыр.Әлеуметтік қауымдастық бүгінгі күні желілер арасында қызықты сервистің бір түрі болып табылады. Әлеуметтік желілердің табысты түрде жүзеге асқан міндетінің бірі ортақ қызығушылықтары бар қолданушыларды біріктіру. Әлеуметтік желілер педагогтар үшін көптеген мүмкіндіктер ұсынады – білім беруде өзекті мәселелерді талдау, мысалы жаңа типтңк оқу бағдарламаларын енгізу, жеке өзінің әдістемелік нұсқаулықтармен, оқушылардың шығармашылық жұмыстарын таныстыру, сонымен бірге тәжірибе алмасу. Жалпы балаларды виртуалды қарым-қатынасқа тартудың қажеттілігі туралы көптеген әртүрлі пікірлер бар. Қазіргі IT-технологиялар мұғалімдер мен оқушыларға тек сабақ уақытында ғана емес, сонымен қатар сабақтан тыс уақытта да пайдалану үшін толық нұсқаулықтар тізімін ұсынып отыр. Шет елдерде сыныпта қарым-қатынас құралы сыныпта смартфон немес планшет бағдарламасы арқылы жүзеге асады. Атақты АҚШ-ның BlackBoard және Canvas қызмет көрсетуі кампустар мен мектептерді біріктіреді. Ресейде әзірге ұқсас аналогтар байқалған жоқ. Сыныптастар мен сынып жетекшісін біріктіру үшін «оқушы» кеңістігі қызмет етеді. Электронды-желілік модель бойынша кіші мектеп оқушыларына білім беру белсенді түрде дамып келе жатыр. Бастауыш сыныптарға компьютер, мобильді құрылымдар енгізу және шынайы обьектілерді виртуалды графикалық кеңістікте манипуляция жасап ауыстыру үшін бағдарламалық қосымшалар пайдаланады, ал ішкі коммуникация – Интернет желілерінде, соның ішінде әлеуметтік желілерде қарым-қатынас ресурсы қызмет көрсетудің жойылған өзара әрекеттерді жүзеге асыруға мүмкіндік береді.

Түйін сөздер: Интернет, әлеуметтік желілер, мобильдң қосымшалар, кіші мектеп жасы.

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ЦИФРОВОЙ КАЗАХСТАН. РАЗВИТИЕ ЧЕЛОВЕЧЕСКОГО КАПИТАЛА В ОБРАЗОВАНИИ

Аннотация. В настоящее время во многих странах цифровизация является стратегическим приоритетом развития. Согласно прогнозам ведущих мировых экспертов, к 2020 году четверть мировой экономики будет цифровой, и внедрение технологий цифровизации экономики, позволяющих государству, бизнесу и обществу эффективно взаимодействовать, становится все более масштабным и динамичным процессом. Развитие человеческого капитала формирование нового поколения патриотов с развитыми ИКТ навыками является одним из стратегических направлений развития программы Цифровой экономики.

Повышение цифровой грамотности на всех уровня системы образования становится приоритетной задачей. Вместе с тем возникает множество вопросов о интеграции современной программы начального образования и цифровых трендов реальности. Сегодня интернетом пользуется огромное количество людей, возникновение и популяризация социальных сетей вообще стерли возрастные и государственные границы виртуального общения людей. Социальные сообщества на сегодняшний день являются одними из самых интересных сервисов, существующих в сети. Одной из успешно реализуемых задач социальных сетей является объединение пользователей по общим интересам. Другой задачей является наполнение сети разнообразной информацией. Для педагогов в социальных сетях предоставляется множество возможностей – обсуждение актуальных проблем образования, например, внедрение новых типовых учебных программ, представление в сети собственных методических разработок, творческих работ учащихся, а также обмен опытом. Существует огромное количество различных мнений, стоит ли вообще лишний раз «втягивать» детей в виртуальное общение. Современные IT-технологии предоставляют целый перечень инструментов для коммуникаций преподавателей с учениками не только в учебное время, но и за стенами школ. За рубежом мобильные средства коммуникаций с классом через программу на смартфоне или планшете – довольно таки популярная вещь. Известные в США сервисы BlackBoard и Canvas объединяют школы и кампусы. В России подобных аналогов пока что замечено не было. Наиболее близкое к ним по своей сути и содержанию – мобильное приложение «Школьник», которое служит площадкой для объединения одноклассников вместе с их классным руководителем. Образование детей младшего школьного возраста сегодня все активнее развивается по электронно-сетевой модели. Внедрение в начальные классы компьютера, мобильных устройств и программных приложений переносит привычное манипулирование реальными объектами в виртуальное графическое пространство, а очную коммуникацию – в удаленное взаимодействие через сервисы и ресурсы общения сети Интернет, в том числе в социальные сети.

Ключевые слова: Интернет, социальные сети, мобильное приложение, младший школьный возраст.

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SOCIAL NETWORKS AS REFLECTION OF ACADEMIC PERFORMANCE

Abstract. Development of media and the Internet leads to the fact that educational establishment stops being the only source of knowledge and information for the school student. A flow of information which is obtained by modern pupils it is so massive that the pupil's ability to select and applicate useful information is impossible without the aid of adults. Integration, generalization, the judgment of new knowledge, their coordination with the child life experience from the ability to learn (to teach itself) – here that task, in the decision which school does not have replacement today.The academic progress is that type of pupils' achievements which is often the object of empirical researches. The number of factors which traditionally are considered as predictors of the academic progress of students: the socioeconomic status of the family, self-education time, school environment. According to Colman [Coleman et al., 1966], the social environment of pupils influences their achievements; their environment is also one of the determinants of the academic progress. Scholars describe this effect as the influence of co-education. The growth of classmates achievements affects its educational results. However, even if students were distributed on groups in a casual order, in these groups, they tend to choose to themselves a social environment which will exert a more significant impact on them subsequently, than other members of the accidentally appointed group. The social networks significantly change eventually, especially if it is about networks of first-grade pupils. For example, the pupil can break off the relations with the classmate who receives low marks and to seek to form new communications within the time pupils. The social and economic situation connected with sharp changes in the life of people does relevant problems of harmonious development. Especially problems of success and mental health of children and teenagers in modern society became aggravated.

Keywords: social environment, social networks, internet, academic performance, co-education.

Scientific tools have always played an important role in the scientific progress. The invention of the telescope opened a new vast world of celestial bodies. Observations of the planetary motion laid the foundation of the classical mechanics and gave the rise to physics as a science in the modern sense. The invention of the microscope opened a new vast world of microorganisms and laid the foundation of the modern biology and medicine. Today, we observe comparable changes in the social science. In place of optical instruments are methods of collecting and analyzing digital traces, vast amounts of data made available by the recent development of information technology.

Digital traces allow researchers to see what was previously hidden from them. For instance, educational researchers have long been studying social relationships between students. However, for a long time, the only method for collecting the data on students' social ties was survey. Surveys only allow reconstructing the social network of a small closed group of people. As a result, researchers well understand the social networks of students within one school but know almost nothing about interschool social ties. In contrast, Facebook has information about friendship ties of two billion people. Information about social ties need not necessarily be explicitly indicated, as in the case of friendship on a social networking site. It can effectively be reconstructed from phone calls logs or from information about physical proximity from mobile sensors. The direct access to information about human behavior also resolves the problem of censoredness and social acceptability characteristic of survey answers.

Another advantage of digital traces is a significant reduction in the cost of research. The largest international study on education PISA covers about 500,000 students. Its organization requires a large amount of resources and coordinated effort from dozens of teams in different countries. At the national level, studies with several thousand participants are considered as large. The thesis could be successfully completed with hundreds or even dozens of respondents. Data from social networking sites allow individual researchers to work with much larger samples up to tens of millions of participants. Data need not necessarily to be accessible directly. It was previously shown that various socio-demographic characteristics such as ethnicity, gender or income level could be effectively predicted from tweets, profile images, user posts, or photos of neighborhoods.

Traditionally, social sciences make an emphasis on theories and their ability to explain human behavior while ignoring their predictive power which is often much inferior to natural sciences. This significantly limits the possibility of practical application of such knowledge. One of the reasons for the weak predictive power lies in the fact that social systems and the laws that govern them are too complex to be described by simple variables. For instance, a variable with a few discrete values cannot describe the wide variety of personal characteristics and human behavior even in theory. Today, thanks to big data, one could construct new variables with much greater predictive power. For instance, it has been shown that information about the likes on a social networking site allows to predict various personal traits from sexual preferences to intelligence and parents' divorce. While individual likes do not have much predictive power, together they form a unique digital trace that contains a significant amount of information about an individual.

Thus, the use of digital traces for studying the human behavior is one of the most promising and actively developing areas in the social science. This approach has a great potentiation in the education science as well. In the Russian context, the most promising source of data is the social networking site VK, that is already been used in educational research. VK is of particular interest not only because it provides an access to a vast amount of data but also because of its role in the lives of modern students.

Today, young people are almost always online and spend most of their online time on SNSs. Recently SNSs have become the main source of traffic to other resources of the Internet. In Russia, the largest SNS VKontakte (VK) is named as the main source of information about the country and the world by 70.3% of young people, more than any other source of information. This SNS is also more trusted by young people than traditional media. Thus, VKontakte largely determines the information environment of modern Russian students. That is why it is particularly important to study the nature of this environment and to understand whether it is different for different groups of students.

This work is devoted to the development of methods for mining and analyzing VK data in the context of educational research. These methods are applied to study differentiation of students by academic performance. The need to develop the methods is due to the fact that little is known about the reliability of the data and the potential biases of VK samples and that analysis of big multidimensional data requires special approaches. The differentiation of students on a social networking site is of particular importance in the context of digital inequality.

Theoretical framework. The authors of the concept of digital inequality note that one generalization that emerges from research on inequality in access to information about cultural resources is the differentiation principle. This principle means that at the beginning – when access to a particular resource is limited – the use of this resource remains relatively undifferentiated. When the resource becomes more accessible, its use becomes more differentiated. It is explained by the fact that more-privileged groups find a way to use the resource to extract more from it than less-privileged groups.

The typical example here is education. When access to secondary education became almost universal, most children from the middle and upper classes started to attend universities. At that point, university degrees became the main differentiating characteristic. When higher education became widespread, two groups of universities emerged: mass universities and selective universities, and the main differentiating characteristic shifted from having any higher education degree to graduation from the prestigious university.

The same principle applies to digital resources. In theory, the global network provides all students with equal access to virtually unlimited knowledge. However, as early as the mid-1990s, researchers became concerned about the digital divide between those who have or do not have access to computers (later to the Internet). When the Internet became ubiquitous, the concern was about the second digital gap related to the gap in the level of information literacy and the ability to use all the opportunities that are provided by the Internet. Today, the main focus is shifted to a broader concept of digital inequality, which is understood as the difference in the Internet use (or the use of any other digital technology) between groups of people who have formally equal access to it.

The existing research suggests that there are significant differences in the Internet use between users with different levels of formal education. More educated people often use the Internet for capital-enhancing activities (such as job seeking, seeking for medical or professional advice, and acquiring new knowledge) while lower educated people use it predominantly for entertainment. It was also found that students with low socioeconomic status enroll less often in online courses and if they are enrolled then they successfully complete it less often than their peers.

In most cases, the comparison is made between broad socio-demographic groups (such characteristics as gender, level of education, etc. are analyzed). The information about the use of the Internet is obtained from surveys. In our work, we suggest using much more detailed data namely the information about the academic performance of students and detailed information about their actual behavior on a social networking site. The aim of the study is to develop methods for mining and analyzing VK data and to apply these methods to understand the nature of the relationship between students' behavior on the SNS and their academic

Methodology and design of the study. For the purposes of the study, we developed a software program that performs queries to the VKontakte API and receives a list of all users of a certain age who indicated that they are studying at a given educational organization. The program matches and merges information from user profiles with information about students from the educational organization. After the merge, the data is anonymized and stored for later research.

A direct matching by first and last name allows identifying only a small proportion of the students. That is why we additionally created an extensive dictionary of various forms of the same name (for example, Ivan-Vanya-Vanyusha), and also developed an algorithm for matching names that are written in Latin and Cyrillic. The program searches not only among users who indicated that they are studying in a given educational organization but also among their friends on the social network.

In the case when information about students was not available, we excluded from the sample those users who did not have friends from their own educational organization. This approach allows one to efficiently filter out profiles with inaccurate information.

We use this method to collect four unique data sets that combine educational data with data on the online behavior of students.

The latest sample includes participants of a longitudinal panel study “Trajectories in education and career” who agreed to provide their personal information for research purposes.

To study the relationship between the structure of friendship ties and the structure of educational organizations, we compute modularity Q for partitions of the entire network corresponding to the partition of a school into grades and buildings and the partition of a university into years of studies, educational programs, and campuses. To ensure that observed values of Q cannot be explained by random noise, we use a permutation test. We fixed the structure of a network and randomly permute the attributes of nodes (i.e. school grades, educational programs, etc.). We then computed Qrand for such a random network. Comparison of 10 000 generated Qrand values with Q allows us to compute the significance level for the observed results. To study the relationship between the structure of friendship ties with geographical distances, we analyze the relationship between the probability of the friendship tie between two schools and the distance between them.

To investigate the detailed evolution of social ties within an educational organization, we use information about the interaction between students instead of information about their friendship ties. We split the period of the study into 3-month intervals and then for each of the intervals we built a network of social ties. We assume that the tie between two users exists if one of them gives at least one “Like” to another on VKontakte during this period. We then compute the Pearson correlation coefficient between the academic performance of students and the average academic performance of students connected to them. This approach allows us not only to determine the level of differentiation of social ties by academic performance but also to track its evolution with time.

The level of social ties differentiation on a city scale was estimated by computing a correlation coefficient between the average USE scores of graduates of a school and the average USE scores of graduates from schools with which this school is connected on the SNS. Two schools are considered connected on SNSs if there is at least one friendship tie between their students on such sites. To ensure that any observed effect is not driven by geographical locations of schools, we use a random graph model that preserves the relationship between the probability of a friendship tie between schools and geographical distance between them.

We analyze the interests of VKontakte users using information about their subscriptions to various public pages (groups) on the SNS. We compute the average GPA for subscribers to different pages along with their average age and proportion of females among them. To show that there is a correlation between interests and academic performance, we build a model that can predict academic performance from information about subscriptions. We identify the main components containing information about students' interests and then use them in a linear regression model to predict academic performance.

Main results.

Table 1 – Information about users

PARTICIPANTS	3th	4th	5th
Percentage of students identified	85%	89%	88%
Percentage of students who did not indicate their school	64%	72%	69%
Percentage of students who used alternative forms of their names	39%	36%	29%

Table 2 – Groups of school students differing in the way of presenting their personal data on VK, by gender and academic performance

	Girls ratio	GPA
Identified on VK	46%	3.80
Not identified on VK	48%	3.79
Those who did not indicate their school	48%	3.77
Those who used alternative forms of their names	50%	3.79

Information about friendship ties allows to effectively filter out fake profiles. By one of our estimates, the number of fake profiles could be reduced from 66% to 8% on the “School” sample if users who do not have friends from this school are excluded.

Table 3 – Percentages of identified VK users for different city sizes

Type of city	Females	Males
Rural-type settlement	68%	83%
Urban-type settlement	86%	93%
Astana	83%	87%
Almaty	78%	73%

We show that online social ties of students from an educational organization are differentiated by academic performance, namely that students with similar academic performance are interacting more frequently online. We also find that the level of this differentiation increases with time. We show that this increase cannot be explained by changes in academic performance but rather is explained by rewiring of social ties. Less-similar students break social ties with higher probability and more-similar students create new ties with higher probability. These results are presented in.

We also study the social ties of students on a city scale. We show that the probability of a friendship tie on VK between students from different schools is higher for the schools with similar academic performance. These results hold true regardless of the geographical distance between schools. Hence, schools are segregated in the digital space despite the absence of geographical segregation.

Differentiation of interests in the digital space. We find that students' interests are correlated with their gender (for instance, boys prefer public pages related to football and computer games), age (for instance, older students are interested in graduation examinations) and also with their academic performance. Low-performing students are subscribed to such pages as "Love Horoscope" and "Unorthodox Horoscope" while high-performing students prefer such pages as "Interesting facts" and "The best poems of great poets".

We also show that online interests could explain as much as 25% of the variation in academic performance of students. This is comparable to the percentage of variation that can be explained by the socioeconomic status of students. The gap in educational outcomes of subscribers to different groups (for instance "World Art and Culture" and "Love Horoscope") could be equivalent to two years of formal schooling (table 4).

Table 4 – Names of public pages that contribute most to the academic component of users' interests. Names are translated from Russian. Mean values of subscribers' scores with standard errors (in parentheses) are provided for each of three PISA subjects

Attitudes	Mathematics	Reading	Science
Positive contribution			
WAC (World Arts and Culture)	538 (4.6)	530 (4.5)	532 (4.3)
Science	521 (4.2)	502 (4.1)	516 (3.8)
Best poems of great poets	509 (4.0)	507 (4.0)	508 (3.9)
Science and Technology	507 (4.1)	479 (4.3)	504 (4.0)
Five Best Movies	505 (3.9)	492 (3.9)	503 (3.7)
Negative contribution			
F*CK	473 (3.3)	449 (3.4)	472 (3.2)
Killing humor	471 (5.1)	447 (5.1)	471 (4.7)
Cool Gags	467 (4.9)	444 (5.1)	465 (4.9)
Unorthodox Horoscope	462 (5.1)	450 (5.3)	460 (5.0)
Love Horoscope	450 (5.3)	442 (5.8)	453 (5.2)

These results could be summarized as the following:

– the method we propose allows to extract reliable information from VK and to combine it with educational data; resulting data could be used to study social ties of students and their interests;

–_the structure of online friendship reproduces the structure of educational organizations; the social proximity in the digital space is closely related to the geographical proximity; the probability of a friendship tie between students from different schools declines with geographical distance following power law;

– social ties of students are differentiated by academic performance in the digital space; students with similar performance create ties with higher probability and students with dissimilar performance break ties with higher probability; the students from similar performing schools are more often connected on a social networking site regardless the geographical distance between schools;

– students' interests are differentiated by academic performance in the digital space; the gap in educational outcomes of subscribers to different public pages could be equivalent to two years of formal schooling.

Conclusion. For the purposes of this work, we use only publicly available information from the social networking site. The VK team confirmed to us that this data can be used for research purposes. The matching of VK profiles with information about students was done automatically, after matching the data was anonymized and later used for analysis only in this anonymized form.

It is important to note that new sources of data not only opens up new opportunities for researchers but also raise new ethical questions. For instance, the notion of informed consent requires special attention. By accepting terms of service users of social networking sites agree that information about them could be accessed by third parties and used for a variety of unspecified purposes. However, it is not clear if such consent could be considered as informed. Especially considering the fact that terms of services are rarely read and if read then users may still not fully understand all the consequences of their consent. For example, it was shown that digital traces allows to effectively predict information that users did not disclose and may prefer not to be known by others. Despite the appearance of the first ethical guidelines this field is still largely a grey zone and requires additional attention from the research community.

We have conducted the first large-scale study that combines detailed information about the behavior of students on VK with educational data. We introduced methods that could increase the reliability of VK data and provided estimates for sample biases. We introduced a novel approach to studying the evolution of students' social ties that did not require to conduct expensive longitudinal studies. We showed how publicly available information from SNSs could be used to infer information about students' interests and that this information could have a large predictive power in respect to various students' characteristics including their age, gender, and academic performance. These results are important for further educational research because our methods could be adopted by other researchers and have already been used in various works.

For the first time, the structure of students' friendship ties have been studied on a city scale and the relationship between inter-school friendship and geographical distance has been revealed. We also studied the evolution of social ties of students within educational institutions and showed that the differentiation of these ties by academic performance increased with time. We explained the mechanisms behind this phenomenon with a simple model. We showed that there was a differentiation of students' online interests by academic performance and, for the first time, provided an estimate of the gap in educational outcomes between subscribers to various public pages.

We showed that social ties of students and their online interests had a large predictive power in respect to academic performance. The variables that were constructed by us explained as much variation in educational outcomes (for individual students and for whole schools as well) as the socioeconomic status measured by traditional indexes such as the index of economic social and cultural status (ESCS) used by PISA. This allows one to use constructed variables for operationalization of social and cultural capital of students (at least for its digital dimension). Traditional indexes include such variables as parents' level of education and number of books at home. Such variables have a low resolution (e.g. parents' level of education) or disputable face validity in the modern world (e.g. a number of books at home). Another advantage of our approach is that it shifts focus from family characteristics to characteristics of students themselves.

It is important to note that our results do not give an answer to the question of whether the observed differentiation leads to amplification or reproduction of inequality. We also do not study any effects that families might have on the observed differentiation. Further research might seek answers to these important questions.

Our results may have implications for the practice of education due to the important role that SNSs play in the life of modern students. The main component of the SNS is a newsfeed that is constructed from information posted by friends and from subscriptions to various public pages. We showed that both of these sources are differentiated by academic performance. It means that everyday digital flow of information is fundamentally different for students with varying academic performance. This fact should be taken into account by teachers in their everyday practice. The digital environment of students is out of the control of traditional pedagogical tools; however, teachers could influence it. For instance, one of the main features of modern SNSs is recommendation algorithms that suggest new information based on the history of users' behavior. Our research showed that this might lead to information bubbles of horoscopes and cool gags for low-performing students. Teachers, however, might ask their students to find some educational information on SNSs or elsewhere on the Internet. This student activity will lead to digital traces that later could be used by recommendation algorithms to show students new information that might be more enriching than information that would be shown without intervention. Development of similar pedagogical interventions along with studying of their potential impact may be a logical continuation of our work.

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ӘЛЕУМЕТТІК ЭКОНОМИКА – АКАДЕМИЯЛЫҚ БІЛІМ БЕРУДІҢ ДАМУЫНЫҢ НЕГІЗГІ ФАКТОРЫ

Аннотация. Халықтың өмірін түбегейлі өзгертетін ғылым мен техниканың қарқынды дамуы, жаңа ақпараттық технологиялардың пайда болуы адамдарға жаңа ақпаратты үнемі іздестіруді және игеруді, біліктілікті арттыруды, жаңа мамандықтарды меңгеруді қажет етеді. Үздіксіз білім шындыққа айналады және адамның өміріне өте қажет. Бұқаралық ақпарат құралдарының және интернеттің дамуы білім беру мекемесінің оқушы үшін білім мен ақпараттың жалғыз көзі болуын тоқтатады. Қазіргі білім алушылардың алатын ақпарат ағыны соншалықты зор, оны таңдау және оны өз қызметінде қолдануда бағдарлау мүмкіндігі ересектердің көмегінсіз мүмкін емес.

Жаңа білімді интеграциялау, жалпылау, меңгеру баланың оқу қабілетінің қалыптасуы (өзін-өзі оқыту) негізінде өмірлік тәжірибесімен байланыстыру – бүгінгі мектептегі ешнәрсе алмастыра алмайтын міндет. Бастауыш білім барлық жалпы және кез келген кәсіби білімнің негізі болып табылады. Бастауыш мектептегі білімнің жетістігі көп жағдайда адамның тағдырын, оның болашақ өмірін айқындайды, өйткені бастауыш білім беру әдетте жасына қарай, адамның жеке тұлғасы негізінде қалыптасады. Көптеген эмпирикалық зерттеулерде оқушылардың әлеуметтік ортасы олардың академиялық нәтижелеріне әсерін тигізді, ал ең табысты құрбыларының әсері әлдеқайда күшті болады. Адамдармен, ересектермен немесе құрдастарымен араласудың жеке тәжірибесі баланың жеке басының дамуы мен сана-сезімінің қалыптасуына негіз болып табылады. Кіші жастағы оқушы бұл тұрғыдан аз зерттеледі және жеке тұлғааралық қарым-қатынас дамуының генетикалық желісінде ашық кезең болып қала береді. Дәстүрлі түрде білім беру қызметі осы жастағы балаға жетекші болып саналатындықтан, осы жас кезеңіне қатысты зерттеулер ең алдымен онымен байланысты психологиялық қабілеттерін зерттеуге бағытталған: баланың танымдық мүмкіндіктері, оқу іс-әрекетінің компоненттері, рефлексия және т.б. Дегенмен, сабақта әңгімелесуден басқа, жастар өздері өте күрделі тұлғааралық қарым-қатынасқа түседі және осы қатынастардың психологиялық ерекшеліктері кем зерттеледі. Әлеуметтік желілер балалар арасындағы қарым-қатынасқа арналған жаңа алаң болып табылады, мұнда кіммен және қандай балалармен қарым-қатынаста болатынын білуге болады.

Түйін сөздер: әлеуметік орта, әлеуметтік желі, интернет, академиялық үлгерім, бірлесе оқыту.

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СОЦИАЛЬНАЯ СРЕДА КАК КЛЮЧЕВОЙ ФАКТОР РАЗВИТИЯ АКАДЕМИЧЕСКОЙ УСПЕВАЕМОСТИ

Аннотация. Стремительное развитие науки и техники, создание новых информационных технологий, коренным образом преобразующих жизнь людей создает необходимость в постоянном поиске и усвоении новой информации, повышении квалификации, овладении новыми профессиями. Непрерывное образование становится реальностью и необходимостью в жизни человека. Развитие СМИ и сети Интернет приводит к

тому, что образовательное учреждение перестает быть единственным источником знаний и информации для школьника. Поток информации, который получают современные учащиеся настолько огромен, что умение ориентироваться в ее отборе и применение в своей деятельности невозможны без помощи взрослых. Интеграция, обобщение, осмысление новых знаний, увязывание их с жизненным опытом ребенка на основе формирования умения учиться (учить себя) – вот та задача, в решении которой школе сегодня замены нет. Начальное образование – это фундамент всего дальнейшего общего и любого профессионального образования. Успешность обучения в начальной школе во многом определяет судьбу человека, его будущую жизнь, поскольку именно в том возрасте, в каком обычно проводится начальное образование, формируются базовые основания личности человека. В многочисленных эмпирических исследованиях было показано, что социальное окружение учащихся влияет на их академические результаты, причем влияние наиболее успешных сверстников гораздо сильнее. Опыт межличностных отношений с другими людьми, взрослыми или сверстниками, является фундаментом для развития личности ребенка, становления его самосознания. Младший школьный возраст наименее изучен с этой точки зрения и остается открытым периодом в генетической линии развития межличностных отношений. Поскольку ведущей в этом возрасте традиционно считается учебная деятельность, то исследования, касающиеся данного возрастного периода, были направлены преимущественно на изучение психологических способностей, связанных с ней: познавательных способностей ребенка, компонентов учебной деятельности, рефлексии и т.п. Но, помимо общения на уроке, младшие школьники вступают в достаточно сложные межличностные отношения между собой, и психологические особенности этих отношений остаются менее изученным. Социальные сети являются новой площадкой общения детей, и здесь особую актуальность приобретает то с кем и как дети общаются.

Ключевые слова: социальная среда, социальные сети, интернет, академическая успеваемость, сообучение.

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THE MODERNIZATION OF EDUCATION IN KAZAKHSTAN: TRENDS, PERSPECTIVE AND PROBLEMS

Abstract. The purpose of current reforms in an education system – ensuring its high-quality transformation in the conditions of the market economy within globalization. Reforming of education demands creation of new legal, scientific and methodical, financial and material terms and adequate staffing for development of this process from the preservation of the positive potential which is saved up in this sphere. According to Nazarbayev «100 concrete steps» education should be one of the crucial areas of development. In particular, the President of Kazakhstan spoke about the improvement of the quality of the human capital from the standards of the countries of OECD. According to the large-scale international studies TIMSS and PISA, Kazakhstan students demonstrate high results at subject mastery level, but they are much less able to cope with tasks embedded in non-mathematical settings. The pupils own subject contents at quite a high level but cope with the tasks loaded with contextual information much worse. The use of a real-life context in school education could be a source of a wide range of opportunities both for deeper mastering of subject and for the developing cognitive skills. In a number of studies it has been shown that the use of a real-life context in education contributes to problem-solving skills, helps students apply gained in class knowledge to real-life everyday life and increases their motivation for learning.

Keywords: primary education, modernization, the real-life context, functional literacy, PISA, TIMMS.

Research Problem. The current trends in the education of the Republic cause the necessity of reconsideration of their role, functions and a place in the general education system, elaboration of new approaches in their further development.

The highly effective education system is one of the significant factors in providing a steady rise of the national economy and the Kazakhstan society. The purpose of the new economic and social reforms in an education system of our state – ensuring its high-quality transformation in the conditions of the market economy within globalization. Reforming of education demands creation of new legal, scientific and methodical, financial and material requirements and adequate staffing for deepening and development of this process from the preservation of the positive potential which is saved up in this sphere.

It is possible to carry out a qualitative education reform in the conditions of dynamic social and economic changes in society only in the presence of detailed worked strategy considering as the real situation which developed in education, the accruing tendencies, and the operating relations, and possible ways of future development of society and state.

Development of the program is dictated by the need for changes in the organizational and economic, substantial and methodical, legal and social and psychological relations which developed in education. It along with the existing state and departmental programs in education and its new standard and legislative providing will make an organizational basis of realization of public policy in education.

In the President's book of Nursultan Nazarbayev to the people of Kazakhstan "Kazakhstan way-2050: The uniform purpose, uniform interests, the uniform future" it is paid particular attention to education improvement of quality. The modernization of education is one of the steps which Kazakhstan has to pass on his way to enter into number 30 of the most developed countries of the world.

In the conditions of modern dynamic development and the global competition from education, it is required that it was qualitative and continuous throughout all life. Therefore the task of mastering modern techniques and programs of training, an increase of the level of teaching, training in demanded knowledge and skills, such as three - language policy, (Kazakh, Russian, English), professional preparation, analytical thinking is set for the Kazakhstan education system. We should carry out high-quality reforming of all system of knowledge acquisition which result has to be an exit to the international standards of education. Introduction at all levels of training of the principle of duality that will promote fixing at young people not only theoretical knowledge but also practical skills and abilities of work on the production, including hi-tech and innovative character is necessary.

"Modernization of an education system in Kazakhstan is expedient on three main directions: optimization of educational institutions; modernization of teaching and educational process; increase of efficiency and availability of educational services", – social modernization of Kazakhstan is told in article of the President of the Republic of Kazakhstan Nursultan Abishevich Nazarbayev ": The twenty steps to society of general work", published in official mass media.

According to President Nazarbayev, within optimization, it is necessary to strengthen a continuous vertical of education. It is crucial to restoring logical interrelation of all types of "age" education as full elevator: preschool, initial, average, professional, the highest and post-high school.

Thus Nursultan Abishevich Nazarbayev emphasized that it is impossible to allow essential gaps as the educational services provided by private and public institutions of education. The education system has to remain nationwide.

He noted that, first, it is necessary to take measures for improvement of the quality of the management case in the system of secondary education. Secondly, it is essential to adjust control of observance of the state educational standards at private schools, colleges, and higher education institutions, including the international.

The state program of development of the Republic of Kazakhstan for 2011-2020 is a new round of increase of competitiveness of education, construction of the human capital by ensuring availability of quality education to a steady rise of the economy.

One of the strategically essential directions of modernization of the Kazakhstan education is a transition to the 12-year model of training. The Ministry of Education revises the state general education standard of 12 years' education and develops training programs, textbooks for the 9th experimental classes within the transition to 12 years' training.

Urgent question on the agenda, there is a development and examining textbooks. Expertize of 831 books and EMB is carried out, from them it is recommended to use in educational process 756. Now the experimental integrated training programs in 15 subjects are developed. The Ministry of Education and Science of Kazakhstan together with International Bank for Reconstruction and Development realizes the project on modernization of system of technical and professional education (further – TPE) according to inquiries of society and industrial and innovative development of the economy, integration into world educational space.

Nursultan Nazarbayev charged to enter stage-by-stage introduction of 12 years' education, updating of standards of school training for the development of functional literacy, and also the introduction of per capita financing in high school and creation of the system of stimulation of successful schools.

According to the State programme of education and science development in 2016-2019, the transition to 12 years' education is the main priority. The full process will take four stages: since 2016 of the first classes; since 2017 – the second, fifth and seventh classes; since 2018 – the third, sixth, eighth and 10th classes; since 2019 – the fourth, ninth, 11th and 12th classes. In 2015 the necessary state standard of education (SOSE) of elementary school was approved.

Since September 1 approbation of GOSO of primary education, textbooks and the educational and methodical complex (EMC) in the first classes of 30 pilot schools of the Republic of Kazakhstan began. Since September 1, 2016, the first classes overall country passed to training according to the program of the 12-year school.

Thus, the transition to the updated content of education began. From the first class entered the new subject "Natural sciences" (fundamentals of natural sciences) and from the third class – "Information and communication technologies." It should be noted that since the same year the first classes of schools started studying five days in a week. Scientists already scientifically proved that at the reduction of the duration of educational week productivity of training increases. GOSO from secondary, general secondary education is provided by the introduction of 12 years' teaching and a three-language policy.

Trilingual training in Kazakhstan will be entered in 2018 and only within the senior classes. It is meant just in the 10-11th courses in studying subjects which pupils will choose.

The use of a real-life context in school education could be a source of a wide range of opportunities both for deeper mastering of subject and for the developing cognitive skills. In a number of studies it has been shown that the use of a real-life context in education contributes to problem solving skills, helps students apply gained in class knowledge to real-life everyday life and increases their motivation for learning [Cognition and Technology ..., 1990; Boaler, 1993; Brenner, 1998; Chapman, 2006; Freudenthal, 1973; Gravemeijer, 1994; Pilot, Bulte, 2006].

According to Nazarbayev "100 concrete steps" education should be one of the crucial areas of development. In particular, the President of Kazakhstan spoke about the improvement of the quality of the human capital from the standards of the countries of OECD.

According to the large-scale international studies TIMSS and PISA, Kazakhstan students demonstrate high results at subject mastery level, but they are much less able to cope with tasks embedded in non-mathematical settings. These results seem to be true both for mathematics and science. To solve PISA tasks formulated in the context of everyday life, it is necessary to have the modeling skills - that is, to be able to build a mathematical model of the proposed daily situation [PISA 2012 Assessment…, 2013]. Thus, relatively lower students' results in PISA compare to student's results in TIMSS may indicate, that students in Russia experience difficulties to apply gained in school knowledge in a real-life context.

Such the gap in the students' TIMSS and PISA results in Kazakhstan could be explained with the fact how education is organized in Kazakhstan [Bolotov et al., 2012; Kasprzhak and others, 2005]. That is, it was shown that teacher get insufficient methodological support for the use of real-life context in his subjects at school [Egurova, 2014; Tyumeneva et al., 2015].

It is important to note that the problem identified on the TIMSS and PISA data is relevant for several school disciplines such as chemistry, biology, physics and mathematics.

Government standard for education in primary and secondary school emphasizes the growth of "a value of mathematics and computer science in the daily life of a person". That is, a person should be able "to model real-life situations in the language of algebra, to study the constructed models by using the algebra conceptions, to interpret the obtained results" and "to apply the concepts, results, methods for solving practical problems and problems from related disciplines". The necessity to develop the abilities of students to use school knowledge in everyday life is emphasized in the "Fundamental core of the content of general education" as well.

Literature Review. The variety of teaching practices towards real-life context, word problems and related to them effects for the students' achievements are widely studied in the literature. The most widely these questions are considered within the framework of the theory of situational learning [Lave, 1988; Lave & Wenger, 1991; Greeno, Smith, & Moore, 1992], as well as in the context of the transfer of knowledge [Lehman, Nisbett, 1990; Gick and Holyoak, 1980; Bransford et al., 1999]. As Russian literature concerns, learning in context is mainly considered within the framework of vocational education and higher education [Verbitsky, 1991]. Recently, issues of the learning in a context is discussing within a competence-based approach to education [Verbitsky, 2016]. A large number of works have been devoted specifically to the use of real-life context in math education: V.V. Firsova, I.M. Shapiro, M.V. Egupova, J. Boaler, L. Verchaffel, E. De Corte, as well as dissertations, for example, L.E. Haimina, V.P. Kizilova, N.V. Reshetnikova.

Following aspects of using a real-life context in education are studied: teaching practices [Greeno et al., 1997; Lange, 1996; Boaler, 1993; Chapman, 2006] and teachers' beliefs [Meirink et al., 2009; Thompson, 1992; Stipek et al., 2001]. However, a little attention has been paid to a connection between the way of working with a problems' context and a content of problem. Next, teachers' beliefs about the possibility to use a real-life context in education in Kazakhstan have not been explored yet. Finally, the use of a real-life context in math education in Kazakhstan has not been considered from an international perspective. Thus, the small numbers of empirical studies devoted to these questions inspired the decision to explore this topic.

Primary education (Grades 1 to 4) – This level is provided in primary schools, lower secondary schools that include the primary level, and secondary schools that include all three levels of education. The goals of primary education are the following: form children's personalities; develop their individual abilities; instill a positive attitude toward education; develop strong literacy, numeracy, and language skills; encourage self-realization; and teach behaviors that will help children master subsequent education programs in basic secondary school.

In order to monitor student performance in general educational programs, education organizations conduct ongoing and interim assessments. Education organizations independently determine the method, order, and frequency of assessments. Ongoing assessment of student performance is conducted by teachers in all school subjects. Interim assessments are administered after the completion of the school year and before May 31. Education organizations set a list of subjects in accordance with their own education programs and curricula, which are based on the State Mandatory Standards for General Secondary Education.

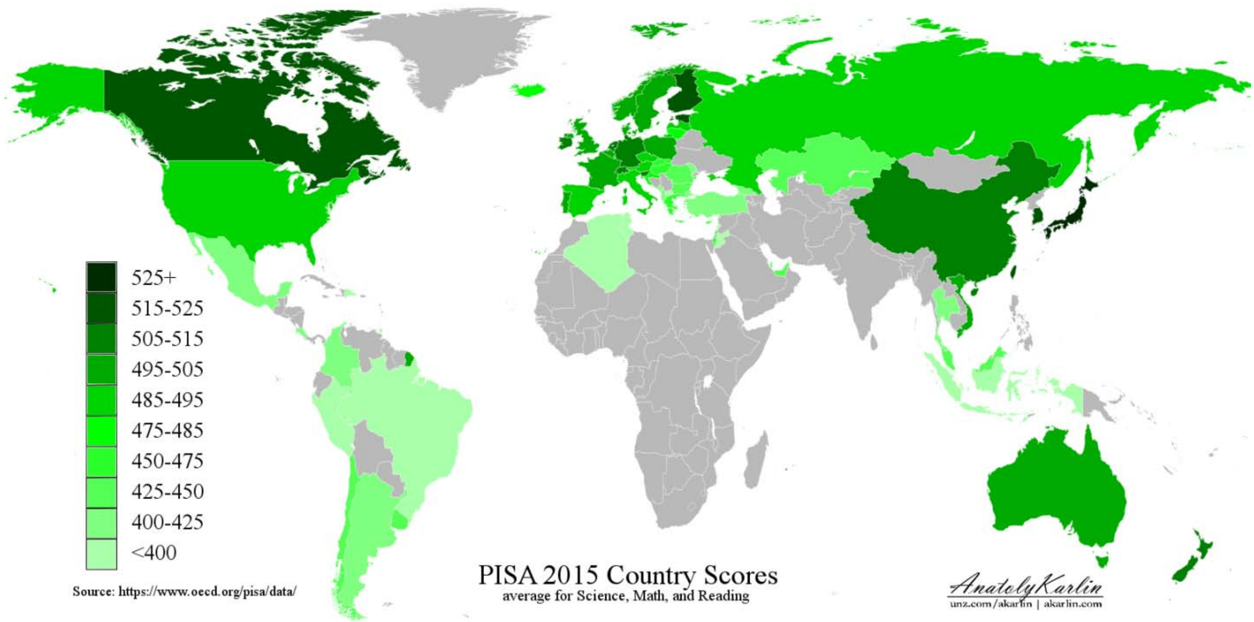
Objectives of the Research.

The aim of the dissertation was to analyze the use of real-life context in teaching at primary and secondary school level in Kazakhstan and to consider the results from an international perspective of using real-life context at school.

The mixed-method design was chosen to conduct that research.

In order to answer the *first group of research questions*, there were employed datasets of two large-scale assessment TIMSS and PISA, and one panel from a longitudinal survey TrEC.

Main results. In order to answer *the first group of research questions* the datasets of TIMSS 2016, PISA 2015 and TrEC were analyzed. First, according to TIMSS 2016 data, it was shown that mathematics teachers in Russia and in foreign countries devote a comparable amount of time to many math teaching practices, including working with real-life context. However, in Russia, students at the 8th grades are much less likely to meet a task that requires more independent problem-solving activity (solving complex and unfamiliar problems that do not have an obvious method of solution) compare to peers in other countries. And, at the same time, they are much more likely to perform tasks on reproductive activity (apply facts, concepts, and procedures to solve routine problems). As for math test, Russian students more often need to solve problems on memorizing rules, procedures, and facts than their peers in foreign countries. It is important to note, that the real-life word problems tasks were presented in math tests in Russia with the same frequency as in foreign countries. Thus, in many cases, teachers in Russia use real-life context in teaching mathematics to the same extent as teachers in other countries.



The result of PISA 2015

However, the results of the international study of PISA 2015 revealed quite opposite results: students in CIS are more familiar with the tasks and concepts that can be attributed to formal mathematics, rather than to applied mathematics. For example, the 9^{th} students in CIS noted that they more often work in math lessons with concepts from algebra (quadratic and exponential functions) and geometry (vectors, polygons), solve equations, than with real-life word problems. Compare to other countries the frequency of formal math problems is one the highest among them.

The Organization for Economic Cooperation and Development has released the influential PISA rankings based on tests taken by 15-year-olds in more than 70 countries, including Kazakhstan. In total over 500,000 15-year-olds took part in the PISA 2015. Kazakhstan was represented by 5,780 15-year-old schoolchildren and students from 16 regions of the country (189 schools and 27 colleges). The OECD rankings doesn't rank countries by points, instead, it highlights the high-achieving education systems. Compared to the 2012 results, Kazakhstani students demonstrated progress in maths (28 points), reading (34 points) and science (31 points). It became possible after Kazakhstan launched the National Action Plan on the development of functional literacy of schoolchildren on instruction of Head of State Nursultan Nazarbayev and took steps to update the content of secondary education. The Program for International Student Assessment (PISA) provides education rankings on the basis of international tests taken by 15-year-olds in maths, reading and science. The tests are taken every three years. It should be noted that Asian countries have been dominating the rankings for the past couple of years with Singapore at the top.

Results of TIMMS survey 2016

#	Country	Math	Reading	Science	Mean	"IQ"
1	Singapore	564	535	556	551.7	107.8
2	Hong Kong (China)	548	527	523	532.7	104.9
3	Japan	532	516	538	528.7	104.3
4	Macao (China)	544	509	529	527.3	104.1
5	Estonia	520	519	534	524.3	103.7
6	Canada	516	527	528	523.7	103.6
7	Chinese Taipei	542	497	532	523.7	103.6
8	Finland	511	526	531	522.7	103.4
9	Korea	524	517	516	519.0	102.9
10	B-S-J-G (China)	531	494	518	514.3	102.2
13	Germany	506	509	509	508.0	101.2
21	Australia	494	503	510	502.3	100.4
22	Viet Nam	495	487	525	502.3	100.4
23	United Kingdom	492	498	509	499.7	100.0
28	Russia	494	495	487	492.0	98.8
31	United States	470	497	496	487.7	98.2
32	Latvia	482	488	490	486.7	98.0
44	Kazakhstan	460	427	456	447.7	92.2
52	Turkey	420	428	425	424.3	88.7
63	Georgia	404	401	411	405.3	85.8
73	Dominican Republic	328	358	332	339.3	75.9
	OECD Average	**490**	**493**	**493**	**492.0**	**98.8**

The latest Timss makes better reading for Russia which moved from 10th up to 7th in the primary maths table, stayed at 6th in secondary maths, climbed from 5th to 4th in primary science and stayed at 7th for secondary science. Kazakhstan also shot up the tables – from 27th to 12th place in primary maths, 17th to 7th in secondary maths, 32nd to 8th in primary science and 20th to 9th in secondary science.

Nowadays Kazakhstan faces a formation of the new education system which focused on world educational practice. This process is initiated by necessary changes in the pedagogical theory and practice of teaching and educational process. The teacher jobs require new skill as the ability to find a right pedagogical method in a wide range of modern, innovative approaches and create a valuable training material of the new generation. This aspiration of reaching all students spans disciplines, age levels, and all varieties of institutions. Most teachers do so out of a genuine love for their subject and a desire to share the wonder of their chosen field with others. Science teaching is no different than other disciplines in this respect. However, try as we may in science, the lack of diversity apparent in the statistics of who chooses to pursue scientific disciplines professionally suggests that we still have much to learn about how to reach all students.

In the last 20 years, international surveys assessing learning in reading, mathematics, and science have been headline news because they put countries in rank order according to performance. The three most popular reviews are TIMSS, PISA, and PIRLS. The main difference between TIMSS and PISA is the type of sample and focus of research. Pupils of the 4th and 8th classes take part in TIMSS. Only 15-year-old pupils of schools (7-12 grades) and colleges participate in PISA. TIMSS measures the academic knowledge (What? Where? When?), 80% of the TIMSS tasks are directed to the reproduction of culture. PISA measures functional competences - the ability to effectively apply knowledge in various life situations, to logically think and draw valid conclusions (Why? What for? As?) to interpret information schedules and charts, etc. Our teenagers know the school program in biology, but don't understand what GMO is. They are not wrong in calculations but have problems with statistics... Recently was published results of PISA-2015, the sample is more than 400 thousand teenagers from 57 countries. The rating of Kazakhstan is only in the fourth ten. Monitoring of quality of education at PISA school is carried out in four main directions: literacy of reading, mathematical literacy, natural-science literacy and computer literacy. The PISA monitoring allows revealing and comparing the changes in education systems in the different countries and estimating the efficiency of strategic education decisions. Analyzing our failures in the PISA tasks, scientists have selected the long list of "deficiencies" – those skills which aren't enough for school students for the successful solution of functions.

PISA (Programme for International Student Assessment) - an assessment of mathematical, natural-science and reader's literacy of 15-year-old students. The research is conducted by OECD 3-year cycles since 2000. Kazakhstan has experience of participation in two PISA-2009 and PISA-2012 projects.

In comparison with PISA-2009 Kazakhstan has improved results in the direction of mathematical and natural-science functional competence of school students. The growth of an indicator of effectiveness on mathematical literacy has made 27 points (2009 - 405, 2012 - 432 points) and 25 points on natural sciences (2009 - 400, 2012 - 425 points).

Will present 8 261 15-year-old students of 232 organizations of secondary education including from 16 NIS to PISA-2015 Kazakhstan.

TIMSS (Trends in International Mathematics and Science Study) - an assessment of the quality of mathematical and natural-science education of pupils of the 4th and 8th classes. It is carried out by 4-year cycles since 1995.

In TIMSS-2011 the GPA of the Kazakhstan fourth-graders in the direction mathematical literacy has made 501 and 495 - natural-science competence (on 1000 mark system). Eighth-graders on mathematics have gathered - 487, on natural sciences - 490 points.

The total number of students from Kazakhstan (179 schools) who took part in TIMSS-2015 (the 4th classes – 4 852 people, the 8th classes – 5 038 people).

For the first time, Kazakhstan took part in the TIMSS study in 2007. As a result, Kazakh fourth-graders took fifth place out of 36 countries in mathematical literacy and the 11th place in sciences.

The study is aimed at identifying students’ capacities to apply knowledge and skills in different situations for an adequate socialisation. Nowadays, modern parents are trying to pay more attention to children and unveil their skills in various directions realising that rapidly developing world generates more challenges for younger people.

According to Assan Zholdassov, head of Pythagoras School, engaged in training competitive students in science, technology, mathematics and engineering, students tend to choose careers in technical areas. “At present, great number of children show interest in mathematics and exact sciences. Students like to compete; they are fond of solving mathematical tasks. Parents also make a great contribution to children's study," said Zholdassov in an interview to the Astana Times.

The OECD doesn't range the country on the gained points. The main reason for this assessment is to show the progress of educational systems all around the world. In comparison with PISA-2012, the Kazakhstan participants of the international test have shown improvement in all directions of research. Growth in mathematics has made 28 points and to natural sciences - 31 points. The trend of the progress of mathematical and natural-science competences remains at the high level. In 2012 growth in comparison with 2009 made 27 and 25 points respectively. Our 15-year-old students showed the highest rate of a gain of points in PISA-2015 on reader's literacy (+34). It has become possible thanks to the "National plan of action for the development of functional literacy of school students" realized at the request of the Head of state and actions for the transition to the updated maintenance of school education. Thus, target indicators of the state program of development of knowledge and science, the strategic plan of the Ministry of Education and Science for 2014-2018 where expected values have been provided in 440 points on mathematics (fact 460), 430 on natural sciences (456), 400 on reader's literacy (427) are reached.

Besides, all 15-year-old school students of Nazarbayev Intellectual Schools (2 061 people) for the first time have taken part in the PISA-2015 project. Their influence on the general results of Kazakhstan has been corrected in proportion to a share of pupils of NIS from the total number of pupils of the republic [9].

Nazarbayev Intellectual Schools (NIS) are an initiative of the government of Kazakhstan intended to educate the future intellectual leaders of the country. This network of elementary and secondary schools teaches students in a trilingual environment of Kazakh, Russian, and English.

NIS accepts talented, motivated students, with the aim of developing them into critical thinkers and independent learners. NIS schools are located throughout Kazakhstan, with new campuses opening due to rapid expansion throughout 2014 and 2015. As a result, NIS is recruiting experienced teachers for the opportunity to become part of their educational initiative.

Their influence on the general results of Kazakhstan has been corrected in proportion to a share of pupils of NIS from the total number of pupils of the republic. The NIS students showed excellent results in mathematics, and natural sciences competitions (Singapore, Hong Kong, Macau, the Chinese Taipei, Japan, etc.). Participants from Nazarbayev of intellectual schools gained 523 scores on math, natural sciences - 517 and in reading 492 scores. The Results of Kazakhstan in PISA-2015 raised serious questions. The full and in-depth analysis with concrete conclusions and recommendations was published in the National report. 70% of the questions PISA estimate abilities to apply knowledge. Earlier it was reported that the Kazakhstan pupils of 4 classes took the seventh place on mathematics and the eighth place on natural sciences in TIMSS. Pupils of 57 countries have entered the international monitoring research of quality of school mathematical and natural-science education of TIMSS (Trends in Mathematics and Science Study).

We interviewed foreign teachers working in NIS. Most of them were really happy to work with kids, "brilliant", "gifted". More than 50% of teachers complaints about stress at work, bad management, and bad cooperation between administration and teachers.

International comparative studies have played a key role in the modernization of Kazakhstan's education system. Kazakhstan's participation in international studies is stipulated in the State Program for Educational Development and is funded by the national budget. The significance of the country's participation in these studies is invaluable. It not only allows the country to obtain objective data, but gives a realistic assessment of the achievements and problems of education in the country.

TIMSS results have informed the review of natural science and mathematics curricula, teaching methods in mathematics and natural science, and university- and college-based teacher education programs in Kazakhstan. For example, the TIMSS conceptual model was used in the development of educational programs and textbooks by the National Academy of Education Named After Y. Altynsarin. The JSC National Center for Professional Development "Orleu" developed special programs to support teaching staff in implementing international assessments that evaluate student achievement.

National experts have undertaken in-depth analyses of TIMSS nonconfidential test items. Two-stage assessments of student educational achievement were conducted in 2012–2014, taking into account

TIMSS technologies. The same sample of schoolchildren (Grades 5 to 6 and Grades 8 to 9) participated in the study both times. Parents also participated in the national study.

What are the benefits of international surveys? Governments need to know what is going on in the systems for which they are responsible. Leaders have to decide where to allocate resources according to greatest need. International surveys could help them to make better decisions based on more transparent data. The announcement of performances has had a significant impact on national discussions about education systems and policies. Schools and teachers can reflect on a survey's global analysis and consider recommendations for good practice. The studies obtain supplementary information through questionnaires and correlate this with the test results. For example, PISA 2012 states that lack of punctuality and truancy are negatively associated with test performance, and makes recommendations regarding learner engagement. National research and professional development programmers often use the data from the international surveys as a starting point.

There is, however, a significant distinction in what the two tests purport to measure: the TIMSS is focused on formal mathematical knowledge, whereas the PISA emphasizes the application of mathematics in the real world, what they term "mathematics literacy." As a consequence, it would not be surprising to find significant differences in how students perform, given that some countries' teachers might concentrate on formal mathematics and others' on applied mathematics.

But the real surprise is that these differences may not matter quite as much as we might suspect. For the first time, the most recent PISA test included questions asking students what sorts of mathematics they had been exposed to, whether formal mathematics, applied mathematics, or word problems. After analyzing the new PISA data, we discovered that the most significant predictor of how well a student did on the PISA test was exposure to formal mathematics. That fact is a notable finding, to be sure since the PISA is designed to assess skill in applied rather than formal math. Exposure to applied mathematics has a weaker relationship to mathematics literacy, one with diminishing marginal returns. After a certain point, more work in applying math is related to lower levels of mathematics literacy.

Why these unexpected results? One reason might be that students need to be very comfortable with a mathematical concept before they can apply it in any meaningful way. One cannot calculate what percentage of one's income is going to housing without a clear understanding of how proportions work. It appears that a thorough grounding in formal mathematical concepts is a prerequisite both to knowledge and to using mathematics.

The analysis of the teachers' approaches towards real-life context in lesson showed, that in most cases teachers avoided the elaborating the context of the problem (narrative approach) and paid more attention to the overall structure of the problem, its type and the use of the known method of solutions (paradigmatic approach). In general, teaching interventions towards word problems of Russian teachers are corresponded to teaching practices in other countries. In addition, math teachers both in CIS (Russia) and other countries are more focused on the modeling phase of problem solving than on the interpretation phase. However, unlike foreign colleagues, Russian teachers do not pay attention to distinguishing relevant and irrelevant information in word problem.

Finally, the interventions towards word problems varied significantly by the type of the word problem. If the word problem' context was significant to a student life and had non-routine formulation, then the teachers were more likely to elaborate the real-life context of that problems. Conversely, if the word problem had to be solved just with modeling the situation, then math teachers devoted more time to the structure of such a problem. Thus, the methods used by teachers towards word problems are related to the characteristics of the word problem.

Next results were obtained answering to the third group of research questions. First, based on the analysis of math teachers interviews, it was shown that a significant part of teachers does not consider the role of real-life context as meaningful and self-contained in teaching mathematics. Although teachers in CIS and in other countries devote almost an equal amount of time to real-life context in teaching math, mostly Russian teachers use word problems in order to support teaching of the theoretical material or even as an entertainment. Math teachers in other countries also consider word problems as an additional source of increasing students' motivation, but, in comparison with Russian teachers, they do not distinguish this type of activity as secondary to the mastery of the theoretical material.

Secondly, in math teachers' opinions, an additional difficulty of using real-life context math lessons is the lack of a sufficient number of appropriate word problems. In result, teachers have to spend large resources for searching for these tasks or to develop them. Moreover, together with additional time costs for searching word problems, teaching interventions of real-life context is quite time-consuming, in teachers' opinions. Similar difficulties are experienced by math teachers in other countries, which also indicate a great time cost of using the real-life context in math lessons. Finally, math teachers both in Russia and other countries noted the lack of professional training for the work with the real-life context in teaching mathematics.

In general, this study allowed us to consider the use of real-life context in teaching mathematics from several points of view, as well as from an international perspective. The conducted analysis and comparison of teaching methods on datasets of TIMSS 2011, PISA 2012 and TrEC have shown us significant differences in the frequency of using tasks with low and high cognitive loads. Further, the analysis of the teachers' approaches towards word problems has demonstrated that math teachers both in Kazakhstan and other countries similarly work with the real-life context of word problems. And an analysis of teachers' beliefs has revealed similar attitudes of math teachers both in CIS and abroad to the use of real-life context in teaching mathematics. Thus, the use of real-life context in math lesson is rather similarly organized in Kazakhstan and in other countries.

It is important to note, that the real-life context plays a secondary and supportive role in teaching subject in school, according to the results of the study. First, due to the teachers' approaches towards word problems, the teacher implicitly signals to students what is relevant to learning math in school. By skipping elaborating the problemcontext, a teacher indirectly shows these interventions should not be paid attention to and that learning in school has nothing to do with real-life context. Secondly, the secondary role of real-life context was shown by the using of those word problems which often were not a correct model of the real-life. Finally, in teachers' beliefs, the real-life context also plays only a supporting role in the math learning process.

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ҚАЗАҚСТАНДАҒЫ БІЛІМ БЕРУ ЖҮЙЕСІНІҢ ЖАҢАРУЫ: ДАМУ БОЛАШАҒЫ МЕН МӘСЕЛЕЛЕР

Аннотация. Республиканың білім беру саласындағы қазіргі заманғы үрдістері және оның әртүрлі деңгейдегі міндеттері жалпы білім беру жүйесіндегі өздерінің рөлін, функцияларын және орнын түсінуді, оларды одан әрі дамытудың жаңа тәсілдерін әзірлеуді қажет етеді. Тиімділігі жоғары білім беру жүйесі – ел экономикасының және қазақстандық қоғамның тұрақты өсуін қамтамасыз ететін негізгі факторлардың бірі. Біздің мемлекетіміздің білім беру жүйесінде жүргізіліп жатқан реформалардың мақсаты жаһандануды ескере отырып, оның нарықтық экономика шарттарында сапалы өзгеруін қамтамасыз ету болып табылады. Білім беруді реформалау осы салада жинақталған оң әлеуетті сақтау негізінде осы процесті тереңдету және дамыту үшін жаңа құқықтық, ғылыми, әдістемелік, қаржылық және материалдық жағдайларды жасауды және тиісті штаттық қамтамасыз етуді талап етеді. Мемлекет басшысы Н.Ә.Назарбаевтың «100 нақты қадамдар» жоспарында білім беруге көп көңіл бөлінген. Атап айтқанда, Қазақстан Президенті ЭЫДҰ елдерінің стандарттарына (PISA, TIMMS) негізделген адами капиталдың сапасын арттыру туралы айтты. 2016 жылдың 1 қыркүйегінен бастап бүкіл ел бойынша алғашқы сыныптар 12 жылдық оқу бағдарламасына ауыстырылды. Осылайша, білім берудің жаңартылған мазмұнына көшу басталды. Бірінші сыныптан бастап «Табиғаттану» (жаратылыстану ғылымдары негізі) және үшінші сыныптан «Ақпараттық-коммуникациялық технологиялар» жаңа пәні енгізілді. Мектептегі білім берудің күнделікті өмірі контекстінің болуы тақырып мазмұнын терең меңгеру және жалпы танымдық дағдыларды дамыту үшін кең мүмкіндіктердің көзі болып табылады. Осылайша, бірқатар зерттеулерден анықталғандай, мұғалімдердің күнделікті өмірдегі контекстін пайдалану проблемаларды шешу үшін жалпы дағдыларды дамытады, күнделікті өмірдегі проблемаларды шешу үшін үйренген материалдарды пайдалануға көмектеседі, сондай-ақ оларды оқытуға ынталандырады. TIMSS және PISA халықаралық зерттеулеріне сәйкес, қазақстандық білім алушылар пәндік мазмұнды өте жоғары деңгейде ұстайды, бірақ контекстік ақпаратпен жүктелген міндеттерді шешуге әлдеқайда аз қабілетті.

Түйін сөздер: бастауыш білім беру, жаңарту, күнделікті өмір жағдайы, функционалдық сауаттылық, PISA, TIMMS.

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МОДЕРНИЗАЦИЯ СИСТЕМЫ ОБРАЗОВАНИЯ В КАЗАХСТАНЕ: ПЕРСПЕКТИВЫ И ПРОБЛЕМЫ

Аннотация. Современные тенденции в сфере образования республики и задачи, стоящие перед его различными уровнями, вызывают необходимость переосмысления их роли, функций и места в общей системе образования, выработки новых подходов в их дальнейшем развитии. Высокоэффективная система образования является одним из основных факторов обеспечения устойчивого роста экономики страны и казахстанского общества. Цель проводимых реформ в системе образования нашего государства – обеспечение качественного ее преобразования в условиях рыночной экономики с учетом глобализации. Реформирование образования требует создания новых правовых, научно-методических, финансово-материальных условий и адекватного кадрового обеспечения для углубления и развития этого процесса на основе сохранения накопленного в этой сфере позитивного потенциала. В Плане нации «100 конкретных шагов» Главы государства Нурсултана Назарбаева большое внимание уделено образованию. В частности, Президент Казахстана говорил о повышении качества человеческого капитала на основе стандартов стран ОЭСР (PISA, TIMMS). С 1 сентября 2016 года первые классы по всей стране перешли к обучению по программе 12-летней школы. Таким образом, начался переход к обновленному содержанию образования. С первого класса ввели новый предмет «Естествознание» (основы естественных наук) и с третьего класса – «Информационно-коммуникационные технологии». Присутствие контекста повседневной жизни в школьном обучении является источником широких возможностей как для более глубокого усвоения предметного содержания, так и для развития общих когнитивных навыков. Так, в ряде исследований было показано, что использование учителями контекста повседневной жизни в обучении развивает у учащихся общие навыки решения проблем, помогает им в применении изученного материала для решения задач в повседневной жизни, а также повышает их мотивацию к обучению. Согласно данным международных исследований TIMSS и PISA, казахстанские учащиеся владеют предметным содержанием на довольно высоком уровне, но значительно хуже справляются с заданиями, нагруженными контекстной информацией.

Ключевые слова: начальное образование, модернизация, контекст повседневной жизни, функциональная грамотность, PISA, TIMMS.

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THE ROLE AND POSITION OF RUSSIAN LANGUAGE IN FORMER USSR COUNTRIES

Abstract. Today Russian for the present plays a role of language for international communication continuously being used in a number of business communities, financial and bank systems and even some state structures in CIS countries. Majority of population of these countries (about 70%) use it masterfully enough. The integral part of any culture is a language. A language is a cultural tool which forms personal identity, vision, mentality and social attitudes. Russian language is not an exception. In the second half of XX century over 300 million people (by some calculations - up to 500 million people) used Russian as native, non-native or foreign language [4, 23]. According to some scholars around 286 million people can speak Russian. This language is quite popular because more than 100 states in the world have Russian classes. Russian was and continues to remain one of the leading world languages. As for official status of Russian language, nowadays it takes the third place after Chinese (over 1 billion) and English (750 million) in the world. Russian is one of 6 official languages of the UN, an official and/or a working language in most of authoritative international organizations such as IAEA, UNESCO [6]. In the world Russian is spoken by over 300 million people, including over 140 million who consider it as their native language. Russian is a communication language for over 160 different nationalities. The formation of a single informational space in the post-Soviet countries is an important, but difficult challenge which requires close cooperation among the former Soviet republics in different fields. However, constant contradictions and conflicts between the CIS countries initiate some problems in the creation of single information space in the CIS countries. After disintegration of the Soviet Union the Russian language in the post-Soviet space existed without any support for a long time that caused not only the negative tendencies but disturbing signs of irreversible destruction of this communicative institute in a number of the new independent states. The article includes full analysis of Russian language status in the CIS countries and describes legislative acts in this field, the provision of Russian-speaking mass media separately in each CIS country and also looks into issues related to legislative restrictions of broadcasting in Russian language.

Key words: Russian language, USSR, CIS, state language.

The integral part of any culture is a language. A language is a cultural tool which forms personal identity, vision, mentality and social attitudes. Russian language is not an exception. In the second half of XX century over 300 million people (by some calculations - up to 500 million people) used Russian as native, non-native or foreign language [4, 23]. According to some scholars around 286 million people can speak Russian. This language is quite popular because more than 100 states in the world have Russian classes. Russian was and continues to remain one of the leading world languages.

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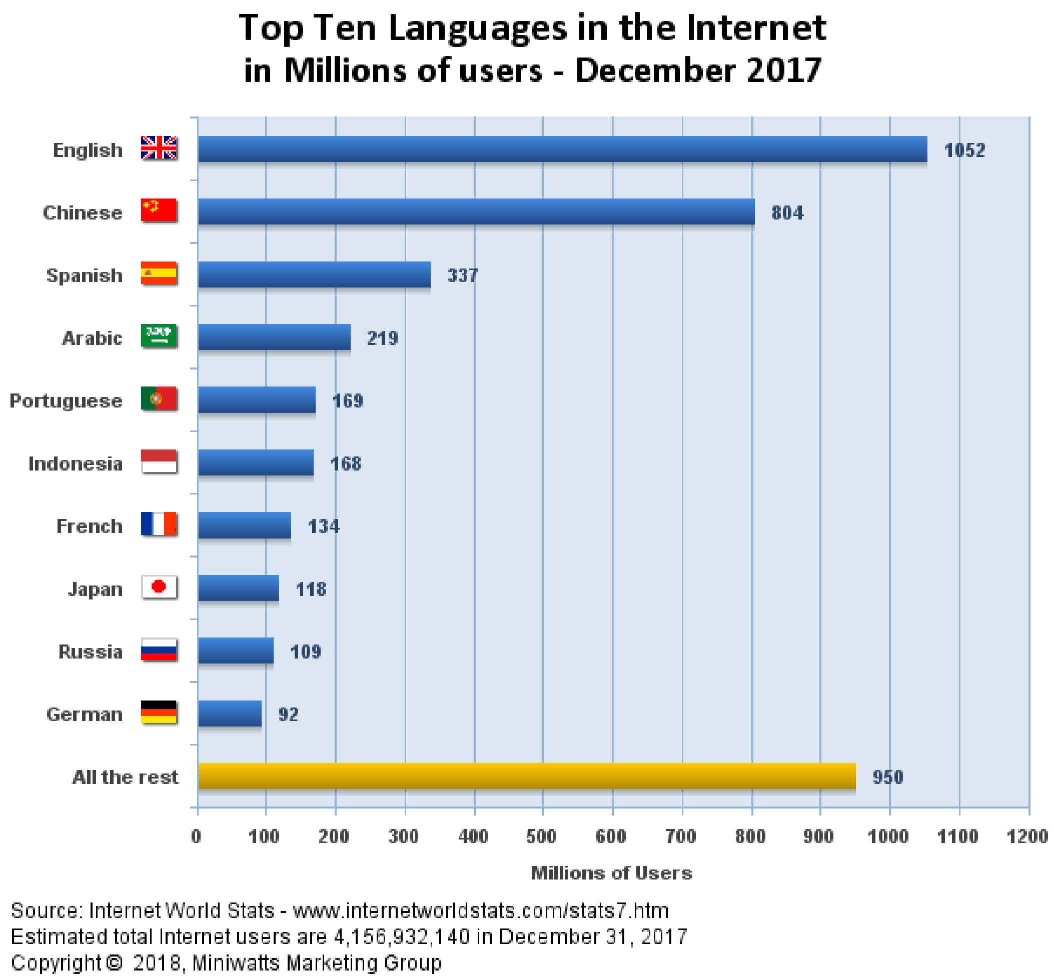

Figure 1 – Top 10 languages in the Internet.

as their native language. Russian is a communication language for over 160 different nationalities. Russian language position in top ten languages in Internet is number 8 (figure 1).

The collapse of the Soviet Union and education system on its territory and independent states created a set of the most challenging problems not only in the field of economics and state constructions, but also in the field of culture. The extraordinarily difficult situation arose in such important sphere as a role of Russian and its relation to other local languages of the title nations in all new states of the Commonwealth.

From the middle of 90th years of XX century situation began to change but in some states it remains the same. The Russian scholars pay more attention to the role of Russian language as a key to integration in CIS. The Soviet past in the form of an imperial complex is still powerful and let Russia (Moscow) control other states. According to Pyanov (2011), most independent states have unmotivated myths and fears concerning Russia, pursuing own political purposes and tasks.

The formation of a single informational space in the post-Soviet countries is an important, but difficult challenge which requires close cooperation among the former Soviet republics in different fields. However, constant contradictions and conflicts between the CIS countries initiate some problems in the creation of single information space in the CIS countries. After disintegration of the Soviet Union the Russian language in the post-Soviet space existed without any support for a long time that caused not only the negative tendencies but disturbing signs of irreversible destruction of this communicative institute in a number of the new independent states. The article includes full analysis of Russian language status in the CIS countries and describes legislative acts in this field, the provision of Russian-speaking mass media separately in each CIS country and also looks into issues related to legislative restrictions of broadcasting in Russian language.

The new CIS countries accept Russian not merely as Russian language but as the language of the USSR and Soviet's language. In this function, Russian proves in two main qualities. First "the Soviet language" [21] undertook a role of international communication language within the newly independent states. Secondly, it acts as the age (generational) communication medium tool. Thus, the need for Russian will be reduced naturally in the process of reduction of the "Soviet" generation citizens.

However, the situation through generation can sharply change. Nowadays, we can evidence a process of Russian-speaking space destructions. The role of local languages has been increased and this phenomenon is typical for all CIS. Russian is losing its positions in social, political and economic life, culture, mass media and education. Young generations of CIS tend to speak more English than Russian.

Russia has been urging all CIS member states to grant Russian language with an official status. So far Russian is an official language in only four states which are Russia, Belarus, Kazakhstan and Kyrgyzstan. Russian is also considered an official language in the region of Transnistria and the autonomous region of Gagauzia in Moldova.

According to Sherbakova (2016), the population of CIS totaled around 282 million people and three times less than population of EU (742 millions).

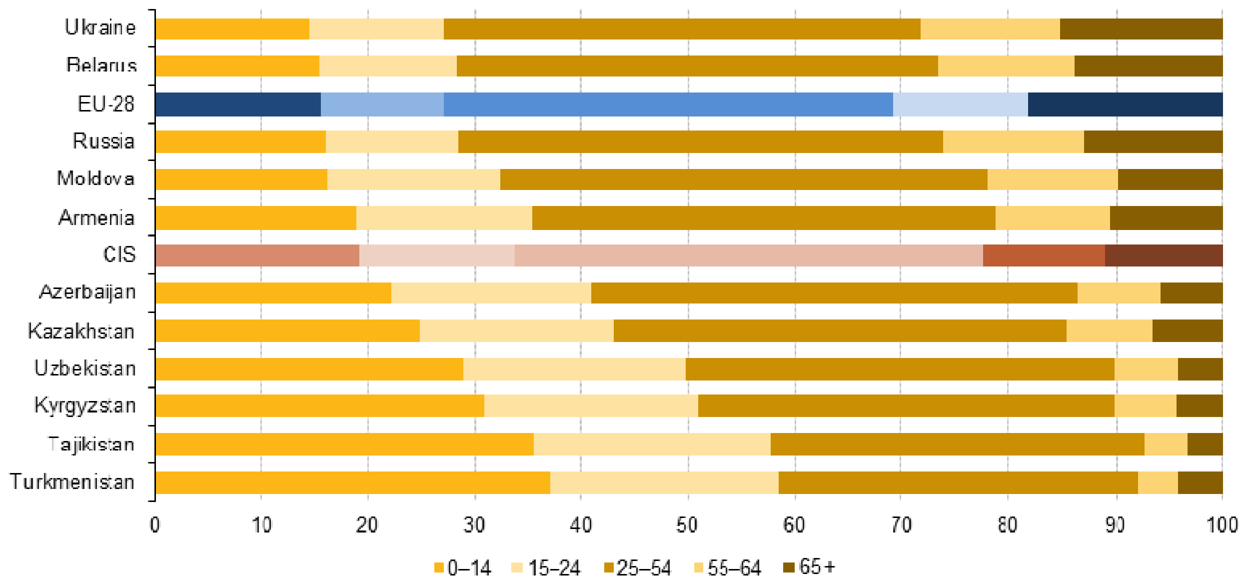

Figure 2 – The age diversity of population of CIS and EU

According to forecasts, in next 10 years the number of people who speak Russian to languages in the CIS countries, at preservation of the current trends, will increase almost twice (that is approximately upto 80 million people) and will exceed the number to some extent knowing Russian (60 million people) (Sherbakova, 2016).

The number of many former Soviet republics which speak Russian among the younger generation is especially quickly reduced. It is necessary to track, as far as possible maintaining an appropriate level of knowledge of Russian in some areas of the Commonwealth. In Central Asia, the situation with knowledge of Russian language was an object of detail studies. Kyrgystan is a leading country with highest number of labor migrants in Russia. According to Poddubskaya (2015) population in Kyrgyzstan speak Russian worse than in Kazakhstan. One of the possible explanations is the fact that majority of Russian speaking Kyrgyz population are currently living in Russia (Moscow).

Poddubskaya (2015) paid close attention to the quantity TV program broadcast in Russian language in CIS countries. According to paragraph 5 of the Constitution of the Kyrgyz Republic (2007) and the Law "About Official (Russian) Language of the Kyrgyz Republic" of 2000, Russian has the official status and besides it is the language of international communication.

Russian and Russian-language media take the leading positions in the republic. "The largest and influential in the republic and, first of all, in the capital are Evening Bishkek, Case No. and Word of

Kyrgyzstan newspapers which are issued in Russian. Still, Russian programs remain the most watchable with Gostele radio which also broadcasts on Channel One and VGTRK, a considerable part of the population gives them preference before local".

At the beginning of 2010, the number of the Russian population in Kazakhstan constituted 23,3% of the population of the country. At the same time, 84,8% of the population of the country know Russian. In Kazakhstan Russian has the official status which confirmed in the Constitution of the Republic of Kazakhstan and the Law of 1997 "About languages in the Republic of Kazakhstan". In 2004 Government made amendments in Law of language according to the "language of work and office-work of public authorities, the organizations and local government bodies of the Republic of Kazakhstan is the state language Kazakh, but Russian has equal rights" [10]. Nevertheless, in 2006 Government declared the decision that all official papers should be in Kazakh. The current state language programme has the multi-language policy.

The president of Kazakhstan Nursultan Nazarbayev published in the state newspaper "Egimen Kazakhstan" ("Sovereign Kazakhstan") an article in which disposed to transfer the Kazakh alphabet from Cyrillic on Latin by 2025. This news causes the negative chain reaction in "patriotic" Russia.

Kazakhstan remains to one of the three Central Asian countries of the former Soviet Union where Cyrillic alphabet is used (in Kyrgyzstan and Tajikistan). In XX century Kazakhstan had already went through two language reforms which took place in 1929 when they transformed from Arabic alphabet to Latin alphabet (a year after Ataturk translated Turkish into Latin) and later in the 1940s transforming it to Cyrillic alphabet. Nowadays about a quarter of Kazakhstan population does not speak Kazakh at all. Instead they speak and write Russian which has the official status set by the Constitution in this country. Nevertheless, many users of social networks in Russia apprehended Nazarbayev's order to translate Kazakh into Latin in bayonets, have regarded it as the treachery of the closest ally and next "knife in a back". Many oppose this reform inside and outside Kazakhstan including its untimely and expensive ("How much will cost to change an alphabet", 2018).

According to Aidos Syrym (2017), Kazakh passed a long way from ethnic minority to the qualified majority.

71 percent of the populations are ethnic Kazakhs. Still percent 8–9 – the Turkic people, the growing Uzbek diaspora which in 15 years will become the second for the number in Kazakhstan, the Uighur diaspora and other. These are the Turkic people, birth rate at them very high, and vital aspirations entirely

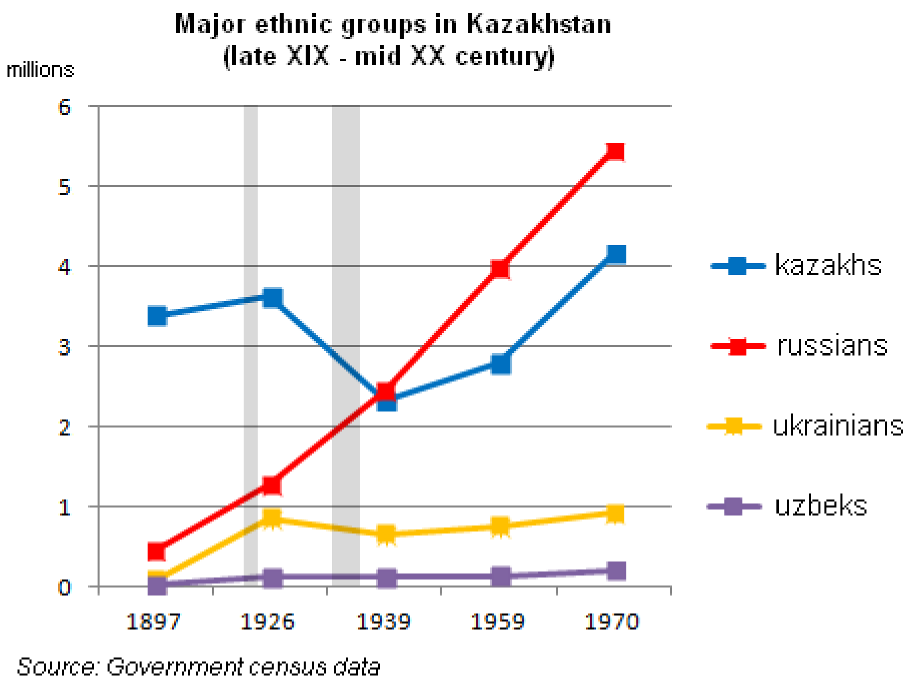

Figure 3 – Major ethnic groups in Kazakhstan (late 19 – mid 20 century)

others. Therefore the situation will change, but it is necessary to speak correctly, to correctly explain that transition to Latin concerns only Kazakhs or people who know Kazakh. It will not affect others.

Russian-language media make about 70% of the printing market and 58% of electronic media. It is quite exciting for me as Kazakh citizen observe political battles in media especially Russian TV. The information attack on Kazakhstan from Russia media raises many questions in the relationship between two countries. Solovyov's attacks against Kazakhstan are not casual. The political scientist Satpayev (2018) is sure that all these games are well planned, and we will see more "traps."

In Tajikistan the situation is much worse: the adult population badly knows Russian, and the youth - almost does not know. According to paragraph 2 of the Constitution of the Republic of Tajikistan, November 6, 1994, Russian has the status of the language of international communication. Russian is native for a minimal number of residents of Tajikistan (only 3%), it is still rather widespread among the population.In recent years activity of Russian-language media in Tajikistan underwent many changes. In August 2010 the Russian and Tajik sides reached the agreement on renewal of TV channel broadcasting in the territory of Tajikistan. In Tajikistan, according to the Constitution of the Republic of Tajikistan of 1994 a state language is Tajik, Russian - the language of international communication. The translation since 1998 of office-work in the country into Tajik narrowed the sphere of use of Russian.

In Transcaucasia - in all three countries (Armenia, Georgia, and Azerbaijan) less than a third of the population well know Russian. Russian will lose the positions in Armenia and Georgia.

Armenia is a member of Eurasian Trade Union. The reason for Armenian membership is entirely political, the unstable situation in Nagorniy Karabakh.

According to the report MFA of Russia "Russian in the world," about 70% of the population of Armenia know Russian. Despite it, Russian is officially recognized as the language of ethnic minority according to the European Charter of regional languages (it was accepted in Strasbourg on November 5, 1992).

In the system of secondary education in Armenia, the special place is allocated to Russian. It is intermediate between the family Armenian and foreign languages (generally it is English, the insignificant place is taken French, German, Spanish and Persian). Foreign languages by curricula are included in the schedule from the 2nd class, and 1-2 hours a week are allotted to them. The Armenian school students learn Russian from the 1st class and till 2-3 hours a week. Both the authorities of Armenia, and society, in general, consider studying of Russian priority. In 2012 Russian is equated to foreign languages.

From three countries - Belarus, Moldova, and Ukraine - the most disturbing situation develops in Ukraine. If now the vast majority (70%) of the adult population in general well knows Russian, then the youth knows Russian much worse (41%).

Thus, in our opinion, in Azerbaijan, Belarus, Kyrgyzstan, and Moldova in the short term, there will be no considerable reduction of a share of the Russian speaking population. On the contrary, in Armenia, Georgia, Kazakhstan, Tajikistan, and Ukraine it is possible to predict the rather severe weakening of the position of Russian.

Considering Russian problem in the former Soviet Union particular attention, it is necessary to pay it to official legal status in the particular countries. After the collapse of the USSR, the system of measures of change of the status of Russian and its role realized in the legislation in national culture, and interethnic communication became a cornerstone in bases of public policy in the field of the national culture of the newly independent states. The problem of giving of the special status to Russian is very relevant and essential as the provision of Russian in the state is a critical factor of preservation of its positions.

According to the model law on languages of the CIS accepted by Inter-parliamentary Assembly of the State Parties on December 4, 2004: A state language is a language which is legislatively fixed for obligatory use in political, economic, social, cultural and other official spheres.

The official language is the language which is legislatively fixed for use in official spheres along with the state. The language of an ethnic minority is the language of the ethnic group living in the territory of the state.

Thus, in full the issue of the status of Russian is resolved only in Belarus. The status of Russian fixed in the results of a referendum of 1995 and then confirmed in the Constitution of the Republic of Belorussia of 1996. The paragraph 11 of the allied contract of Russia and Belarus provides that official languages of the Union State are state languages of the State Parties without prejudice to the constitutional status of their state languages.

"More than 80% of the ten-million population of the country Belarus, including practically all city dwellers use Russian. In the Republic, students learn Russian at all schools".

Most media of Belarus broadcast in Russian. Moreover, in the media market of Belarus, practically all central radio stations and TV channels of Russia are presented. Also in Belarus, the printed materials which are turned out in Russian are widely submitted.

In the Republic of Moldova, the status of Russian is not defined by the Constitution of the Republic Moldova of 1994, but the right for functioning and development of Russian (article 13, item 2) is defined. However the law "about the functioning of languages in the territory of the Moldavian SSR" 1989 according to which article 3 "Russian as the language of international communication continues to work in the country.

Official languages in the territory of Gagauzia (autonomy as a part of Moldova) are Moldavian, Gagauz and Russian, and in the unrecognized Dnestr Moldavian Republic, those are Russian, Moldavian and Ukrainian.

Besides confirmation of the rights of the ethnic minorities established by international law, the law contains a number of the provisions which are bringing closer Russian to the status official and also provides the proportional representation of ethnic minorities in structures of executive and judicial authority of all levels, in army, bodies of protection of public order.

In Azerbaijan, according to the Constitution of the Azerbaijan Republic and the Law "About a State Language," Azerbaijani is state language. The status of Russian is not defined, however actually Russian performs the function of the language of international communication.

The situation with Russian in Georgia is complicated. Georgia ratified the framework convention on the protection of ethnic minorities. In Abkhazia (which is considered by the Georgian authorities and a part of the international community as a part of Georgia) Russian is "language of the public and other institutions." In South Ossetia (is also considered by the Georgian authorities and a part of the international community as a part of Georgia) – Russian (since July 2012) is a state language along with Ossetian. Political conflicts between Russia and Georgia considerably complicate cooperation of the countries in the creation of a shared information space.

It is impossible to call favorable a situation on information space of Georgia. Aggravate all political conflicts. So, regularly arising contradictions between Georgia and Russia on the questions connected with the status of South Ossetia also affect language aspects. For example, in 2008 some private owners of movie theaters in Georgia refused broadcasts of movies in which the Russian speech sounds. At the same time access to the Russian Internet, servers were blocked, and the ban on the broadcast of Russian-language media (subsequently this ban was partially withdrawn) is imposed [8].

In Abkhazia, the Abkhazian language has the status state, and Russian is "language of the "state" and other institutions," and in South Ossetia Russian is official.

In Uzbekistan in an edition of "The law on a state language" till 1995 Russian had the status of the language of international communication, but on the new edition of "The law on a state language" accepted on December 21, 1995, to Russian the part of language of "ethnic minority" is assigned.

In Turkmenistan the status of Russian is not defined, till 1996, according to the Constitution of the Republic Turkmenistan and "The law on language" of 1990, Russian had the status of the language of international communication.

Researchers note a tendency to the replacement of Russian from political and social spheres of life of Turkmenistan. So, in 1995 the official ban on the existence of the Russian community in Turkmenistan was imposed that resulted currently in the total absence of the Russian-Turkmen organizations in the territory of the state.

Due to the de-Russification policy in Turkmenistan Russian-language media are almost not present. The Russian-language press is presented by the only edition – the Neutral Turkmenistan newspaper. In 2002 import of the Russian-language press to the state territory was strictly limited. On television, there is 10-minute news in Russian. Experts note that at this conjuncture residents of the country give preference to the viewing of satellite channels, namely – Russian-speaking.

The forcible annexation of the Crimea, the long and terrible military conflict in Ukraine that all show how Moscow treat and control former USSR countries.

In Ukraine Russian has several statuses at once (that is one does not exclude another). According to the Constitution, the status of the state is set only to Ukrainian through the Constitution of Ukraine guarantees "free development, use and protection of Russian, other languages of ethnic minorities of Ukraine" (Art. 10). Also Russian has the status of international communication according to "The law on languages in the Ukrainian SSR" according to which Russian is the language of "international communication of the people of USSR."

Russian has no status of a state language of Ukraine, but since official language accepts 2012 in the southern and east regions of the country. In a society constantly there are discussions about the status of Russian.

The language question is not the first year disputable both in external and in the domestic policy of the state. The attempt to give to Russian the official status state in 2004 terminated in failure. Currently, in Ukraine, the strong tendency to the replacement of Russian is observed that encounters high resistance in regions where 90% of the population – Russian-speaking. It, in turn, generates the conflicts between Russia and Ukraine.

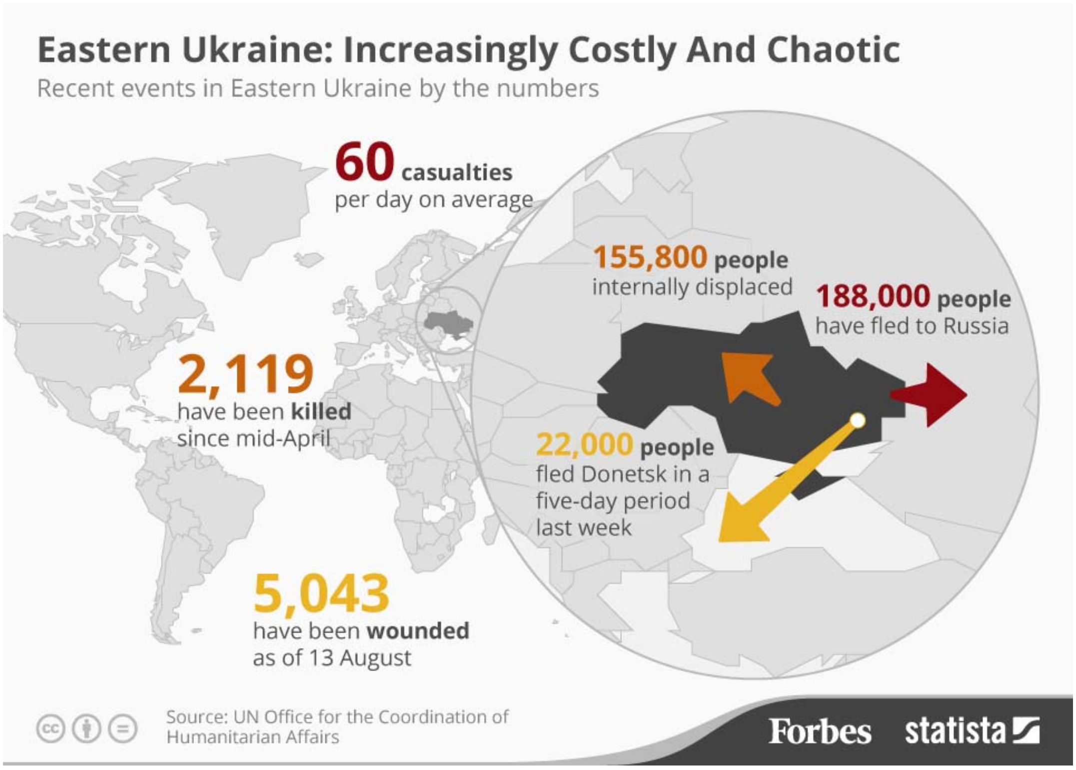

Figure 4 – The situation in Eastern Ukraine

In July 2012 in Ukraine, the law "About Fundamentals of the Public Language Policy" according to which Ukrainian position as a state language was adopted. The free use of regional languages is possible in territories where not less than 10% of the population considered Ukrainian. The relevant law was repealed on February 23, 2014. However, in the aggravated political situation Petro Poroshenko after the introduction to a position of the president of Ukraine said that he does not intend to provide to Russian the status of the state, having noted that in Ukraine Ukrainian will only be the official language. The head of state made the corresponding statement on an award ceremony of Taras Shevchenko.

Since April 19, 2004. The national council of Ukraine concerning TV and radio broadcasting the body responsible for licensing of media stopped registration of the mass media using non-state language. Programs and movies in Russian continue to be broadcast but have to be followed by the Ukrainian credits at the same time.

On January 22, 2007, the Ministry of Culture and Tourism of Ukraine signed the memorandum with distribution companies and demonstrators of movies according to which the companies undertook to duplicate, sound or subtitles in Ukrainian of the film copy of foreign production 2007 to finish a share of dubbed films for children's audience to 100%. In June 2007 several general management of the Council of Europe (on legal issues, concerning human rights and concerning education, culture, and cultural heritage) in essence condemned "insuperable desire to limit the use of language in the sphere of the home video".

The most critical indicator of the spread of Russian in the former Soviet Union is the number of educational institutions teaching in Russian and number of the studying school students in them. From public policy in education in Russian, it is possible to designate two aspects: education in Russian and studying Russian.

It should be noted that in Belarus and Kazakhstan a considerable part of the population speaks fluent Russian. Moreover, in these countries a significant share of students in Russian. However in Kazakhstan less than a half of pupils of schools studies at Russian already that became the result of considerable narrowing of education in Russian.

On the contrary, in Armenia, Tajikistan, Georgia, and Uzbekistan, a share of the population which is knowing Russian, rather small. At the moment an opportunity to get an education in Russian in these countries is practically absent: here it is not enough, or at all, there are no Russian schools, and the share of students in Russian is minimum. While in Armenia and Tajikistan there is a high need for expansion of a possibility of studying Russian for schools.

It should be noted that if in the 90th years of the XX century in the newly independent states of the CIS there were sharp reductions of education in Russian (several thousands of Russian schools were closed, and the number studying at the Russian schools was reduced more than by 2 million people), then after the 2000th years this process continues though in some countries it was slowed down. School training at Russian remains in most the Post-Soviet states: in Belarus - 75% of pupils, Kazakhstan-41%, Ukraine - 25%, Kyrgyzstan - 23%, Moldova-21%, Azerbaijan - 7%, Georgia - 5%, Armenia-2%.

In all countries, Russian is demanded as the means of communication with Russian-speaking fellow citizens at work and in life. It demonstrates to the preservation and the importance of the Russian-speaking environment in all new independent states. About a half of residents of the newly independent states say

Figure 5 – Russian as soft power.

that "knowledge of Russian in life is useful" and therefore it is crucial to learn Russian. The population of the CIS countries especially notes communicative function of Russian as means of the international communication. At the same time, Russian continues to bear humanitarian function: it is necessary for reading literature in Russian, including professional that reflects its importance as a translator of scientific and unique knowledge and also gives the chance of familiarizing with the Russian culture.

It is impossible to deny that a part of the population of the republics of the CIS gives the vital importance to the Russian-speaking environment, Russian is wanted to be learned, want to communicate on it. Therefore Russia has to maintain the Russian culture and Russian.

Despite discrimination and the belittled status in the states of the CIS, Russian still keeps the commanding presence as the language of international communication or as a language of minorities (minority language).

Considering the prospects of development of Russian-speaking space in the CIS, the primary responsibility for ensuring the status and support of Russian, of course, has to lie on the states in which the Russian-speaking population lives. At the same time the Russian Federation as a basis of the Russian people, its language and culture can and has to render protection and carry out protection of the Russian population of the states of the CIS, the compatriots. Besides, protection of the language rights and rights of ethnic minorities - one of the international obligations of the Russian Federation. It is worth to remember that saving of Russian is also strengthening of the prestige of the Russian Federation, its positions on the international scene.

The main directions of this act providing along with protection of the rights of compatriots concrete actions for preservation and development of Russian, culture, education, information space.

The most important basis of support of the Russian-speaking environment in the states of the CIS are the projects approved and realized by Russia:

- the program of work with compatriots abroad,
- federal target program "Russian,"
- the state program on rendering assistance to voluntary resettlement to the Russian Federation the compatriots living abroad.

Thus, the analysis of a problem of the status of Russian in the former Soviet Union allowed drawing the following conclusions. First, Russian performs some significant functions in the former Soviet Union.

– First of all, it is a function of the language of interstate value, the language of science, culture.

– Secondly, in the course of formation of the newly independent states on the former Soviet Union, there is a gradual disintegration of uniform language space.

– Thirdly, the status of Russian in each country in the former Soviet Union has the specifics. It is connected with some factors, such as features of the economic and political development of the country during the Post-Soviet period, the number of the Russian-speaking population living in the territory of the country, specifics of the foreign policy of the Russian Federation with this or that country.

– Fourthly, in the maintenance of Russian as means of international communication on space of the CIS, the Russian Federation begins to play a unique role, carrying out many federal programs.

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ПОСТКЕҢЕСТІК КЕҢІСТІКТЕГІ ОРЫС ТІЛІНІҢ РОЛІ ЖӘНЕ ОРЫНЫ

Аннотация. Ресей аумағында өмір сүретін 130 миллион адамннан, орыс тілін өзінің ана тілі санайтындардың саны 200 миллион адамға өсіп отыр. 300-350 миллион адамның бағалауы бойынша орыс тілін жетік меңгерген және күнделікті өмірде қолдануы жағынан бірінші немесе екінші орынға қояды. Әлемде жарты миллиард адам орыс тілінің қандай дәрежеде болмасын меңгерген, сондықтан да әлем бойынша ағылшын және қытай тілдерінен кейін үшінші орынды алады. Бүгінгі таңдағы талас тудырып отырған сұрақ әлемде соңғы он жылдан кейін орыс тілінінің әсері төмендей ма немесе жоқ па? Бір жағынан, псосткеңестік кеңістікте тілдің жағдайы КСРО құлдырауына дейін орыс тілі жалпы қабылданған ұлтаралық қарым-қатынас құралы ретінде қызмет етті, сонымен бірге осы жерде қарама-қайшылықты әр түрлі тенденцияларды анықтауға болады.Басқа жағынан алсақ, орыс тілді диаспора алыс шет елдерде соңғы жиырма жылда көп өсті. Ресейде саяси әсерлерден Қрымға қосылуы жәнеУкраинаның Солтүстік-Батысына соғысы орыс тілінің дәрежесіне көптеген елдердің қатынасын өзгертті. Бірнеше зерттеушілердің «орыс тілі – бұл жұмсақ күш», яғни посткеңестік кеңістік адамдары және орыс тілді диаспора өкілдері үшін кіріктіру тәсілі деген пікіріне келісеміз. Зерттеушілер қатары көрсеткендей орыс тілінің ағымдағы жағдайы өзінің негізгі қызметінен басқа, тарихта тағы бір маңызды әлеуметтік қызметті орындайтынын көрсетті – лингвистикалық әлем картасында жоғалып кету қауіпін жою үшін қарқынды түрде жетілдіру және аз тілділікті дамыту. Бүгінгі таңда Қазақстанда әлеуметтік мәселелердің бірі тұрғындардың көші-қон теріс сальдосы болып отыр. Берілген статистикалық сандарда әр түрлі айырмашылықтар бар. Қазіргі уақытта ТМД көші-қон халқы үшін кең таралған мемлекет Ресей болып отыр.

Түйін сөздер: орыс тілі, КСРО, ТМД, тіл туралы заң.

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РОЛЬ И СТАТУС РУССКОГО ЯЗЫКА НА ПОСТСОВЕТСКОМ ПРОСТРАНСТВЕ

Аннотация. Численность людей, которые считают русский родным языком, превышает 200 миллионов человек, 130 миллионов из которых живут на территории России. В 300-350 миллионов оценивается число людей, владеющих русским языком в совершенстве и использующих его в качестве первого или второго языка в повседневном общении. Всего же русским языком в мире в той или иной степени владеют более полумиллиарда человек, и по этому показателю русский занимает третье место в мире после китайского и английского. Спорным на сегодняшний день остается также вопрос, падает в последние десятилетия влияние русского языка в мире или нет. С одной стороны, языквая ситуация на постсоветском пространстве, где до распада СССР русский язык служил общепризнанным языком межнационального общения, весьма противоречива, и здесь можно выявить самые различные тенденции. А с другой стороны, русскоязычная диаспора в дальнем зарубежье за последние двадцать лет выросла многократно. Влияние политических маневров России и присоединения Крыма, и дальнейшая война на Северо-Западе Укараины, изменило отношение многих стран к статусу русского языка. Согласно ряду исследователей, «русский язык – это мягкая сила», способ интеграции, как жителей постсоветского пространства так и русско-язычной диаспоры. Ряд исследователей отмечает что в нынешних условиях русский язык, кроме своих основных функций, самой историей призван выполнять еще одну важную социальную функцию – способствовать реанимации и развитию миноритарных языков, которым угрожает опасность исчезновения с лингвистической карты мира. Одной из социальных проблем Казахстана на сегодняшний момент является отрицательное сальдо миграции населения. Цифры представляемые различными статистическими ведомствами разнятся. В настоящее время самой популярной страной для миграции населения в СНГ является Россия.

Ключевые слова: русский язык, СССР, СНГ, закон о языках.

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FEMALE ENTREPRENEURSHIP IN UZBEKISTAN

Abstract. The aim of this paper is to find why females want to become entrepreneurs and what kind of challenges they face to be an entrepreneur in Uzbekistan. The present paper recognizes the need for more research in the field and aims to generate insights about motives, challenges and personal experiences of women who have established business in Uzbekistan. For this purpose, 65 females who is currently a businessman or intent to start their own business in Tashkent area were participated in this research and obtained information about their personal and professional motivation, experiences, and practices. Result showed that gender bias influences to women's entrepreneurship activities in Tashkent, Uzbekistan. It is meanwhile, networking and mentoring is not an imperative challenge for females of Uzbekistan for undertaking entrepreneurship. Segmentation Model is recommended to be useful. Although, the measures and scales were tested from the point of only female entrepreneurship in the Uzbekistan area, the methodology may, therefore, by applied to opposite gender to compare the level of difference in motivation and challenges of undertaking entrepreneurship between genders differences.

Key words: Female Entrepreneurship, Motivational Factors, Human Capital Investment Portfolio, Challenges in Female Entrepreneurship.

Introduction. Every entrepreneur should have a clear vision of the image of the entrepreneur not only for success but also for own satisfaction [1, p. 41]. By itself, an expression of entrepreneurial ability, according to Western economists, is a willingness to take risks. However, the risk must be logically justified and mitigated so that the new technology or idea is not destroyed [2, p. 274]. Thus, women entrepreneurs in Uzbekistan take risks.

Leading academic research project in entrepreneurship, Global Entrepreneurship Monitor data reports reveal that number of female involved in entrepreneurship activities worldwide improved from 4.93 in 2001 to 11 per cent in 2014. In last years the rate of female entrepreneurs has been growing almost in double in comparison with male entrepreneurs and this shows that for female entrepreneurship golden age has finally started [3]. Increasing female participation in entrepreneurship leading to economic and social development and females are becoming one of the main contributors of global economic growth [3]. This phenomenon is particularly highlighted in Uzbekistan in last years. Uzbek Government approved state program by Presidential Decree UP - 4947 of February 7, 2017 in order to support (female entrepreneurship) and create more jobs for fresh graduates of college and universities. As stated by the Chamber of Commerce and Industry of Uzbekistan, the number of female-leading private enterprises composed of 10 percent of total businesses in the country. However, this indicator is still low because of lack of capital, knowledge and skills to do entrepreneurship [4].

In last year's Uzbekistan achieved boom in entrepreneurship. Females from urban and rural areas started to establish their private business activities. First Uzbek women NGO, Business Women Association (BWA) has been contributing to the expansion of private sector by supporting new female enterprises. BWA`s regional department of the "Tadbirkor Ayol" (businesswoman) organizes a forum every year for representatives of female small businesses and private enterprises [5]. As deputy governor of Tashkent Region and chairperson of the women`s committee Fayziyeva says, increasing active participation of females in society and support for their aspirations and initiatives in the area of entrepreneurship assist to ensure the steady development of the country`s economy and to increase nation`s wellbeing. Index Mundi (2017) statistics show that from 29,473,614 Uzbekistan population, 44% of them working adults and from this male consist of 6,444,288 and females 6,510,741 numbers. Literacy rate of Uzbek females reported as 99.5 percent [6]. From the regional perspective about 8200 females are involved in entrepreneurship nowadays. From this about 1000 of them are craftswomen and 700 operate their own farms, reports chairwoman of the regional department of the Tadbirkor Ayol BWA of Uzbekistan, Qodirkhonova [5]. Fact fish statistics of 2013 show that firms with female participation in ownership shows higher results 29% in comparison with 2005 indicators which is 15% [7].

Sadly, to say that, females still face many impediments to actualize their self-employment. As in most developing countries these limitations are concern about empowerment of female activities. Besides that, cultural, economic and financial barriers are still remaining questionable. For cultural barrier it can be said that encouraging female entrepreneurship in Uzbek traditional society is not widely accepted because of gender inequality is still exist at some degree within the country. Female entrepreneurship may be counted as claiming dominance over the male counterparts. This even uninformed barrier has perceptible effect on female determination to undertake business activities. Another reason may be economic barriers which females come across. Mostly, females are enrolled in less well-paid sectors of the economy. Females concentrate in non-productive industry like health, education, and culture which is comparatively lower than other industries. Even though lots of effort made by government toward female empowerment, commonly micro or small-scale enterprises and the informal sectors are mostly active among Uzbek business ladies. Furthermore, financial barriers coming from less access to credit and property other constraints for female entrepreneurship. Financial barrier is more sensitive for females than males. Besides limited access to traditional sources of funding, females counted as not capable of achieving success, lack of knowledge in business plans the absence of efficient high-level networking. Furthermore, human capital investments are one more constraint that should be well planned by females when they support their family alone, when they lost their breadwinner. And last, work life balance is another important issue which females count as most demanding harmonizing work and home duties at the same time [8].

Research objectives and significance of the study. Objectives of research is to find out difficulties facing among younger female entrepreneurs and motivation factors of starting own business. Moreover, to discover the effect of human capital investment and work life balance in female private enterprises lifestyle. This research will explore current situation about private female enterprises in Uzbekistan and how it may be improved in the future. Benefits of this study is to increase the number of female involved in top management by analysing barriers they face to start a new enterprise. It encourages females to believe on themselves and keep the balance between work and family responsibilities. Moreover, this report will assist to diminish the unevenness between male and females in upper level management.

Literature review

Motivational Factors. Central issue for all entrepreneurs is motivation to establish own business [9]. The reason for motivation of establishing a new business may come from internal or external traits. Push and pull factors are essential in female entrepreneurship. For some females, entrepreneurship is a way to get rid of from unemployment, increase family income or not fulfilment from existing job and necessity to balance work and home responsibilities. At the same time pull factors need for attainment - self-fulfilment, strive for independence, personal freedom, security, satisfaction, willing for prosperity, social status and power or because an opportunity was identified. Moreover, females may take business opportunities as a problem solver for the problems in their life [9]. In other research done by Robb, motivation for starting a company or getting involved in an early-stage firm questioned. As Robb states, females start their company for similar reasons as males, cite similar self-perceived reasons for success [10].

Barriers and Challenges. Some researchers contemplate that lower participation of women in entrepreneurship is due to gender barrier, human and financial resource inputs. Further studies prove that access to capital is the impediment to the progression of women possessed firms. From the latest surveys it has been identified that mostly females rely on their own funding rather than external sources of financing [10]. For the growth-oriented entrepreneurship external capital is essential within the context of debt and equity. If female entrepreneurs do not search for, or if they are not able to get external capital, their visions for growing their firms are shrunk considerably [11].

Human Capital Investment. Various literatures suggest that managerial advancement is positively related to human capital credentials. As Becker [8], human capital investment in terms of improving education, training, and work experience which later brings better payoffs and status in new job. Besides that, Becker [8] points out that educated people can achieve managerial positions, paid more for better knowledge, problem solving skills and for productivity. It is apparent that education, training and work experience leads to advancement [8]. According to Burke and McKeen (1994a) managerial females participating in training and educational activities are better dedicated, fulfilled and involved into the job, prompt to higher career prospects. Saying specifically, females' position in senior management is associated with increased knowledge and skills and professional development opportunities made available to them throughout their careers [12].

From the other side, Ragins and Sundstrom (1989) also identified that training can develop knowledge, skills, credentials, and credibility, and thus it will be advantageous for the promotion. Therefore, education and training seem to have a great importance to the career development of female managers. Morrison et al, (1987) specified that female managers should get equal access to education, training and development as males. From some people's consideration, receiving less training and development is usually common for females, jobs requiring like nurturing skills is typically appropriate for females and challenging and risky job assignments are not entrusted for females. For females, training and education are vital to get managerial skills, whereas it is harder for females to get expertise from the job assessment and work experience. Furthermore, as Jamali et al. (2006) highlighted that even females themselves are agreeing to take less opportunities for professional development than males in an organization [8].

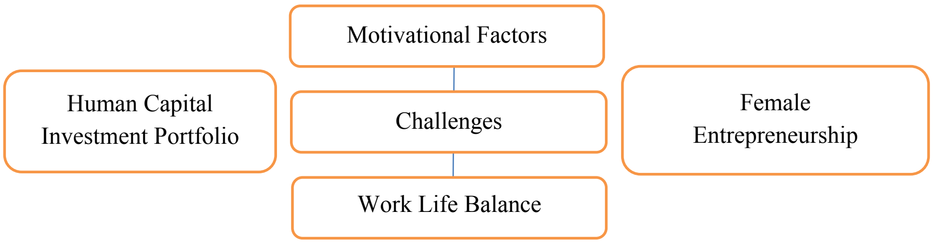
Work Life Balance. Studies indicate that work life balance plays an important role in balancing females work and family demands, which leads to better employment efficiency and significant business enhancements. An investigation done by Dex, Smith, and Winter (2001) found that societies offering parental leave enjoyed above average labour productivity, and that provision of flexible working hours and telecommuting was associated with decreased employee turnover. Furthermore, Hughes (2007) also mentioned that an organization can advantage from assisting employees to consider and generate work life balance. Besides that, organization should adopt the work life balance practices for instance flexible work hours; job sharing, telecommuting; childcare benefits, on-site childcare centres, and eldercare benefits in order to help female employees balance their work, non-work commitments then increase their productivity and lead to significant business improvements [8]. While Shelton (2006) posits that the use of "work-family management strategy" will help female entrepreneurs to achieve balance and experience greater well-being, and at the same time good business performance, Kirkwood and Totell (2008) acknowledge that the strategies employed by the women entrepreneurs are not always the key to work-family balance. They conclude that even though many women start their own business in order to balance their dual roles, the reality is different from their expectations and entrepreneurship does not always allow them to manage between the family life and the business life: "For many women entrepreneurs, the goal of achieving work–family balance by choosing to start a business may be somewhat unattainable. For many women entrepreneurs, balancing and managing the work–family divide is a continual struggle. While there is some flexibility in terms of when to work and where to work, the amount of work they do does not lessen. However, they could choose to work with a partner and choose the types of employees they wanted to work with, so some ability to achieve work–family balance is apparent that may not be the case for those who are employees of other companies" [13].

Research Methodology. Research done is quantitative study and it is a cause and casual study in term of its practise. The population of the study covered service and manufacturing, merchandising businesses. The nature of these firm`s businesses are CEO`s of banks, private shop owners, medical stuff manufacturers, designing, wedding organizers, food processing, legal education start-up owners, traditional clothes brands production owners and other small business holders.

Flow of information comes from theory of role of female entrepreneurship and hypothesis about relationship between dependent and independent variables: motivational factors, challenges, human capital investment, work life balance. A survey done in a form of questionnaire with about 20 questions in multiple choice format. Mostly, primary data applied in research which collected from the respondents. This form consisted from two parts. The first part was about demographic information, while second most important part asked main questions related to the research topic. Sample questions used from various sources like internet, publications, journals, previous researches. Targeted population in this research covered all females who wants to start their own businesses and females who already own private enterprises. Non-Probability Sampling technique used to select potential respondents in this survey. The sample size for this study is 65 out of 100 completed questionnaires chosen, descriptive analysis is used to explain the profile of the respondents and to determine general information about female entrepreneurship in Uzbekistan. Besides that, One-Way ANOVA, Pearson Moment Correlation Test and Multiple Regression Analysis were used for the hypotheses testing.

Research Results

Respondents Profile. In first part of the questionnaire, demographic information of the respondents was collected. Majority of the female respondent in this study were in the age range of 25-30 years old which stated 49.2%. In this study, females with higher education participated more 78.5% than females completed high school, which is 21.5% only. In addition, majority of female employment status 75.4% are on the stage to intend to start its own business than currently a businessman 24.6%.



Research Framework

Female Entrepreneurship. Result shows that, females in Uzbekistan consider that entrepreneurship is consent and there are plenty of chances to start their own business. Moreover, mostly females believe that if they continue to work on themselves there is a chance of getting higher positions in future equally with mans. Moreover, female entrepreneurship from the point of age group can be seen that females are getting more motivated to do business between the age of 25-35 which is relatively high than younger females at the age of 20-25. However, female entrepreneurship in terms of age group, can be seen that completed high school level females are achieved higher results in doing small scale businesses in comparison with females who is holding higher education degree. In addition to that, the number of females who is already businessman is quite numerous, while the indicator of females who intended to start their own business is comparatively lover. As female entrepreneurship in Uzbekistan is commonly accepted among females and this number is steadily increasing.

Entrepreneurship Motivations. Study results demonstrates that females on the age of 30-35 are highly motivated 15.5% than younger females on the age of 20-25. ANOVA test results show that intrinsic and extrinsic motivation among females of all ages, females in range of 30-35 are highly motivated to do business with the figures of 15.5 %, but females with higher education level which is 15% are less motivated to start their own business in comparison with torturing degree females. Research shows that in Uzbekistan females with higher education level mostly prefer to start their career with working in a company and getting more experience before establishing their own. Moreover, 16% females from the research done are currently entrepreneurs are basically motivated in doing business, which indicates higher figures than intended to start own business females which is 15%.

Entrepreneurship Challenges. It is identified that gender bias 27,5% is the most challenging factor which motivates females to launch their business. In addition, questionnaire results discloses that, females face with challenges in networking considering that there are very few individuals with whom they consider as best friends and sharing any kind of issue, professional or personal 46.2% , and there are very few individuals with whom they frequently talk about work related topics 46.2%, they personally do not know people who occupy important posts around them and they seldom keep in touch with a number of people who are at higher levels than they are 41.5%, they do not have a network of friendships around them, that can help further their career progression 29.2%.

Work Life balance. The present study aims to understand how the female entrepreneurs in Uzbekistan perceive work-life balance in the context of family life, but also in the context of free time and leisure time, do they experience dual role conflict, and do they apply work family management strategies. As females getting elder (30-35) with higher education level and currently a businessmen consider that work life balance and female entrepreneurships is not a challenging factor for them which stops them from doing their job which constitutes 16% females taken as a sample from the population.

Human Capital Investment. Research done revealed that there is not so strong relationship between human capital investment and female entrepreneurship. Meaning that, in human capital is not so influencing factor for females who is working in organization or running their own business are able to manage their time and money for family and human capital investment (education, trainings). Moreover, research shows that 18.5% higher management in organizations does not counter to supervisors to be sensitive to female's family and personal concerns. Furthermore, higher percentage of females are being disagree with the point of in organization 43.1%, in organization it is very hard to leave during the workday to take care of personal or family matters employees are not encouraged to strike a balance between their work and family lives 35.4%, females cannot easily balance their work and family life 43.1% or organization is not supportive of females who want to switch to less demanding jobs for family reasons 36.9%.

Hypothesis testing Pearson Moment Correlation table of Female Entrepreneurship and Selected Variables. Correlation coefficient between sub-domains from independent variables which include motivations (internal and external), multiple challenging factors (mentoring, networking and gender bias), work life balance and human capital investment and dependent variable, which is female entrepreneurship. Most of the sub-domains from independent variables tested showed positive correlation except for work life balance and human capital investment factors. The strongest relationship of subdomain with dependent variable is between perceived motivations with perceived female entrepreneurship (0.255), followed by perceived challenges (gender bias) with perceived female entrepreneurship (0.271) and perceived with other challenges mentoring and networking with perceived female entrepreneurship (0.186 and 0.167). The utmost significant correlation of perceived female entrepreneurship with perceived motivations ($r = r=0.255$, $p \leq 0.05$) may due to females in Uzbekistan are becoming more educated and independent which reflect their way of thinking and modern lifestyle. Moreover, second significant correlation experienced of female entrepreneurship with perceived challenge-gender bias ($r = 0.271$, $p \leq 0.05$). Results revealed from the data affirmed that female respondents feel internal and external motivations are triggering factors in starting entrepreneurship and challenges like gender bias is one of the challenge that females should come across which has a significant relationship with female entrepreneurship. Significant correlation between the dependent and two independent variables: intrinsic and extrinsic motivation and one of challenges: gender bias, be real in this study. Most of the independent variables are significant at $p \leq 0.05$ level (1-tailed) and positively influence to female entrepreneurship. Therefore, hypotheses $H0_1$ to $H0_4$ were rejected.

Multiple Regression Analyses for Female Entrepreneurship. To further see the effect of female entrepreneurship and factors affecting to it, linear regression was done in which as independent variables are taken motivations, challenges, work life balance and human capital investment. The F statistic for female entrepreneurship model is 4.296, which is significant at $\alpha = 0.01$. After excluding the non-significant variables, the final regression model produced by enter method for female entrepreneurship is: **Female Entrepreneurship = (0.166) (Motivation) + (0.210) (Gender Stereotype) + 5.931.** This model explains 12% of variance in female entrepreneurship in Uzbekistan. This indicates that 12% of the dependent variable (Female Entrepreneurship) was explained by the linear combination of the four predictor variables. Among the four predictor variables, the results clearly revealed that gender bias was found to be strongly significantly towards motivation to do business by females in Uzbekistan, followed by other challenges (networking and mentoring) and perception of work life balance and human capital investment.

Summary of Multiple Regression Analyses for Female Entrepreneurship

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	5.931	1.656		3.583	.001
MOTIVATION	.166	.090	.222	1.845	.070
GENDER	.210	.105	.240	1.997	.050

Conclusion. Study results illustrates that females in Uzbekistan are both intrinsically and extrinsically motivated to start entrepreneurship. 46.2% females are strongly believe that they should apply obtained in University in real life and do something worthwhile in their life 75.4%. Moreover, females working in organizations prefer to start their own business 49.2% due to do more for society and reach self-satisfaction and independence. Furthermore, 44.6% females prefer being self-employed than being monthly salary taker and they believe that their business will be great opportunity for emerging and promising line of business. Also, 47.7% of female respondents said they are influenced by their family business to start entrepreneurship. Research shows that there is a strong relationship between female entrepreneurship and motivation factors (intrinsic and extrinsic) and challenging factors (gender bias) in doing business. Moreover, it is identified that gender bias 27,5% is the most challenging factor which motivates females to launch their business. Within these factors, establishment of small enterprises owned by women can help in increasing women's autonomy and provide them the opportunity to have a more active and representative role in the country's economic and political life. Moreover, female entrepreneurs can serve as role models for younger generations indicating new opportunities for employment.

Research done revealed that there is not so strong relationship in human capital investment, work life balance and female entrepreneurship in Uzbekistan. Meaning that, in Uzbekistan females working in organization or running their own business are able to manage work life balance (time and money) for their family and for human capital investment (education, trainings). Moreover, research shows that 18.5% higher management in organizations does not counter to supervisors to be sensitive to female's family and personal concerns. Furthermore, higher percentage of females, 43.1% are being disagree with the point of in organization it is very hard to leave during the workday to take care of personal or family matters employees are not encouraged to strike a balance between their work and family lives 35.4%, females cannot easily balance their work and family life 43.1% or organization is not supportive of females who want to switch to less demanding jobs for family reasons 36.9%.

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ӨЗБЕКСТАНДАҒЫ ӘЛЕМДІК КӘСІПКЕРЛІК

Аннотация. Мақаланың мақсаты – әйелдердің неге кәсіпкер болғысы келетінін және Өзбекстанда кәсіпкер болу үшін қандай қиындықтарға тап болатынын анықтау. Осы мақалада бизнес саласының қажеттіліктері зерттеліп және Өзбекстандағы өз бизнестерін қалыптастырған әйелдердің жеке тәжірибелеріндегі мотивтері, кездескен қиындықтары туралы жалпы түсінік беріледі. Осы мақсатта, бүгінгі таңда Ташкент облысында кәсіпкерлікпен айналысып отырған немесе кәсіпкерлікті бастауға ниеттеніп отырған 100 әйел адам сауалнамағы қатысып олардың жеке тұлғалық және кәсіби мотивациясы, жетістігі және тәжірибесі туралы ақпарат алынды, бірақ сауалнаманың ішінде 65 сауалнама ғана дұрыс және толық толтырылған. Сауалнама нәтижесі, Ташкент, Өзбекстандағы әйелдердің кәсіпкерлікпен айналысуыны гендерлік көзқарастың кереғар әсері бар екенін көрсетті. Дегенмен, Өзбекстан әйелдерін үшін желілік және тәлімгерлікпен кәсіпкерлікке қол жеткізудің маңызы шамалы. Олар үшін сегментация моделін пайдалыну маңыздырақ екендігі ұсынылды. Сонымен, Өзбекстан аумағында өлшемдер мен жобалар әйел жыныстылар арасында зерттелді, методикалық тұрғындан қарасақ, жыныстық айырмашылықтар арасында кәсіпкерліктің дамуы деңгейінің теңдігін жынысқа қатысты салыстырсақ айырмашылық арасы алшақ.

Түйін сөздер: әйел кәсіпкерлігі, мотивациялық факторлар, адами капиталдың инвестициялық портфелі, әйел кәсіпкерлігіндегі қиындықтар.

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ПРЕДПРИНИМАТЕЛЬСТВО СРЕДИ ЖЕНЩИН УЗБЕКИСТАНА

Аннотация. Цель этой статьи – найти, почему женщины хотят стать предпринимателями в Узбекистане и с какими проблемами они сталкиваются. В настоящей работе признается необходимость проведения дополнительных исследований в этой области и направление цели на выявление мотивов, проблем и личного опыта женщин, которые создали бизнес в Узбекистане. С этой целью в исследовании принимали участие 100 женщин, которые в настоящее время являются предпринимателями или намерены начать собственный бизнес в Ташкентской области. Были получены информации об их личной и профессиональной мотивации, опыте и практике, но только 65 вопросников были заполнены правильно и в полном объеме. Результат показал, что гендерная предвзятость влияет на предпринимательскую деятельность женщин в Ташкенте, Узбекистан. Между тем, организации и наставничество не являются обязательной задачей для женщин Узбекистана занимающиеся предпринимательством. Рекомендуется использовать модель сегментации. Несмотря на то, что меры и шкалы были проверены с точки зрения только женского предпринимательства в Узбекистане, поэтому методология может применяться к противоположному полу, чтобы сравнить уровень различий в мотивации и проблемах предпринимательства между различиями между различными полами.

Ключевые слова: женское предпринимательство, мотивационные факторы, портфель инвестиций в человеческий капитал, трудности в женском предпринимательстве.

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THE COMPOSITION AND STRUCTURE OF BISMUTH-DOPED DYSPROSIUM MANGANITE

Abstract. The task of this work is to further study the composition and morphology of the powders of manganite synthesized by Sol-gel method using oxides of dysprosium, manganese and bismuth. It is shown that when using nitric acid as a precipitator, a single-phase powder can be obtained. Were identified methods of obtaining perovskitelike powders of dysprosium manganite. Structural and morphological properties of the samples were studied by x-ray phase analysis (X-ray) and scanning electron microscopy (SEM) in combination with optical microscopy. By the method of X-ray phase analysis has previously been used to determine the structure and parameters of elementary cells of the synthesized manganite. According to X-ray data, the manganite has an orthorhombic structure with the following parameters: a=5.2793, b= 5.83, C=7.382 Å, Z=4. Methods of optical and electronic microscopy defined shapes and sizes of the obtained powders of the manganite. It is shown that the powders of manganite are formed in the dendritic structure and it has particle sizes from 1 micron to 30 microns.

Key words: double bismuth manganite, Sol-gel method, structure, optical microscope, electronic microscope.

Introduction. The development of spintronic devices based on nanoscale boundaries of magnetic materials is a complex task. In [1], heterostructures of complex materials with the use of manganites, multiferroics, compounds of rare earth elements, etc.for non-volatile storage devices were considered. Recently, a structure for memory cells has been proposed, providing reliable spin manipulation and switching of magnetization between two stable positions in intermetallic structures [2]. The solution is based on the superlattice of single-bonded rare earth compounds $TbCo_2$ and 3d transition metal FeCo. The structure is characterized by a giant magnetostriction and demonstrates the transitions of spin reorientation by an external magnetic field and/or elastic deformation [3, 4]. In transition metal oxides $R_{1-x}A_xMnO_3$ (manganites), where R is one of the rare earth elements La or Pr, A is one of the alkaline earth metals Sr or Ca, the new state electric and magnetic phases can occur when electric fields and strains in thin films or on surfaces with dielectrics or other oxides. [5].

Methods. In this method of synthesis, trivalent metal oxides were used: dysprosium, manganese and bismuth. The required amount of oxides was dissolved in distilled water. Citric acid and glycerol (2:3) were added to the obtained solution as gelling agents. Then the solution was heated using an electric stove with constant stirring at 80°C to remove excess water and obtain viscous gels. The gel was dried at 250°C and annealed at 500°C for 10h to obtain the desired powder. The powders were crushed in an agate mortar to obtain a homogenous mixture. Then they were placed in crucibles and annealed at temperatures of 600-1000°C for 19 hours [6].

The finished single-phase powder of the manganite was studied using XRF to determine the structure, parameters of electronic cells and methods of optical and electron microscopy.

Results

X-ray diffraction. It was found that the manganite synthesized by the Sol – gel method is single-phase (figure 1).

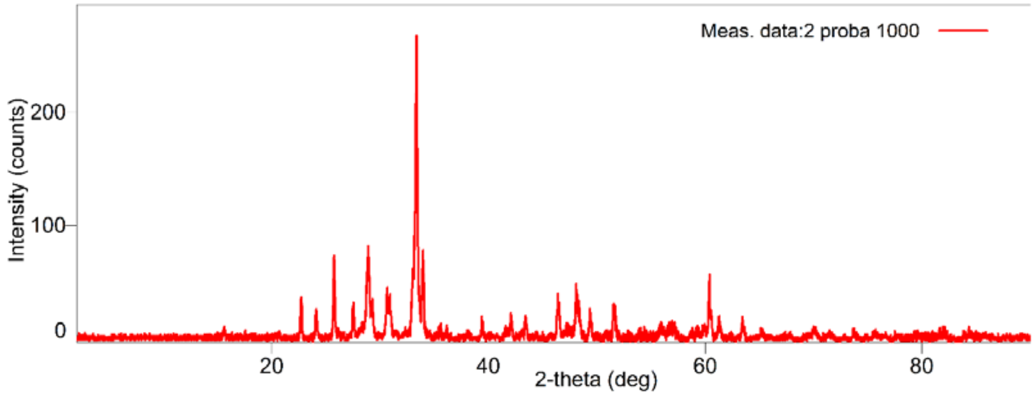


Figure 1 – The diffraction pattern of the manganite synthesized by the sol-gel method

The formation of new phases was controlled by the method of x-ray phase analysis produced by X-ray diffractometer Miniflex 600 (Rigaku) using CuK α-radiation filtered by the Ni filter (U = 30 кV, J = 10 мA, the rotation speed of 1000 pulses per second, time constant = 5 sec., the range of angles 2θ from 5 to 900). Radiographs of the synthesized polycrystalline powders were indicated by the homology method (homologue is a distorted structure type of perovskite). The density of manganites were determined by the pycnometric method according to GOST 2211-65. Toluene served as indifferent liquid. The density of the manganite was measured 4–5 times and data were averaged [6].

Table 1 – The results on indexing of radiographs of manganite

#	[°2Th.]	d[Å]	Int. [%]	$10^4/d^2$эксп.	hkl	$10^4/d^2$теор.
1	11.38	7.769	0.2	165.67	(1,1,0)	165.67
2	16.12	5.494	1.8	331.3	(2,0,0)	331.3
3	19.78	4.486	6.5	496.91	(2,1,1)	496.91
4	22.87	3.885	2.7	662.54	(2,2,0)	662.54
5	25.62	3.474	2.2	828,59	(0,1,3)	828,59
6	28.11	3.172	100.0	993,88	(2,2,2)	993,88
7	30.42	2.936	3.0	1160,08	(1,2,3)	1160,08
8	32.57	2.747	37.0	1325,2	(4,0,0)	1325,2
9	34.61	2.590	3.9	1490,74	(4,1,1)	1490,74
10	36.54	2.457	1.7	1656,49	(0,2,4)	1656,49
11	38.40	2.342	2.3	1823,16	(3,3,2)	1823,16
12	40.18	2.243	0.6	1987,65	(4,2,2)	1987,65

The results of the synthesized manganite radiograph indexing by different methods show that the manganites have the orthorhombic structure with the following unit cell parameters (table 2).

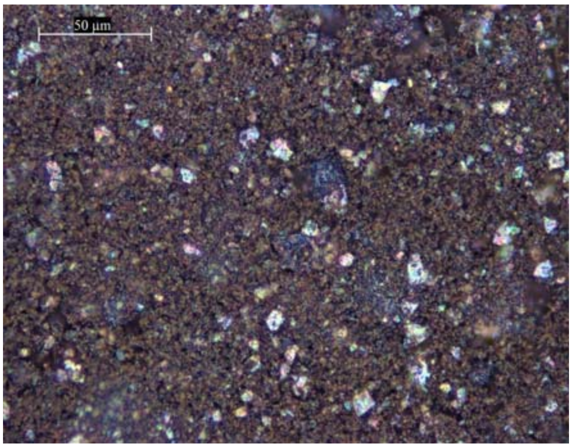
The reliability of the indexing results is controlled by a satisfactory coincidence of experimental and calculated values of the inverse squares of the interplanar spacing's ($10^4/d^2$), and the coincidence degree of the x-ray and pycnometric densities values of the studied compounds.

Thus, the double bismuth-manganite BDMO was synthesized by the sol-gel method, where glycerin was used as the stabilizer of the sols. The use of this method made it possible to obtain single-phase crystalline particles with a much shorter time [6].

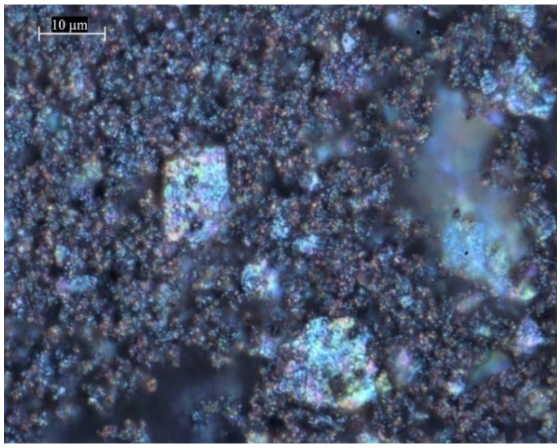
Table 2 – The unit cell parameters of the manganite obtained by sol-gel method

№	Compound	a	в	c	$V_{un.cell.}$, Å3	Z	$P_{X\text{-}ray}$, g/cm^3	$P_{pyc.}$, g/cm^3
1	$Bi_{0,1}Dy_{0,9}MnO_3$	5.2793	5.83	7.382	227.26	4	7.765	7.761

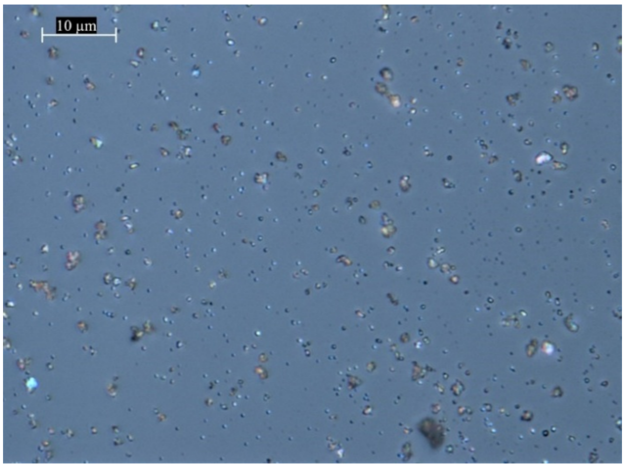
Morphological study. Figure 2 shows a micrograph of manganite powders taken from a digital material science microscope Leica DM 6000.



a)



b)



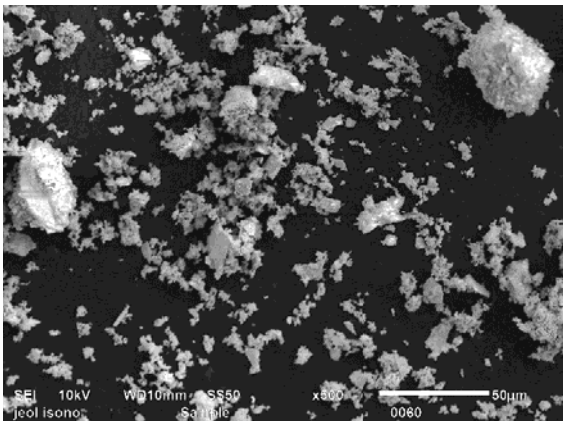
c)

Figure 2 – A micrograph of powders of manganite with different magnifications:
a) an increase of 50, b) an increase of 100, c) an increase of 150

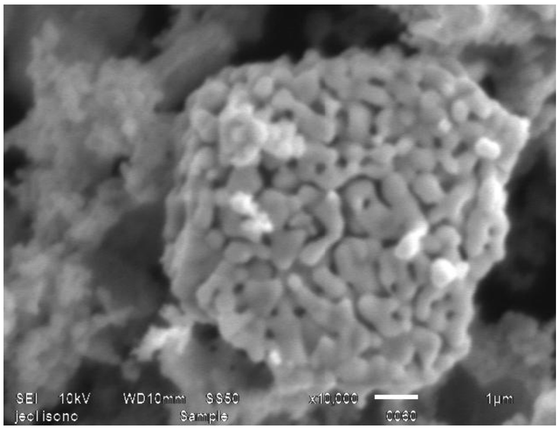
Microstructure of bulk samples was studied by scanning electron microscopy (SEM) JOEL JED-2300 with approaching up to x2000 and the ability to conduct elemental analysis. Photographs of the coatings obtained are shown in figure 3.

This increase in particle size with the level of doping is apparently due to a change in the melting point of the samples, which reduces the increase in the content of cations of alkaline earth metals. According to Harton et al. (2002), this effect leads to a liquid-phase process, which is facilitated by sintering and increasing grain growth. On the surface, it can be seen that the resulting coating has a dense structure consisting of 50 μm crystals.

The elemental analysis performed on an electron-scanning microscope (insert in figure 4) showed that the atomic fractions of the elements practically coincide, which corresponds to the formula of bismuth-dysprosium manganite – BDMO. As can be seen from figure 3, the powders obtained by this technology are practically monodisperse, which is a great advantage of the method.



a)



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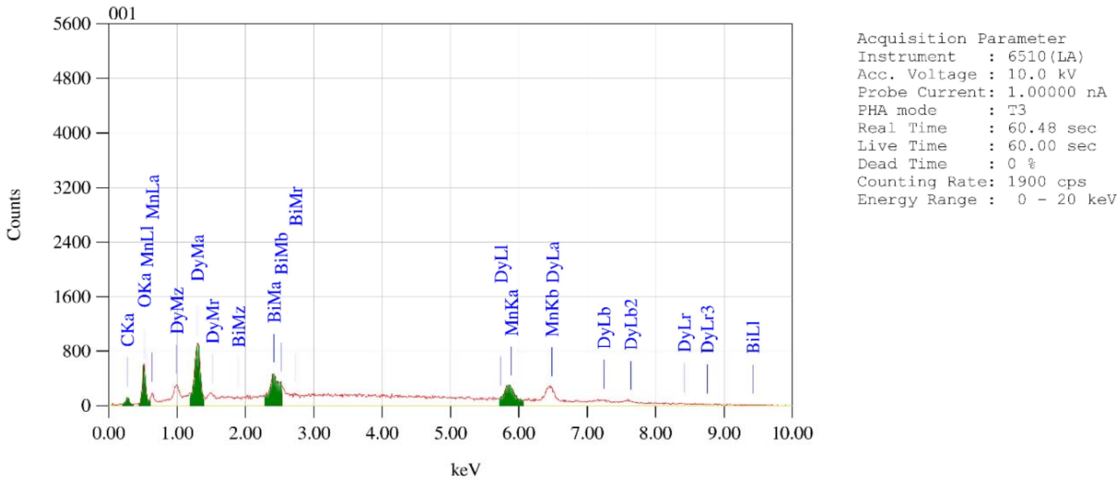

ZAF Method Standardless Quantitative Analysis
Fitting Coefficient : 0.4580

Element	(keV)	Mass%	Error%	Atom%	Compound	Mass%	Cation	K
C K	0.277	1.90	0.03	12.00				1.2439
O K	0.525	5.88	0.05	27.87				5.7472
Mn K*	5.894	20.20	0.85	27.90				28.4553
Dy M*	1.293	58.60	0.62	27.36				53.4339
Bi M*	2.419	13.42	0.40	4.87				11.1197
Total		100.00		100.00				

JED-2300 AnalysisStation JEOL

c)

Figure 3 – A micrograph of manganite powders taken on an electron microscope with different magnifications: a) an increase of 100, b) an increase of 2 000, c) EDS microanalysis

Discussion. The manganite powders obtained by the sol-gel method have a single-phase structure. According to micrographs, manganite has particle sizes from 1 micron to 30 microns.

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ВИСМУТПЕН ЛЕГИРЛЕНГЕН ДИСПРОЗИЙ МАНГАНИТІНІҢ ҚҰРАМЫ ЖӘНЕ ҚҰРЫЛЫСЫ

Аннотация. Бұл жұмыстың мақсаты диспрозий, марганец және висмуттың оксидтерін пайдаланып золь-гель әдісімен синтезделген манганит ұнтағын ары қарай құрамы мен морфологиясын зерттеу болып табылады. Азот қышқылын тұнбаға түсіруші ретінде пайдалану арқылы бір фазалы манганит ұнтағын алуға болатындығы көрсетілген. Перовксит типті диспрозий манганитінің ұнтағын алу әдісі анықталған. Үлгілердің құрылыстық және морфологиялық қасиеттері рентгенофазалық талдау (РФТ) және оптикалық микроскопиямен бірге сканирлеуші электронды микроскопия (СЭМ) әдістерімен зерттелді. Бұрын рентгенофазалық талдау әдісі арқылы синтезделген манганиттің құрылысы мен қарапайым ұяшық параметрлері анықталған. РФТ мәліметтері бойынша манганит орторомбты құрылысқа ие екені көрсетілді және параметрлері келесідей: а=5.2793, в= 5,83, с=7.382Å, Z=4. Оптикалық және электронды микроскопия әдістерімен алынған манганит ұнтақтарының көлемі мен өлшемдері анықталды. Манганит ұнтақтарының дендритті құрылысқа ие екені көрсетілді және оның өлшемдері 1 микроннан 30 микронға аралығында.

Түйін сөздер: висмуттың қосарланған манганиті, золь-гель әдісі, құрылыс, оптикалық микроскоп, электронды микроскоп.

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СОСТАВ И СТРУКТУРА ЛЕГИРОВАННОГО ВИСМУТОМ МАНГАНИТА ДИСПРОЗИЯ

Аннотация. Задачей данной работы является дальнейшее исследование состава и морфологию порошков манганита, синтезированного золь-гель методом с использованием оксидов диспрозия, марганца и висмута. Показано, что при использовании азотной кислоты в качестве осадителя можно получить однофазный порошок. Были определены методы получения перовскитоподобных порошков манганита диспрозия. Структурные и морфологические свойства образцов изучали методами рентгенофазового анализа (РФА) и сканирующей электронной микроскопии (СЭМ) в сочетании с оптической микроскопией. Методом рентгенофазового анализа ранее были определены структура и параметры элементарных ячеек синтезированного манганита. По данным РФА установлено, что манганит имеет орторомбическую структуру со следующими параметрами: а=5.2793, в= 5,83, с=7.382Å, Z=4. Методами оптической и электронной микроскопий определены формы и размеры полученных порошков манганита. Показано, что порошки манганита складываются в дендритную структуру и он имеет размеры частиц от 1 микрона до 30 микронов.

Ключевые слова: двойной манганит висмута, золь-гель метод, структура, оптический микроскоп, электронный микроскоп.

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KINETIC RESEARCHES AND ELECTROCHEMICAL BEHAVIOUR OF LEAD AT POLARIZATION ALTERNATING CURRENT

Abstract. In the present work the kinetics and electrochemical behavior of lead during polarization by alternating current that occur on the lead and graphite electrodes in an acid medium by using the potentiodynamic method were researched. Anode-cathode and cathodic-anode cyclic polarization curves were taken to clarify the mechanism of the electrode processes occurring during the polarization by an alternating current on a lead electrode. According to the polarization measurements the kinetic parameters were calculated: charge transfer coefficients (α), the heterogeneous constants of rate the electrode process (k_s), and the effective activation energy of the process (E_a). The results are based on the high electrochemical activity of a lead electrode and the prospects of their use in electrolysis with alternating current polarization for the synthesis of various lead compounds.

Key words: lead, electrode, alternating current, electrooxidation, electrical dissolution, kinetic parameters.

Introduction. Recently, the demand for various industries in non-ferrous metals is more satisfied by their production from recycled materials. For the issue of recycling of secondary raw materials and various types of industrial waste for valuable products of multi-purpose use is given great attention, since it allows expanding not only the raw material base, but also to solve economic and environmental problems.

According to the data of [1, 2], especially lead (21.3%) is found in the hazardous solid wastes of polymetallic plants that falls into the environment from rock dumps (53.8%) and existing tailing dumps (39.6%). The effect of lead on the environment has a dampening and multiplying character. Concentration of lead in polymetallic ores of different regions averages from 0.32 to 0.8% per ton, in rich to 1.5%, and in very rich to 2.5%, sometimes higher.

In tailing dumps, depending on the time of their formation, lead content varies from 0.4 to 0.7 and even up to 1.5%. At present, out-of-use lead-acid batteries, lead cables and other products are disposed of again. Lead-acid battery scrap, as a rule, contains about 61% of pasty material and 39% of lead plates. The paste contains 41% lead sulphate, as well as lead oxides and lead metal.

Known methods for extracting lead from the scrap of batteries include the use of a reflector furnace or a shaft furnace for the smelting of lead [3, 4]. In the implementation of these processes, large amounts of sulfur dioxide are formed, which is a danger to the environment. Increased control over the composition of waste gases leads to a significant rise in the cost of the process.

The introduction of processes for the integrated processing of lead-containing materials, their regulation and finding the optimal conditions for a particular process require the study of the electrochemical behavior of lead and its compounds. It should be noted that in recent years, alternating current has been increasingly used in various branches of chemical technology, but the electrochemical behavior of lead and the ability to synthesize its compounds under polarization by alternating current has not been studied.

One of the most urgent tasks today is the preparation of lead compounds by an electrochemical method without additional reagents and additives [5, 6]. Technological schemes of isolation of lead used in recent years do not give high indicators. In this connection, the synthesis of the most important metal compounds using non-stationary electrolysis regimes is an urgent task. The peculiarity of the non-stationary mode of electrolysis is the production of metals and its compounds of high purity, reduction of reagent costs, the possibility of using wasteless and simplified technological processes [7, 8].

Studies of domestic and foreign scientists on the possibility of conducting electrochemical reactions at alternating current are very limited. Most of the researchers studied the dissolution of vanadium in aqueous solutions in electrolysis by alternating current, as well as the mechanism of its influence [9], the process of silver dissolution in nitric acid at an alternating current of [10], the electrochemical behavior of titanium and copper under alternating current polarization [11-13].

The electrochemical behavior of nickel in alkaline solutions was studied in [14, 15]. In the literature, there are studies on the electrochemical synthesis of metal oxides using an alternating current for this purpose. The author with co-workers [16] were studied the effect of the composition and concentration of electrolyte, current density and electrolysis temperature on the oxidation rate of metals (Cu, Cd, Ti, Zn, Sn, Ni, Al, Pb, Fe, Mo) under alternating current polarization with a frequency of 50 Hz.

Analysis of the literature data showed the prospects of using alternating current. Because of the lack of knowledge about the kinetics of the processes of electrical dissolution, the poor knowledge of the chemistry of metal dissolution, it became necessary to search for effective methods of investigation, to determine the optimum conditions for the dissolution processes. In connection with this, it was of interest to study the electrochemical behavior of lead in aqueous solutions when passing an alternating current.

The purpose of this work was to study the mechanism and kinetic regularities of lead electro-oxidation processes in acidic solutions by the method of pull off potentiodynamic polarization curves, and also to study the effect of the basic electrolysis parameters on the current output of lead dissolution and the synthesis of lead(II) nitrate.

Methods. In the work electrochemical behavior of lead electrodes at polarization by industrial non-stationary current of 50 Hz without separation of the electrode space in a glass electrolyzer was investigated. Sinusoidal alternating current was supplied using a B-24 current source. The current strength was measured with an E-538 ammeter. To analyze the mechanism of electrochemical processes occurring on the surface of electrodes, electrolysis was carried out under certain conditions. To produce non-stationary current of different frequencies, the generator of GZM-231286 brand was used.

In order to study the mechanism of metal dissolution during the polarization of the lead electrode by an alternating current, cyclic potentiodynamic curves on the potentiostat SVA-1BM were pull off. The polarograms were recorded on a self-biased two-coordinate potentiometer PDS-021. The reference electrode was chlorine silver (E^0 = +0.203 V), and an auxiliary electrode was made of platinum. When pulling off the polarization curves, an electrode of a special design was used [17]. The investigations were carried out in a thermostatic cell of YSEC-2 using a TGL8U thermostat.

The behavior of the lead electrode in solutions of nitric acid in the concentration range 0.5-3.0 M, at solution temperatures of 20-80 °C and potential sweep rates of 10-100 mV/s has been studied. Anodic-cathodic and cathodic-anode cyclic polarization curves were pull of to clarify the mechanism of the electrode processes occurring on the lead electrode.

Results and discussions. In the background solution ([HNO_3] = 10 g/l), on the lead electrode on the cathodic branch of the cyclic polarization curve in the potential range minus 0.4 V a wave of reduction of lead(II) ions is observed, and the anode branch corresponds to the dissolution of metallic lead. On the cathode curve, hydrogen is observed in the potential range of minus 1 V, and on the anode curve oxygen is released at a potential E = +1.8 V.

As well as, cyclic polarization curves were measured in nitric acid solutions of lead nitrate ([Pb^{2+}] = =10 g/l, [HNO_3] = 10 g/l). Recovery of lead in the cathode region passes through a maximum at a potential of minus 0.5 V (figure 1), and at a potential «minus» of 0.8 V, hydrogen liberation is observed. On the anodic-cathodic cyclic polarization curve (figure 2), the basic electrode processes remain the same.

The results of the investigation of electrode processes by pulling off cyclic polarization curves are shown, that the electrochemical reactions proceeding in the cathodic and anodic half-cycle under the polarization by industrial alternating current, differ substantially from the reactions proceeding on the cathode and anode at the polarization by direct current.

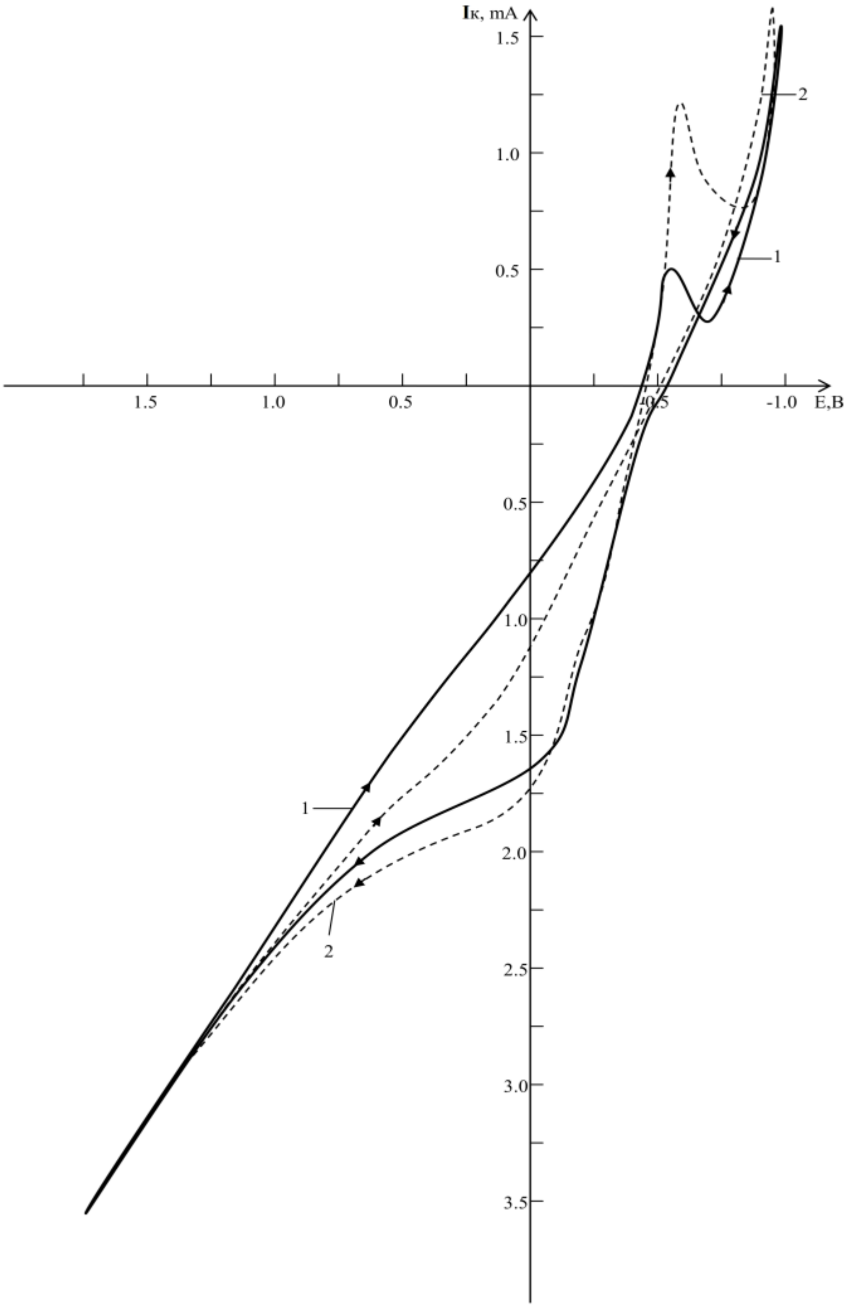

Figure 1 – Cathode-anode (1) and anodic-cathodic (2) cyclic polarization curves of a lead electrode: $[Pb^{2+}]$ = 10 g/l, $[HNO_3]$ = 10 g/l; v = 10 mV/s; t = 20 °C

During the polarization of the lead electrodes by a nonstationary current in an acidic medium in anode half-period, the lead electrode dissolves according to the following reaction:

$$Pb^0 - 2e \rightarrow Pb^{2+} \qquad E^0 = -0.13\ B \tag{1}$$

At the same time, the hydrogen ion reduction reaction proceeds:

$$2H^+ + 2e^- \rightarrow H_2\uparrow \tag{2}$$

Perhaps, in the solution, lead(II) ions interact with nitrate ions by the reaction:

$$Pb^{2+} + 2NO_3^- \rightarrow Pb(NO_3)_2 \tag{3}$$

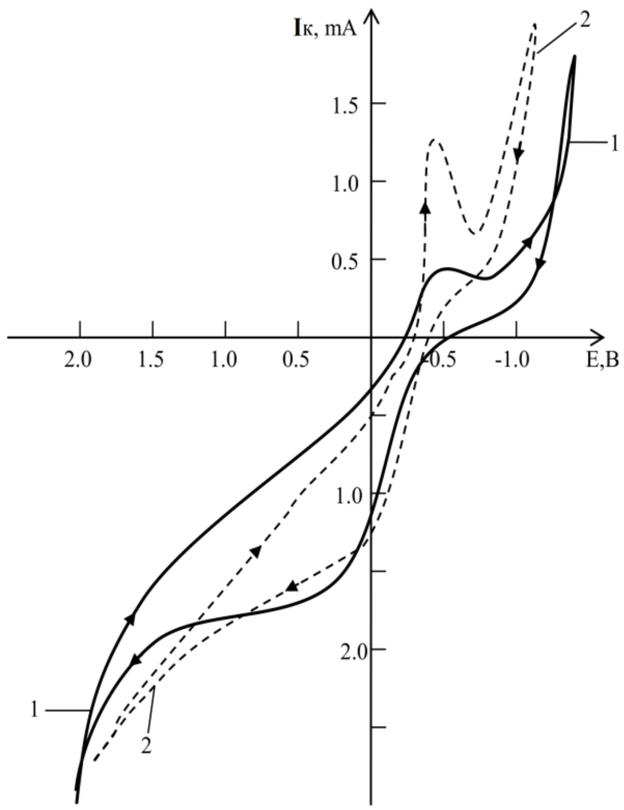

Figure 2 – Anodic-cathode (1) and cathodic-anode (2) cyclic polarization curves of a lead electrode: $[Pb^{2+}]$ = 10 g/l, $[HNO_3]$ = 10 g/l; v = 10 mV/s; t = 20 °C

For the characterizing of the mechanism of lead electrooxidation process based on processing of polarization curves the following kinetic parameters have been determined: charge transfer coefficients (α), heterogeneous rate constants (k_s) of the electrode process (table 1) and effective activation energy of the process (E_a). Calculation of kinetic parameters (α, k_s) was carried out at temperatures of 20-25 °C and sweep speeds of 20-80 mV/s.

Table 1 – The values of transfer coefficients (α) and heterogeneous rate constants (k_s) of lead oxidation

t, °C	V, mV/s			
	20	40	60	80
Transfer coefficients (α)				
20	0.31	0.24	0.21	0.17
25	0.38	0.26	0.22	0.21
Heterogeneous rate constants ($k_s \cdot 10^3$, $cm \cdot s^{-1}$)				
20	2.93	3.20	2.98	3.14
25	2.79	4.61	2.61	4.30

By the values of the potential peak E_P and the half-peak $E_P/_2$ of the voltammograms, the transfer coefficient (α) of the electrons for the anode process was calculated by the Matsuda and Ayabe equation [18]. Calculation of heterogeneous rate constants of electrode processes is carried out by the Matsuda equation [19].

An increase in the sweep rate of the potential, as can be seen from table 1, determines a decrease in the value of α at temperatures of 20-25 ° C to 0.17-0.21, respectively, characteristic of irreversible processes. Small values of the rate constants of electrode processes also indicate the irreversibility of the electrochemical reaction proceeding from equation (1). The calculated value of the activation energy as a function of temperature according to the Arrhenius equation is 23.53 kJ/mol. Analysis of the obtained results and calculated kinetic parameters of electrode processes showed that the electrooxidation process of lead has a mixed nature of control, which allows us to draw a conclusion about the diffusion-kinetic regime of the electrode process.

It is established that in the case of the polarization with alternating current of two electrodes, they dissolve in a very small amount. During replacing one of the electrodes with a graphite electrode, dissolution of a second electrode made from a lead plate is observed. At the same time the graphite electrode is in the cathode half-cycle, the lead electrode is in the anode half-period and dissolves, forming divalent lead(II) ions.

In the work the influence of various parameters of electrolysis: the current density on lead and graphite electrodes, the concentration and temperature of the electrolyte, the duration of electrolysis, the frequency of alternating current on the electrochemical behavior of lead electrodes in a nitric acid medium under alternating current polarization is studied.

The influence of current density of a lead electrode in the range of 400-1000 A/m^2 was investigated, and a graphite electrode with a constant current density of 40 kA/m^2 used as an auxiliary electrode. When the current density on the lead electrode is increased, the current yield decreases from 98.1 to 20.3%. A decrease in the current output is probably due to the oxidizing properties of nitrate ions at high current densities, an oxide film is formed on the surface of the electrodes and passivation of the lead electrode is observed.

The effect of the current density of a graphite electrode under polarization by the alternating-current the current output of dissolving a lead electrode was also investigated. The current density at the lead electrode was kept constant – 400 A/m^2, and on graphite it varied in the range of 20-120 kA/m^2. By increasing of the current density on the graphite electrode, the yield of the lead electrode dissolution current decreases (table 2).

Table 2 – Effect of the current density of a graphite electrode on the current output of dissolving the lead electrode
(i_{Pb} = 400 A/m^2, C_{HNO3} = 1 M, τ = 0.5 h, t = 20 °C, ν = 50 Hz)

$i, kA/m^2$	20	40	60	80	100	120
Current output, %	93	87	70	51	48	46

In the work, the effect of the electrolyte concentration on the current output of lead(II) ions has also been studied. By increasing the molar concentration of nitric acid to 3.0 M, the current output of the formation of lead(II) ions increases. An increase in the current output when polarized by a non-stationary current of the industrial frequency is due to simultaneous chemical dissolution of the lead electrode (table 3).

Table 3 – Chemical dissolution of lead electrode in nitric acid

$C_{M, HNO3}$	0.5	1.0	1.5	2.0	2.5	3.0
Δm, g	0.0003	0.0106	0.0505	0.0861	0.0955	0.0723

For the determining of the order of the reaction, the influence of the concentration of lead(II) ions on various electrodes is studied. The rectilinear dependences lg i - lg [Pb(II)] are obtained, according to which the order of the reaction was calculated equal: 0.5 on a lead electrode, 0.8 on a graphite electrode, and -1.0 on platinum.

The effect of temperature on the electrochemical behavior of a lead electrode in an acidic medium under polarization by a nonstationary current was also investigated. Based on the results of the research, it is shown that with an increase in the temperature of the solution from 20 to 80 °C and a constant current density on a lead electrode of 400 A/m^2, the lead dissolution current output rises from 31% to 160%. It is likely that an increase in the temperature of the electrolyte leads to an increase in the activity of the acid molecules, as a result of which both the mobility of the ions and the rate of formation of the final products of electrolysis increase.

In a solution of nitric acid at a constant current density of 400 A/m^2 and a variation in the duration of electrolysis in the range 0.25-1.25 h, the lead current dissolution rate of the lead electrode decreases from 98% to 12%. The decrease in current output with increasing duration of electrolysis is probably due to a decrease in the concentration of lead(II) ions in the volume of the electrolyte.

The influence of current frequency as one of the main electrochemical parameters is also studied in the paper. Of particular interest, the study of the influence of the frequency of the current in the interval 500-3000 Hz on the electrical dissolution of lead in a solution of nitric acid had. An increase in the value of the frequency of the alternating current leads to a decrease in the output current of dissolving the lead electrode from 89.2% to 4%. This decrease is due to the shortage of the time of the electrooxidation reaction in the anode half-period, that is, the rate of oxidation reaction of lead ions slows down according to equation (1) as the frequency of the current increases, and the hydrogen ion reduction process according to equation (2) is mainly observed.

As a result of carrying out electrolysis during the polarization of the lead electrode, the main product of electrochemical synthesis is lead(II) nitrate. X-ray phase analysis (ASTM 36-1461) was carried out, which proves the identification of this compound [20]. All the reflections correspond to the phases of lead nitrate $Pb(NO_3)_2$: 4.5 Å; 3.92 Å; 3.5 Å; 2.78 Å; 2.37 Å; 2.27 Å; 1.97 Å; 1.75 (figure 3).

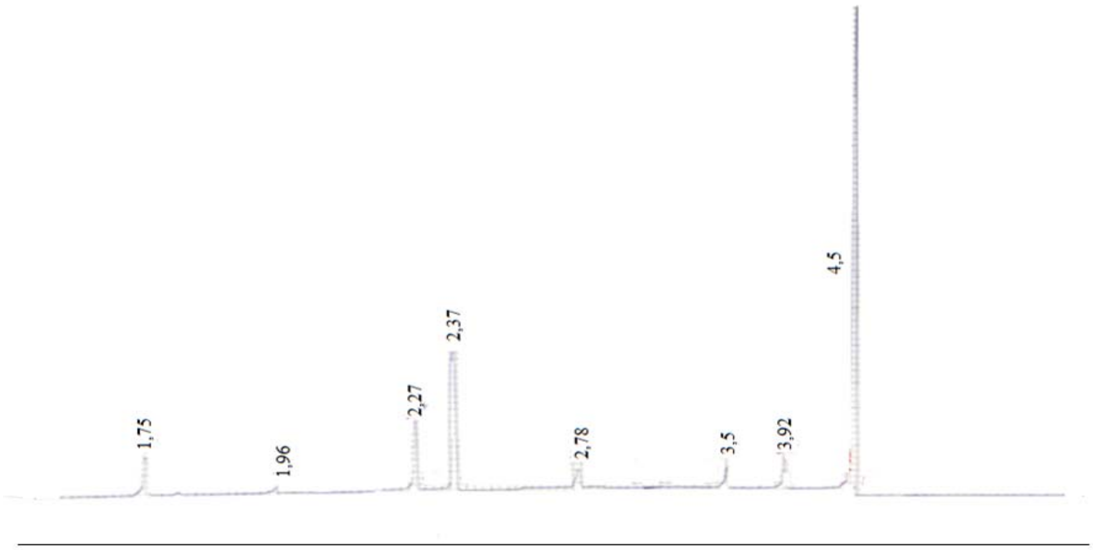

Figure 3 – Radiograph of lead(II) nitrate
(i_{Pb} = 400 A/m^2, $i_{graphite}$ = 20 kA/m^2, C = 2 M, t = 20 °C, τ = 0.5 h)

The experimental results obtained during the polarization of the lead electrode by an industrial alternating current in a solution of nitric acid showed the possibility of electrosynthesis of nitric acid compounds of various metals. As a result of carried out studies developed of favorable conditions of electrolysis: i_{Pb} = 400 A/m^2; $i_{graphite}$ = 20 kA/m^2; C = 2 - 2.5 M; τ = 0.5 h; t = 20 °C; ν = 50 Hz. Electrolysis measurement data allow achieving high values of the current output of lead(II) ions up to 96-98%.

Conclusion. Thus, on the based of the potentiodynamic polarization curves, the mechanism of electrooxidation lead established and the kinetic parameters of the electrode process, which proceeds in the diffusion-kinetic regime, estimated. Investigations of the basic parameters of electrolysis made it possible to determine the optimum conditions for the preparation of the nitrate-acid salt of lead(II).

In the non-stationary mode of electrolysis, lead electrodes exhibit electrochemical activity and dissolve in nitric acid with the formation of lead(II) nitrate compounds. On the basis of the obtained results, the possibility of electrosynthesis of nitrate salts of metals used in various sectors of the national economy is shown by electrochemical treatment of environmentally harmful metal waste.

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АЙНЫМАЛЫ ТОКПЕН ПОЛЯРИЗАЦИЯЛАУ КЕЗІНДЕ ҚОРҒАСЫННЫҢ КИНЕТИКАЛЫҚ ЗЕРТТЕУЛЕРІ МЕН ЭЛЕКТРОХИМИЯЛЫҚ ҚАСИЕТТЕРІ

Аннотация. Потенциодинамикалық әдіспен қышқылдық ортада қорғасын және графит электродтарын айнымалы токпен поляризациялау кезінде қорғасынның электрохимиялық қасиеттері мен кинетикасы зерттелген. Қорғасын электродында айнымалы токпен поляризациялау кезінде жүретін электродты процестердің механизмін анықтау үшін анод-катодты және катод-анодты циклді поляризациялық қисықтар түсірілді. Поляризациялық өлшеулердің мәліметтері бойынша кинетикалық параметрлер: заряд тасымалдау коэффициенттері (α), электродты процестің гетерогенді жылдамдық константасы (k_s) және эффективті активтену энергиясы (E_a) есептелген. Зерттеулер нәтижелері бойынша корғасын электродының электрохимиялық белсенділігі және айнымалы токпен поляризациялау кезінде оның әртүрлі қосылыстардың синтезін жүргізуге болатыны анықталды.

Түйін сөздер: қорғасын, электрод, айнымалы ток, электртотығу, электрлік еру, кинетикалық параметрлер.

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КИНЕТИЧЕСКИЕ ИССЛЕДОВАНИЯ И ЭЛЕКТРОХИМИЧЕСКОЕ ПОВЕДЕНИЕ СВИНЦА ПРИ ПОЛЯРИЗАЦИИ ПЕРЕМЕННЫМ ТОКОМ

Аннотация. В работе исследованы кинетика и электрохимическое поведение свинца при поляризации переменным током, протекающих на свинцовом и графитовом электродах в кислой среде потенциодинамическим методом. Для выяснения механизма электродных процессов, протекающих при поляризации переменным током на свинцовом электроде, были сняты анодно-катодные и катодно-анодные циклические поляризационные кривые. По данным поляризационных измерений рассчитаны кинетические параметры: коэффициенты переноса заряда (α), гетерогенные константы скорости электродного процесса (k_s) и эффективная энергия активации процесса (E_a). Приведенные результаты указывают на высокую электрохимическую активность свинцового электрода и перспективность их использования в электролизе при поляризации переменным током для синтеза различных соединений свинца.

Ключевые слова: свинец, электрод, переменный ток, электроокисление, электрорастворение, кинетические параметры.

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HIGH SPEED DEVICE FOR MODULAR REDUCTION

Abstract. It points to the advantages of hardware implementation of encryption. Hardware implementation of cryptosystems allows to increase their speed. But the low-speed of asymmetric cryptosystems, in comparison with symmetric cryptosystems, even with hardware implementation limits their application. The most used asymmetric crypto algorithm is the RSA encryption algorithm. Modular reduction is a time-critical operation that slows down the implementation of the RSA algorithm. The structure of a fast modular reduction device is proposed, in which a modified division method with a shift of the remainders by two bit positions to the left is used. This allows to speed up the receipt of the remainder twice.

Keywords: hardware encryption, asymmetric cryptoalgorithms, modular reduction.

Introduction. Cryptographic methods of information protection are indispensable in the transfer of confidential information through communication channels, establishing the authenticity of transmitted messages, storing information on storage media. Hardware implementation of cryptographic algorithms allows you to perform data encryption much faster and safer than software implementation. The development of modern microelectronics allows you to place the cryptoprocessor on a single chip [1-3].

Specialized hardware devices of cryptographic protection are not only more reliable and productive in comparison with software encryption. The list of advantages of hardware encoders that realize both symmetric and asymmetric crypto algorithms is much wider [4].

In practical implementation, the problem of high-speed symmetric cryptosystems (systems with a secret key) is the problem of key distribution. To solve this problem, asymmetric cryptosystems (two-key systems with a public key) were proposed. Asymmetric cryptosystems, in comparison with symmetric cryptosystems, have a lower speed, but there is no problem of transferring and confirming the authenticity of secret keys. Cryptography with public keys is better corresponds for key management and for protocols.

Algorithm of RSA encryption. From asymmetric cryptoalgorithms, the RSA encryption algorithm (Rivest, Shamir and Adleman, 1978), which is based on an irreversible transformation (decomposition of large numbers into prime factors), is most widely used in practice. RSA is part of ISO 9796, it is used as a public key encryption standard in the banking sector of France and Austria. Currently, the RSA algorithm is used in many protocols and programs, including:

– the S/MIME (Secure/Multipurpose Internet Mail Extensions) application layer protocol for encrypting and signing in e-mail using a public key;

– the SSH application layer protocol, in which the algorithms for the digital signature of RSA (DSA) is used for server authentication;

– the TLS (Transport Layer Security) presentation layer protocol and its predecessor SSL (Secure Sockets Layer), which are the basis of HTTPS (Hyper Text Transfer Protocol Secure);

– a set of IPSec (IP Security) network layer protocols, including authentication, integrity check and encryption of IP packets;

– the STT (Stateless Transport Tunneling) tunneling protocol for network virtualization;

– the PGP (Pretty Good Privacy) program that allows you to perform encryption and digital signature operations for messages, files and other information presented in electronic form, including transparent data encryption on storage devices, for example, on a hard disk;

– a family of standards PKCS (Public Key Cryptography Standards) designed for secure information exchange on the Internet using PKI (Public Key Infrastructure).

Therefore, many studies are focused at improving the performance of crypto-algorithm RSA.

Hardware solutions for modular reduction. To develop a high-speed RSA cryptoprocessor, it is necessary to develop fast-acting blocks of hardware implementation of algorithm operations. The basic operation of the RSA algorithm is the modular exponentiation of integers (a^xmod p). This operation is realized through multiplication, squaring and modular reduction. One of the approaches to improve the performance of public key cryptosystems is the acceleration of these operations. The most complex of them is the modular reduction operation, since it is the calculation of the remainder from dividing the number by the module P, and the division operation is the most complex of the arithmetic operations.

Theoretical and practical questions of high-speed integer multipliers and quadrants for a different class of computing systems are well developed, which cannot be said about the modular reduction. The high-speed hardware solution of the modular reduction operation is a key problem in the hardware implementation of asymmetric cryptoalgorithms that use the modular exponentiation of numbers, including RSA.

There are many different methods of calculating the remainder when dividing by the module *P* [5-10]. When using the binary (usual) representation of integers, it is possible to distinguish three types of device structures of modular reduction depending on the principle of remainder formation.

In the first type of devices blocks of formation of multiple modules $P*i$ $(i = 1, 3, ..., k)$ are used. Then these values are simultaneously (in parallel) subtracted from the reducible number *A* on *K* adders. The least positive remainder $C_i=A-P*i$ is the result [11]. This type of device has a high speed, but with increasing values of *A* and *P*, the complexity of circuits and hardware costs increase. RSA uses numbers of the order of 10^{309}, which makes it impossible to use this type of device in the practical implementation of RSA.

The second type of devices uses the method of forming the remainders (r_i) of the bit weights of the binary number (2^i) from division by module *P*. The calculated remainders modulo 2^i $(i = 0, 1, ..., k-1)$ are summed if the coefficients of the corresponding weights of the number A_i are equal to 1. The summation is carried out successively on *K-1* modulo adders *P* [12]. It is implemented by the formula: $A \, mod \, P = (\sum_0^{k-1}(2^i mod\ P)A_i) mod\ P$. Sequential summation on *K-1* adders for large digits (*k-1*) has a negative effect on the speed of the device.

The third type of devices uses various modified methods of a machine algorithm for binary division, which leads to a wide variety of structures. When division is used with a divisor shift to the right, it is possible to obtain various device structures, one of which is given in [13].

Device structure for modular reduction. In this paper, we consider a device for fast modular reduction of a number with a shift of the remainder to the left. At each step of the calculation, the value of either tripled *(3p)* or doubled *(2p)* or single value of the module *(p)* is subtracted from the remainder r_{i-1} that shifted by two bit positions to the left. This allows to accelerate the calculation of reducing the *2n*-bit number *A* by the *n*-bit module *P* twice.

The binary representation ($2p$ and $3p$) and ones' complement ($2\bar{p}$ and $3\bar{p}$) of the doubled and tripled module are precomputed. Then, previous remainder r_{i-1} multiplied by the four, i.e. $4r_{i-1}$ is compared on the comparators with the values *3p, 2p, p* and it is determined which of the following operations must be performed in order to compute the value of the next remainder r_i: $r_i = 4r_{i-1} - p$, or $r_i = 4r_{i-1} - 2p$, or $r_i = 4r_{i-1} - 3p$. In the adder all operations are performed in the two's complement, so $r_i = 4r_{i-1} + \bar{p} + 1$, or $r_i = 4r_{i-1} + 2\bar{p} + 1$ or $r_i = 4r_{i-1} + 3\bar{p} + 1$ is determined and formed.

A functional diagram of such a device is shown in figure 1.

The device consists of a (2n+2)-bit register *RgA*, where the reducible number *A* is stored and shifted by two bit positions to the left, the register *RgP* for storing the n-bit module *P*, the adder *Add1* for calculating the ones' complement of the tripled module value $3\bar{p}$ (by summing $2\bar{p}$ with $\bar{p}$).

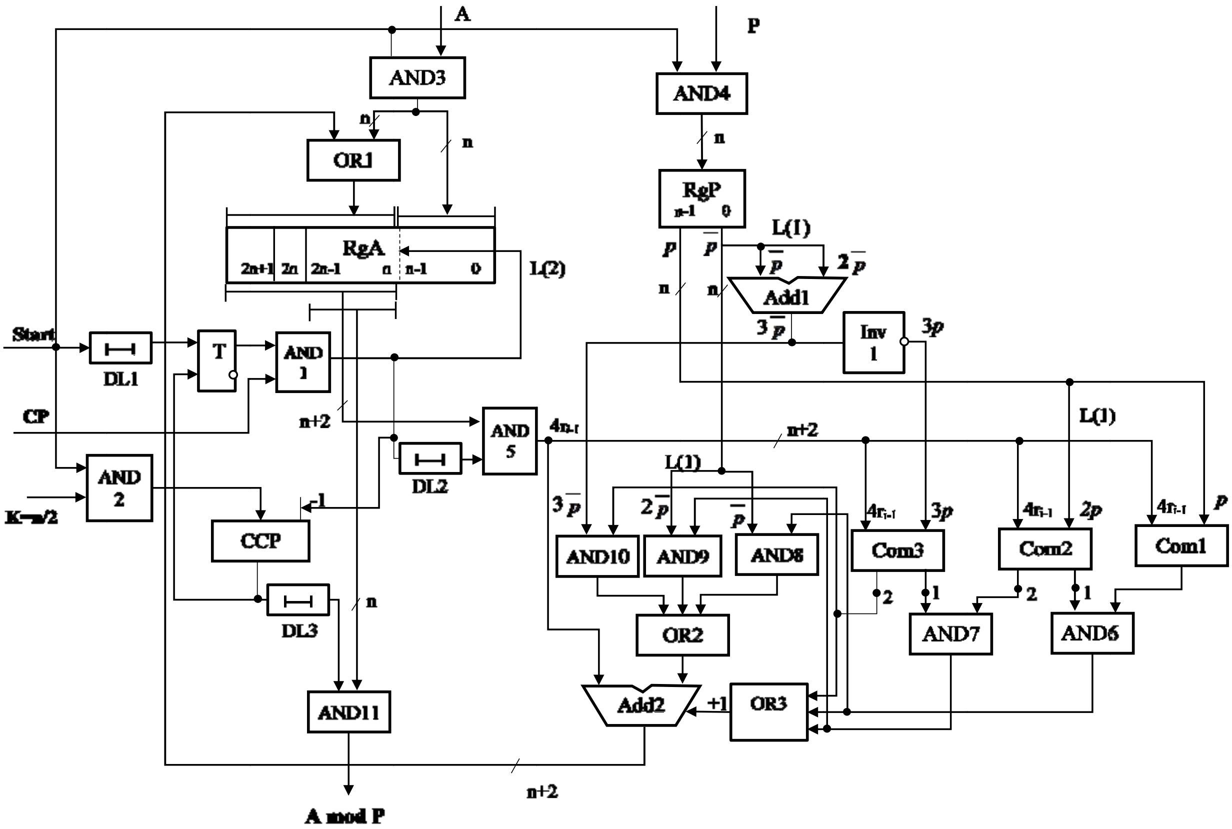

Figure 1 – High speed device for modular reduction

Values of *3p* are formed by inverting the output bits of *Add1* on the block of inverters *Inv1*. In the comparator *Com1*, the codes $4r_{i-1}$ and *p* are compared.

If $4r_{i-1}< p$, then a *"0"* signal is generated at its output. Conversely, if $4r_{i-1} \geq p$, then the signal *"1"* is generated at the output of this circuit.

The *Com2* compares the value $4r_{i-1}$ with the value of the module *2p*. If $4r_{i-1}< 2p$, then at the output 1 of this circuit, the signal *"1"* is set. If $4r_{i-1} \geq 2p$, output 1 is set to *"0"* and at the output 2 is signal *"1"*.

The *Com3* compares the codes $4r_{i-1}$ and *3p*. If $4r_{i-1}< 3p$, then at the output 1 of this circuit a *"1"* signal is formed and *"0"* is set at the output 2. In case, $4r_{i-1} \geq 3p$, at the output 1 is formed by the signal *"0"* and at the output 2 the signal *"1"* is set.

Table 1 shows the executable operations, depending on the ratios of $4r_{i-1}$ with different values of the modules *p, 2p* и *3p*.

Table 1 – Executable operations for different ratios $4r_{i-1}$ with *p, 2p, 3p*

Ratios	Executable operations
$4r_{i-1}< p$	$r_i = 4r_{i-1}$
$p \leq 4r_{i-1}< 2p$	$r_i = 4r_{i-1} + \bar{p}+1$
$2p \leq 4r_{i-1}< 3p$	$r_i = 4r_{i-1} + 2\bar{p}+1$
$3p \leq 4r_{i-1}$	$r_i = 4r_{i-1} + 3\bar{p}+1$

According to this table, when $4r_{i-1}< p$, the value $4r_{i-1}$ with *OR1* gates is written without changes to *RgA*.

With the ratios $p \leq 4r_{i-1}< 2p$, a signal *"1"* is generated at the output of the *AND6* gates, which is simultaneously fed to the inputs of *OR3* and *AND8* gates, the second input of the *AND8* gates are supplied with bits $\bar{p}$. Output *AND8* gates are fed to the right inputs of the adder *Add2* via the *OR2* gates. On the left inputs *Add2*, the codes of the value $4r_{i-1}$ are fed, and through *OR3* the signal *"+1"* is fed to the input of the lowest order bit position of this adder, the operation $r_i = 4r_{i-1} + \bar{p} + 1$ is performed. The result through the block of *OR1* gates is transmitted to the highest order bit positions of the register *RgA*.

When conditions $4r_{i-1} \geq 2p$ and $4r_{i-1} < 3p$ are satisfied, a signal *"1"* is generated at the output of the *AND7* gates, which is fed to the input of the *OR3* gate and the block of the *AND9* gates. At the second data inputs of *AND9* are fed the bits of module $2\bar{p}$. Output *AND9* gates through the block of OR2 gates are fed to the right inputs of the *Add2*, and the code *"+1"* is supplied to the input of the lowest order bit position and the operation $r_i = 4r_{i-1} + 2\bar{p} + 1$ is performed in the adder. The result through the block of *OR1* gates is transmitted to the highest order bit positions of the register *RgA*.

With the ratios $4r_{i-1} \geq 3p$ from output 2 of the comparator *Com3*, a signal *"1"* is applied to the input of the *OR3* gate and to the control inputs of the *AND10* gates. At the data inputs of *AND10* gates are fed with bits of the module *p* multiplied by three $(3\bar{p})$ from the outputs of the adder *Add1*. Codes $3\bar{p}$ through the block of *OR2* gates are transmitted to the right inputs of the *Add2*, to the left inputs of this adder bits of code $4r_{i-1}$ are fed. In this case, the operation $4r_{i-1} + 3\bar{p} + 1$ is performed in the adder. The result of the operation through the block of *OR1* gates is written to the highest order bit positions of the register *RgA*.

The high speed modular reduction device works as follows.

With the signal *"Start",* the reducible number *A* and the module *P* by means of the blocks *AND3* and *AND4* gates, respectively, are received in the registers *RgA* and *RgP*. From the true outputs of the register the value of the true representation of the module *p* is transferred to the right inputs of the comparator *Com1* and shifted to the left by one bit (*2p*) is fed to the right inputs of the comparator *Com2*. From the complementary outputs of *RgP*, a ones' complement module $\bar{p}$, which is fed to the data inputs of the block of *AND8* gates and to the left inputs of the adder *Add1*. The value $3\bar{p}$ from output *Add1* is fed to the left inputs of *AND10* gates. The value $3\bar{p}$ is inverted by the inverters block *Inv1*, forming the value *3p*, which is fed to the right inputs of the comparator *Com3*.

Also, with the signal *"Start"* through the block of *AND2* gates the binary code of the number of cycles K = *n*/2 is received in the subtracting counter of the clock pulses (*CCP*). In addition, the *"Start"* signal, the delayed on delay line *DL1* for the time of recording information in *RgA* and *RgP*, is fed to the one-input of the flip-flop *T*. Flip-flop is set of to the one condition. The one condition of the trigger permits the passage of the first clock pulse *CP1* to the output of the *AND1* gate. Further, *CP1* arrives at the input of the shift register *RgA* and shifts it two bit positions to the left, increasing the contents of *RgA* by four. At the same time, the value of the counter decreases by one by the pulse *CP1*. During shift of information in *RgA CP1* is delayed on *DL2*. After this, the shifted by two bit positions content of *RgA* through the block of the *AND5* gates is transferred to the left inputs of the adder *Add2, Com3, Com2, Com1*.

Further, depending on the ratio of the $4r_{i-1}$ code and the values of the modules *3p, 2p* and *p*, a signal *"1"* is generated either at the output of the *AND*6 or *AND*7 gates, or at the output 2 of the comparator *Com3*. According to the generated signal *"1"*, the calculation r_i is performed with reference to table 1. The resulting partial remainder r_i by the block *OR1* gates is transmitted to the register *RgA*, being memorized in the highest order bit positions of the register *RgA*. At this point, the circuit receives a second clock pulse *CP2*, which passes through the block of *AND*1 gate and shifts *RgA* another two bit positions to the left, forming the value $4r_i$. Simultaneously, *CP2* arrives at the subtracting input of the *CCP* and reduces its state by one. The value $4r_i$ from the outputs of the *AND*5 gates goes to the inputs *Add2, Com3, Com2, Com1*. In the adder *Add2* the intermediate remainder r_{i+1} is calculated, which is transmitted to the highest order bit positions of the register *RgA*.

After the $n/2^{th}$ clock pulse arrives in the *CCP*, a zero code is set and the signal *"End of operation"* is generated, which is fed to the zero-input of the flip-flop T and blocks the passage of the next clock pulse to the output of the AND1 gate. The last clock pulse calculates the last remainder $r_{n/2}$, which is stored in the highest order n-bit positions of the register *RgA*, which is the result of the calculation. The result from *RgA*, on the signal *"End of Operation",* which was delayed on *DL3*, is output by the block the *AND11* gates to the output.

Results. The presented device allows to accelerate the calculation by reducing the *2n*-bit number *A* modulo *P* by two times. The number of cycles necessary to reducing any number A modulo P is defined as $K = n/2$, where *n* is bits of the module P. For this device, a certificate of authorship has been obtained [14].

Conclusion. When processing a large amount of data on the same algorithm, the most productive are the pipeline structures. When encrypting data, the modular reduction operation is performed for a large amount of different numbers. Therefore, to increase the speed, it is advisable to use pipeline structures. When pipelining, the whole process is divided into a sequence of completed steps. Each of the stages of the division procedure is computed at its stage pipeline, with all stages running in parallel.

On the base of the modification of the above device, it is possible to construct a pipelined device for formation of the remainders by arbitrary module *P* of the number *A*.

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ЖЫЛДАМДЫҒЫ ЖОҒАРЫ МОДУЛЬГЕ КЕЛТІРУ ҚҰРЫЛҒЫСЫ

Аннотация. Криптожүйелерді аппартты жолмен іске асыру олардың жылдамдығын арттыруға мүмкіндік береді. Алайда асиммериялық криптоалгортмдердің төмен жылдамдығы олардың қолданылуын шектейді. Көп қолданысқа ие асимметриялық криптоалгоритм RSA шифрлау алгоритмі болып табылады. Модульге келтіру операциялар ішіндегі RSA алгортмін іске асыруды баяулататын уақыт бойынша ең қиыны болып табылады. Қалдықты екі разрядқа солға жылжытатын бөлу әдісінің түрөзгерсі қолданылатын жылдамдығы жоғары модульге келтіру құрылғысының құрылмы ұсынылады. Бұл қалдық алуды екі есеге жылдамдатуға мүмкіндік береді.

Түйін сөздер: аппаратты шифрлау, асимметриялық криптоалгоритмдер, модульге келтіру.

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БЫСТРОДЕЙСТВУЮЩЕЕ УСТРОЙСТВО ДЛЯ ПРИВЕДЕНИЯ ЧИСЕЛ ПО МОДУЛЮ

Аннотация. Аппаратная реализация криптосистем позволяет повысить их быстродействие. Но низкое быстродействием ассиметричных криптосистем ограничивает их применение. Самым используемым асимметричным криптоалгоритмом является алгоритм шифрования RSA. Приведение по модулю является критичной по времени операцией, замедляющей реализацию алгоритма RSA. Предлагается структура устройства быстрого приведения по модулю, в котором используется модифицированный метод деления со сдвигом остатков на два разряда влево. Это позволяет ускорить получение остатка в два раза.

Ключевые слова: аппаратное шифрование, асимметричные криптоалгоритмы, приведение по модулю.

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FORMATION OF THE SOCIAL ECONOMY IN KAZAKHSTAN: THEORY, METHODOLOGY, MECHANISM OF FORMATION

Abstract. The article presents the global trends in the formation of the knowledge economy of today's reality, as well as qualitatively new requirements for human capital, not only as the main productive factor in creating new highly efficient technologies, but also an important element contributing to the active development of the social sphere, science, education, health, etc.

The change in the role of human capital in modern economic conditions is due to the transformation of knowledge into the main strategic resource, which causes the strengthening of scientific and practical progress as the main aspect of innovative, socio-economic development of Kazakhstan, due to the need to form a social mechanism in the context of political and social modernization of society The aim is to improve the level and quality of life of the population, to mitigate the contradictions between the participants.

Keywords: formation, social economy, theory, methodology, mechanism, formation.

Introduction. Kazakhstan is building a new development strategy that takes into account the global context that has changed in recent years. In general, this strategy is formulated in the Address of the President of the Republic of Kazakhstan N.A. Nazarbayeva Strategy "Kazakhstan - 2050": a new political course of an established state. "Solving the tasks set in the Message of the President N.Nazarbayev to the people of Kazakhstan “Nurly Zhol - The Path to the Future”, overcoming global challenges, achieving sustainable development requires the development of scientifically based approaches to the formation of a new quality of human capital as a driving force of global development. The policy of modernization of Kazakhstan qualitatively changes the requirements for the functioning of the entire social system.

The social sphere of modern Kazakhstan is largely associated with the social policy of the state to solve social problems.

During the years of independent development of Kazakhstan, a good basis has been created for carrying out an active and effective social policy, which is the main element of the systemic transformation of society in Kazakhstan.

The social policy of the state is aimed at improving the level and quality of life of the population, at mitigating contradictions between participants in economic processes, and preventing social conflicts based on the polarization of the life of various groups of citizens.

Our country is among the fastest growing economies in the world and provides two thirds of the total income of all of Central Asia, representing only a quarter of its total population.

Main part. Since the state budget remains the main source of development of the social sphere, the budget expenditures should take into account the specifics of the Kazakhstani economy, the condition for effective growth of which is not only the priority development of knowledge-intensive and high-tech industries, but also industries contributing to the reproduction of human capital, and in particular health care and education. The concept of socio-economic development is a fundamental strategic document that scientifically substantiates the promising socio-economic development of a territory by defining the mission, as well as strategic goals, functions and directions for the development of a region and the means of implementing the selected priorities. The concept is comprehensive in terms of the scope of problems, the nature and method of implementation of the document, built based on a systematic approach to the management and research of territorial development and an objective analysis of the current socio-economic situation. the strengthening of the role of the state budget in social processes is due to the growth of budgetary funds and extra budgetary funds that are the financial base of social transformations, the transition to a higher level of social services for the population of the country, as well as to equalize the economic development of the country's regions through budget financing. The main role of the budget is that it annually mobilizes and concentrates cash savings of enterprises, organizations and people in a centralized state fund to finance the national economy, social and cultural events, strengthen the country's defense, for the maintenance of state authorities and the formation of reserves.

The budget affects the economy through a budget mechanism. This shows the role of the budget as a tool to influence the economy as a whole.

In our opinion, the following principles should underlie the concept of managing the socio-economic potential of modernization:

– potential is a dynamic characteristic and is detected only in the process of its use;

– the use of the potential of the socio-economic system should be accompanied by a steady increase;

– Utilization and capacity building processes are continuous and complementary.

The determining feature of the modernization potential of the regions is the priority character of not only the achieved level of the most important volumetric parameters, but also the dynamics of the economic and social development of the respective territory, which fundamentally distinguishes the potential ability of a particular region to modernize from the general level of its economic development, characterized exclusively static (level) indicators, such as, for example, gross regional product.

The standard of living for 2013-2017

	2013	2014	2015	2016	2017
Per capita nominal cash income of the population:					
Tenge	56453	62271	67321	76575	81529
US dollars	371,1	347,5	303,6	223,8	250,1
index of nominal cash income, as a percentage of the previous year	108,9	110,3	108,1	113,7	106,5
index of nominal cash income, as a percentage of 1995	3280,2	3618,3	3911,8	4449,4	4737,3
Money Income Index	102,9	103,4	101,4	99,3	99,1
as a percentage of the previous year	2,9	2,8	2,7	2,6	2,5
Percentage of the population with incomes below the subsistence minimum					
The size of the subsistence minimum	17 789	19 068	19 647	21 612	23 783
Tenge	116,93	106,41	88,61	63,16	72,95

Per capita nominal monetary incomes of the population have an annual growth dynamics of approximately 10%, so there is a decrease in the proportion of the population with incomes below the subsistence minimum by 0.1%. The size of the subsistence minimum also has a rapid growth rate of approximately 10%.

Based on the conducted socio-economic analysis, we identified a rather low readiness of most regions of Kazakhstan to implement modernization reforms. The main reasons for this are:

- insufficiently high level of GRP per capita in most regions of the Republic of Kazakhstan; substantial depreciation of fixed assets in the whole of Kazakhstan, as well as significant differentiation of the regions of Kazakhstan in terms of capital-labor ratio;

- low level of investment in fixed assets;

- insufficient financial support of science and scientific research, low degree of innovation activity, which is the reason for the low research intensity of production;
- uneven resettlement of labor resources, creating labor-surplus and labor-deficient regions;
- low level of life expectancy, population aging; high level of social and economic differentiation of the population.

In general, the structure of the Concept for the socio-economic development of the regions of the country, in our opinion, should look like this:

1. Assessment of the current state of affairs.
2. Mission.
3. General purpose.
4. SWOT analysis.
5. Priorities.
6. Strategy for their implementation.
7. Stages of implementation.
8. The detailed plan of events for 2018-2020.
9. A detailed plan of events for 2018.

According to the results of the study, the author of the work identified a set of main external and internal causes that impede the development of appropriate strategic documents of good quality: External causes (independent of the developers):

In carrying out the socio-economic modernization of the country, it is advisable to eliminate the shortcomings of the existing state regional policy and improve the methodological tools for managing the socio-economic development of regions

The essence of the innovation approach to management consists in the orientation of the economy of the republic towards the intensification of innovation activity, which is the engine of the economy and the management system itself. At the same time, the factors of production and investment should be the means of a scientifically based activity, and not its goal. The advantage of the above approach is that it assumes the recognition of the constant variability of the highly organized environment in which the economy operates. Therefore, it is necessary to reckon with the changes and adapt to them.

In the framework of the modernization of the regional economy, it is necessary to solve a number of problems, the most important of which, in terms of the modernization strategy, are:

– implementation of large target projects and programs; mobilization and rational use of financial, material, labor and other resources;

– the development of interregional integration of production, the formation of increasing the market maneuverability and sustainability of the systems of corporate production and commercial associations (corporations, concerns, associations, etc.), research and production complexes closely associated with small business, large and diversified territorial and economic complexes and regional (zonal) markets with significant commodity resources and market infrastructure;

– establishment of stable inter-district market relations;

– effective regulation of scientific and technical progress, the use and protection of natural resources, the establishment of leading directions for the intensification of production and resource conservation;

– determination of regional and sectoral priorities of structural adjustment, investment activity, organization of the system of state support for underdeveloped regions;

– establishment of rational and sustainable national economic proportions and relations, contributing to the stability of a single national economic space. A schematic diagram of these works is presented in Figure 3.

The peculiarity of the proposed scheme is its focus on general Kazakhstan tasks and parameters of modernization transformations.

Kazakhstan, as a sovereign state, to achieve its strategic goals should have a management system that takes into account the specifics of the republic to the maximum, due to centuries-old traditions, national, economic, political and other features. All this should be reflected in the new managerial paradigm and predetermine its specificity. Further reform of the Kazakhstani economy puts forward the requirement to create a reform management system in accordance with the principles of innovative creative management. Such management implies the ability to treat each problem being solved in the course of reforms in the integrity. At the same time, the formulation of the question, the development of methods for solving managerial problems and the selection of the best available alternatives become a single dynamic process. For sustainable economic growth, the concept of creating a mechanism of management renewal is needed, which should motivate and give targeted organizational forms to innovations in management, and through it in production and social spheres.

The essence of continuous planning is to develop a single document - a comprehensive plan (program) for the development of the region for 5 years. At the same time, the first year is considered in terms of (program - program) in detail, with a monthly (quarterly) breakdown of activities and planned indicators, the second - more comprehensively, with a semi-annual breakdown of activities and indicators, the third and subsequent years - without quarterly breakdown, in annual parameters. During the preparation of the plan (program) for the next year, the measures for the following years are constantly refined and supplemented, thus ensuring continuity and continuity of planning the implementation of the strategy and its management.

To implement the tasks of modernization of regional socio-economic systems, the institution of public-private partnership (PPP) has a significant potential. One of the conditions for forming an effective economic policy, increasing investment and innovation activity, increasing the country's competitiveness, and developing industrial and social infrastructure is the development of effective institutions for interaction between the state and business, which will increase GDP growth rates compliance with the needs of economic development, reduce the costs of all levels in the implementation of infrastructure projects. At the same time, cooperation ensures the improvement of the quality and availability of socio-economic infrastructure and factors of production, capital, labor, technology, as well as the development of interfirm cooperation ties, promotes exports and attracting foreign investment**.**

Conclusion. The study of the dynamics of the development of industries at the republican level shows their significance for the formation of indicators of the development of production and social spheres of the regions, since the achievement of the overall Kazakhstani macroeconomic indicators for the strategic outlook will be formed as a result of the functioning of regional socio-economic systems of the country.

Thus, summing up, we can say that in the modern concept of the budget should be a reliable tool for implementing the economic and social policy of the Government of the Republic of Kazakhstan. Moreover, the most important task at this stage is to ensure its transparency for all members of society. It is necessary to ensure that the state budget becomes a means of stabilizing public finances. It must be turned into a reliable support and guarantor for all beneficiaries defined by law.

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ҚАЗАҚСТАНДАҒЫ ӘЛЕУМЕТТІК ЭКОНОМИКАНЫ ҚҰРУ: ТЕОРИЯ, МЕТОДОЛОГИЯ, ФОРМАЦИЯЛЫҚ МЕХАНИЗМ

Аннотация. Мақалада қазіргі заманғы білімнің экономикасының қалыптасуындағы жаһандық үрдістер, сондай-ақ жаңа жоғары тиімді технологияларды құрудағы басты өндірістік фактор ретінде емес, сондай-ақ әлеуметтік саланың, ғылымның, білімнің, денсаулық сақтаудың белсенді дамуына ықпал ететін маңызды элемент ретінде адам капиталы үшін сапалы жаңа талаптарды ұсынады.

Қазіргі заманғы экономикалық жағдайлардағы адами капиталдың рөлін өзгерту білімнің ғылымның негізгі стратегиялық ресурсына айналуымен байланысты, ол қоғамның саяси және әлеуметтік жаңғыру контекстінде әлеуметтік механизмді қалыптастыру қажеттілігіне байланысты Қазақстанның инновациялық, әлеуметтік-экономикалық дамуының негізгі аспектісі ретінде ғылыми және практикалық прогрестің нығаюына себепші болады оның мақсаты халықтың өмір сүру деңгейі мен сапасын жақсарту, экономикалық процестерге қатысушылардың арасында қарама-қайшылықтарды жұмсарту.

Түйін сөздер: қалыптастыру, әлеуметтік экономика, теория, әдіснама, механизм, қалыптастыру

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СТАНОВЛЕНИЕ СОЦИАЛЬНОЙ ЭКОНОМИКИ В КАЗАХСТАНЕ: ТЕОРИЯ, МЕТОДОЛОГИЯ, МЕХАНИЗМ ФОРМИРОВАНИЯ

Аннотация. В статье представлены глобальные тенденции формирования экономики знаний сегодняшнего реалия, а так же качественно новые требования к человеческому капиталу не только как к основному производительному фактору в создании новейших высокоэффективных технологий, но и важному элементу способствующему активному развитию социальной сферы, науки, образования, здравоохранения и др.

Изменение роли человеческого капитала в современных экономических условия, обусловлено превращением знаний в главный стратегический ресурс, что вызывает усиление научно-практического прогресса, как главного аспекта инновационного, социально-экономического развития Казахстана, в силу необходимости формации социального механизма в условиях политической и социальной модернизации общества с целью улучшение уровня и качества жизни населения, для смягчение противоречий между участниками экономических процессов.

Ключевые слова: становление, социальная экономика, теория, методология, механизм, формирование.

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TRENDS OF DEVELOPMENT OF THE MANAGEMENT SYSTEM OF THE TAX SPHERE OF RK IN MODERN CONDITIONS

Abstract. In this article tendencies of development and the perspective directions of development of tax policy of Kazakhstan are considered. Tax system – the most important component of market economy. In article it is noted that in the conditions of market economy the tax system acts as the main instrument of regulation of economy and impact of the state on development of farms, definitions of priorities of social and economic development. Within this article are analysed success of economic reforming in our country on degree of which the directions transformation of tax system of society how budgetary and tax policy of the state will meet the requirements of time depend. It should be noted that the tax policy defining the principles and orientation of reform of tax system has to consider dynamics of economic and social processes in society that predetermines requirement of a constant research of this sphere of the public relations.

Keywords: tax system, tax institutes, tax administration, taxes, tax policy, tax benefits, tax mechanism.

Introduction. The tax system is one of the major economic regulators, a basis of the financial and credit mechanism of state regulation of economy. It is obvious that success of economic reforming in Kazakhstan to a large extent depends on in what directions transformation of tax system of the country how tax policy of the state will meet the requirements of time will go.

The questions connected with achievement of optimum level of relationship between the power and society were always important for Kazakhstan. But they have acquired special relevance during the modern period when the country is in great need in development of such domestic policy by means of which it will be possible to solve the most burning issues of modernization of the Kazakhstan society, to overcome on this basis crisis tendencies in economic and social spheres. The important part in this question is assigned to realization of tax policy which, on the one hand, has paramount value as the instrument of impact of the state on economic behavior of participants of the market relations and management of economic system. On the other hand, taxes and the system of the taxation act as object of management which in the conditions of the market takes the form of tax management: state and corporate. All who are somehow connected with taxes (public authorities, taxpayers) manipulate them, trying in various ways to operate tax streams. And, with complication of tax systems and economic relations as a result of globalization processes the role of tax management increases. Especially it concerns modern Kazakhstan where the market relations and institutes weren't created finally in the developed look yet.

Results of a research. Development of market infrastructure includes formation of the effective tax mechanisms providing growth of budget revenues and regulation of economic processes therefore the view of tax system as the institutional unity of the legislation, administration, the certain taxpayer harmonizing the economic relations of society is represented essentially important. The solution of the problem of ensuring sustained economic growth and increase on this basis of the standard of living of the population causes the need for further improvement of budgetary and tax system. In this regard the state in process of management of the tax relations needs to pass from use of the mechanisms of mainly fiscal orientation focused on providing the minimum social standards to the budgetary and tax mechanism which is actively realizing social and economic functions [1].

The tax mechanism can be defined as the internal device of tax system providing it functioning and representing set of the interconnected elements: the legal support (including the tax law), information support, methods of the organization, methods of management (including regulations); monitoring; analysis; forecasting; control (see the figure 1).

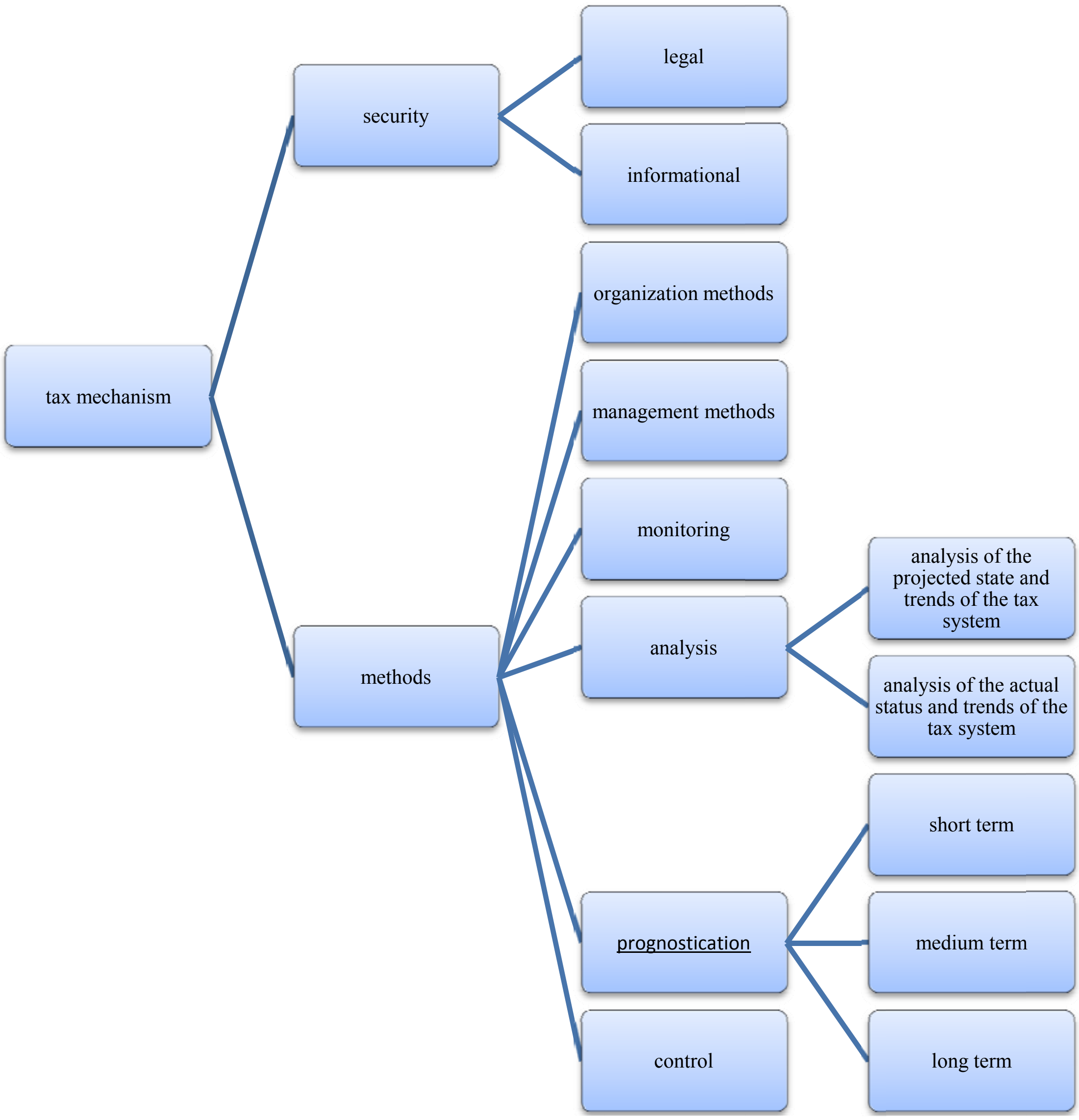

Figure 1 – Elements of Tax mechanism

In this regard there is a need for qualitatively other functioning of the tax system constructed on the modern principles of public administration by civil society in socially oriented market economy.

Formation and development of institute of tax administration act as one of the making fundamental transformations of tax system. Tax administration is the difficult social and economic and political phenomenon reflecting degree of development of market infrastructure, mechanisms of public administration, the principles of civil society. Therefore his studying is carried out by means of identification, the analysis and forecasting of development of its institutional bases. Use of institutional approach allows to consider reforming of tax administration as a harmonious element of system of institutional transformations and market transformations that is extremely relevant for formation of the evidence-based strategy of development of domestic economy. The research of processes of formation of institutes of tax administration is directly connected with search of ways of increase in efficiency of action of all tax system, with ensuring growth of tax revenues in the budget [2].

Tax administration – the control system of tax process established by the law, practice or customs from the state and its bodies. And also tax administration is understood as the dynamic developing control system of the tax relations coordinating activity of tax authorities in the conditions of market economy. Tax administration can be carried out as by means of methods of power (administrative) coercion – threats of application of penalties, arrest of bank accounts, other property of the taxpayer, restriction of his actions, freedom of movement, etc., and by the conclusion of agreements with taxpayers on these or those questions (accounting, use of tax benefits, payments of a tax, etc.) [3].

Recently, the method of regulation of alternatives – providing freedom of choice to taxpayers between the different options of a legal form of conducting his activity, an order of maintaining and drawing up account and the reporting, a way of execution of the obligation for payment of a tax allowed by the law, application and distribution of tax benefits, etc. becomes more and more widespread method of tax administration. In some countries transition is declared in tax administration from mainly compulsory, power methods to the cooperation relations (friendly partnership) with taxpayers [4].

Therefore, since January 1, 2018 small and medium business of Kazakhstan has received new favorable tax regime - the mode based on the fixed deduction (taking into account income and expenses). This mode gives the chance to read from revenues of taxable base 30% of revenue, without confirmation of similar deductions. Conditions of its application:

− a limit income per year – 12 260 multiple minimum size of the salary (for 2018 – 346 761 840 tenges) [5].

− the maximum number of hired workers is 50 people.

The Tax Code of PK 2018 provides new privileges taxpayers. The privilege for the taxpayers who are carrying out electronic trading in goods is very interesting (for example, trade in goods in Instagram). Income gained from electronic trading is exempted from KPN and IPN for 100%. This privilege will work till 2025.

Also some rates have been lowered, for example:

− the rate for the individual entrepreneurs working according to the patent from 2 Is lowered to 1% [4].

− the rate of a social tax on 1,5% – from 11 Is lowered to 9,5% (till 2025)

− the penalty fee size from 2,5 multiple official refunding rates of National Bank of Kazakhstan to 1,25 multiple Is reduced.

New rules of modification and additions in the Tax Code of RK. Since January 1, 2018 the provision of editing in the tax law can be adopted no more once a year no later than July 1 of the current year and are put into operation not earlier than January 1 of the year following after a year of their acceptance.

The new principle "Conscientiousness of the taxpayer", his main contents is entered:

All ambiguities and inaccuracies of the Tax Code will be interpreted in favor of taxpayers.

Penalties and penalty fee won't be applied if the taxpayer acted according to explanation of tax authority on which the position has changed subsequently.

The institute of a delay or payment by installments on payment of taxes and payments is entered. The delay or payment by installments on payment of taxes can be provided to the taxpayer whose financial position doesn't allow to pay a tax and (or) a payment at the scheduled time, however sufficient reasons to believe are had that the possibility of their payment will arise during the term for which the delay or payment by installments is granted.

The new Tax Code of RK has included the separate section devoted to general declaring of income of natural persons. Since 2020 all full age citizens of the Republic of Kazakhstan, the «oralmana» (The people turned to the historical rod) having the residence permit and a number of nonresidents will be obliged to hand over once a year the declaration on the income and the available property. All of us will be obliged to specify our income and property in the declaration, for example, money, the real estate, cars, the sums of accounts payable and the sum which owe us[6].

The purpose of transition to general declaring is control of income and property of natural persons for fight against shadow economy and corruption manifestations. General declaring is applied in many countries, such as Germany, the USA, Great Britain, Switzerland.

Also other questions connected with improvement of tax policy and tax administration such as will be provided: decrease in a rate of a social tax due to decrease in contributions to social insurance fund for decrease in load of the salary fund; preservation of a threshold on a value added tax (30 thousand MRP).

Discussion of results - According to the report of the World Bank of "Doing Business 2017" Kazakhstan in 2016 on the Taxation indicator Kazakhstan has taken the 60th place (57 earlier). Decrease on 3 positions is connected with change of methodology [7].

In relation to the 2016th year income of RK has grown by 2,8 trillion tenge while the deficiency of the consolidated budget was 2,21 trillion tenge.

According to data of the Ministry of Finance of the Republic of Kazakhstan, income of the consolidated budget (including both the republican, and municipal budget) for the 2017th year has grown by 35,0% to 10 808,7 billion tenges that makes 120,7% of execution of revenues of the budget.

Tax revenues, thanks to the continuing optimization (including growth of receipts from internal taxes on goods, works, services, the VAT), have grown by 23,2% or 1 658,7 billion tenges, to the level of 8 812,0 billion tenges. At the same time execution of taxes makes 98,4% of all receipts planned for 2017. Non-tax receipts were also higher planned for 19,8% or 50,6 billion tenges though their share in cumulative receipts of the budget remains at a low level; in 2017 they have made 2,8%.

So notable difference between the actual and planned income first of all is connected with increase in investment income. So, if it was planned that investment income from management of National fund for all 2017 will make 196,02 billion tenges, then the actual earnings in nine months 2017 have already made 1 611,94 billion tenges. We will note that in 2016 investment income has made 415,11 billion tenges [8].

For the first quarter 2017 tax collecting has made 1,6 trillion tenge, having increased by 14,3% in comparison with the first quarter of last year. This year according to the plan tax revenues will increase by 600 billion tenges or plus of 10% by 2016, having made 6,6 trillion tenge. From them 72% will go to the republican budget and 28% in local.

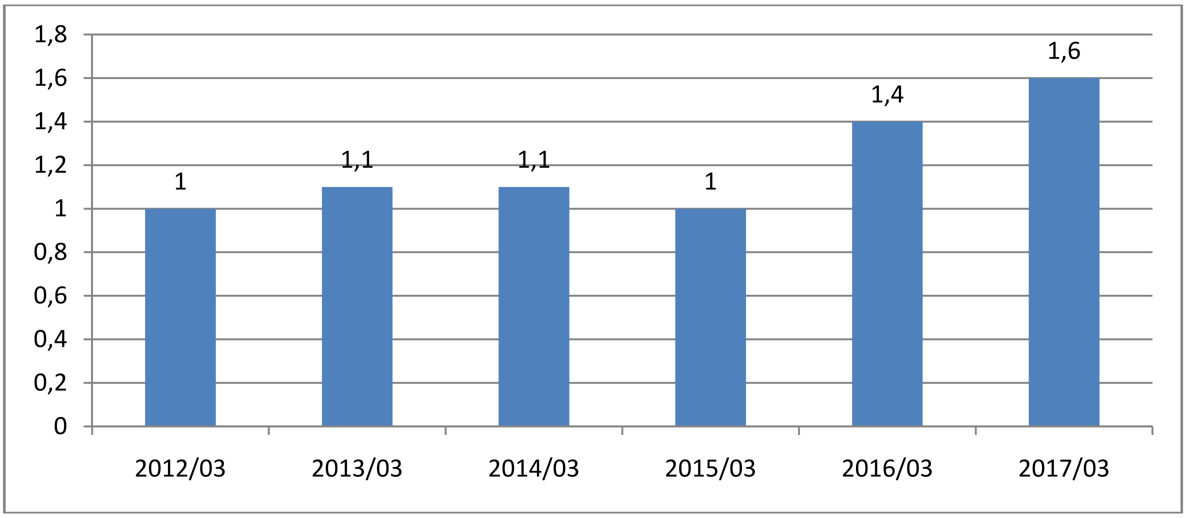

Figure 2 – Tax revenues to the state budget (trln.tg)

Receipts of KPN aren't the largest tax income of the country any more. Specific weight of KPN was 23% while the VAT - 24%. Tax collecting the VAT has increased by 19% by the same period of last year when growth of receipts on KPN was only 1%.

Sharp increase in receipts on the VAT indicates increase in sales of goods and services in RK and restoration of rates of business activity in national economy.

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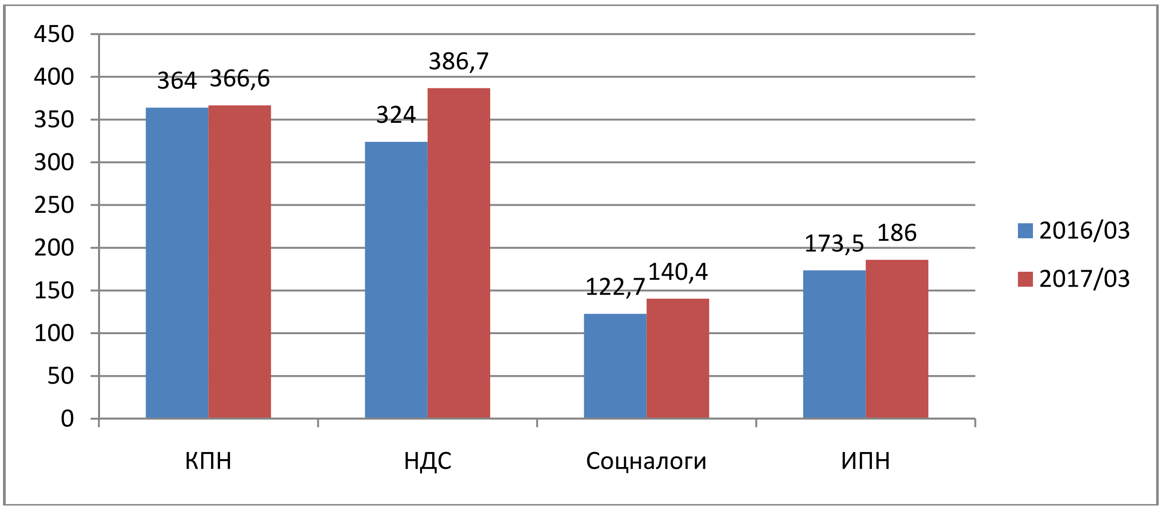

Figure 3 – Tax revenues to the state budget (billion tenge)

Tax revenues in the state budget of RK on regions. March, 2017 (one billion tenges)

Regions	Total		Growth for the year	
	2017/03	2016/03	2016/03	
Almaty	418,9	403,0	15,9	4,0%
Atyrau	241,2	193,0	48,2	25,0%
Astana	221,0	224,7	-3,7	-1,6%
Mangystau	82,1	74,7	7,4	9,9%
Almaty region	76,6	55,9	20,7	37,1%
EKR	74,2	48,1	26,1	54,3%
Aktube region	71,0	52,4	18,6	35,4%
SKR	69,8	62,5	7,4	11,8%
Karaganda	68,0	40,6	27,4	67,5%
WKR	65,7	54,4	11,3	20,7%
Pavlodar region	37,2	47,1	-9,9	-21,0%
Kostanay	36,6	25,8	10,8	42,0%
Akmola region	30,4	22,2	8,2	36,8%
Kyzilorda region	23,5	18,9	4,6	24,2%
NKR	16,2	13,2	3,0	22,5%
Jambyl region	16,0	16,2	-0,2	-1,4%
Calculations Ranking.kz.				

Traditionally, is in the lead on collecting tax revenues among regions of Almaty - 419 billion tenges (+4% to the first quarter 2016) [9].

It is planned that placement in an industrial zone of the city of Almaty of 53 new modern productions for 430 billion tenges will increase tax collecting the city by 19 billion tenges a year. The city generates 22% of VRP of the country, and by 2020 the indicator will grow by 12,5%.

Besides Almaty in the list of leaders the Atyrau region - 241,2 billion tenges from which 50% are the share of the city of Atyrau. On the third place – Astana which has collected 221 billion tenges for the first quarter (-2% by last year).

Collecting in the Karaganda region (+67%), VKO (+54%), the Kostanay region (+42%) has sharply increased [10].

So far, in RK in general, formation of bases of modern tax system is finished. Nevertheless, the character of the present stage of development of the economy RK is characterized by existence of a set of problems, specific to this stage. In these conditions, the tax reform undertaken in recent years, is only one of components of the reforms directed to increase in competitive tax system. Tax policy of the state in the next years will still be pursued in the conditions of federal budget deficit. In this regard the most important task of the Government of RK, creation of the effective and stable tax system providing the budgetary stability in the medium and long term including with use of tools and mechanisms of tax administration is [11].

Conclusions. Further changes still we are expected and hope that the new tax system of our country will be carried out in the directions of creation of favorable tax conditions for businessmen, producers, stimulation of an investment of wage means in investment programs, providing attractive tax regime both for Kazakhstan, and for the foreign capitals promoting the solution of priority problems of development of the Kazakhstan economy.

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ЗАМАНАУЙ ЖАҒДАЙЫНДА ҚР САЛЫҚ САЛАСЫН БАСҚАРУ ЖҮЙЕСІН ДАМЫТУ ҮРДІСТЕРІ

Аннотация. Осы мақалада Қазақстанның салық саясатын дамытудың болашақтағы бағыттары мен даму тенденцияларына баға беріледі. Салық жүйесі – нарықтық экономиканың ажырамас бөлігі. Мақалада жазылғандай, нарықтық экономика талаптарына байланысты салық жүйесі экономиканы реттеудің әрі әлеуметтік және экономикалық дамудың басым бағыттарын айқындайтын негізгі құралы ретінде қарастырылады. Осы мақаланың шеңберінде талданған экономикалық реформаларды жүргізуге арналған бағдарламалардың ішінен біздің еліміздегі салық жүйесін реформалаудың негізгі бағыттары салық жүйесіндегі қоғамның қаншалықты бюджеттік және мемлекеттің салық саясатының қазіргі уақыт талаптарына жауап беретіндігіне әсер етедігі сөзсіз. Дегенмен салық жүйесінің реформаларының бағыттары мен қағидаларын анықтайтын салық саясаты экономикалық және әлеуметтік процестегі қоғамның динамикасын ескеру қажет, сондықтан бұл қоғамдық қарым-қатынасты тұрақты зерттеудің қажеттілігін туындатады.

Түйін сөздер: салық жүйесі, салықтық институттар, салықтық басқару, салық, салық саясаты, салықтық жеңілдіктер, салық механизмі.

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ТЕНДЕНЦИИ РАЗВИТИЯ СИСТЕМЫ УПРАВЛЕНИЯ НАЛОГОВОЙ СФЕРОЙ РК В СОВРЕМЕННЫХ УСЛОВИЯХ

Аннотация. В статье рассматриваются тенденции развития и перспективные направления развития налоговой политики Казахстана. Налоговая система – важнейшая составляющая рыночной экономики. . В статье отмечается, что в условиях рыночной экономики налоговая система выступает главным инструментом регулирования экономики и воздействия государства на развитие хозяйств, определения приоритетов социального и экономического развития. В рамках данной статьи проанализированы успех экономического реформирования в нашей стране от степени которой зависят направления преобразование налоговой системы общества, насколько бюджетная и налоговая политика государства будет отвечать требованиям времени. Необходимо отметить, что налоговая политика, определяющая принципы и направленность реформы налоговой системы, должна учитывать динамику экономических и социальных процессов в обществе, что предопределяет потребность постоянного исследования данной сферы общественных отношений.

Ключевые слова: налоговая система, налоговые институты, налоговое администрирование, налоги, налоговая политика, налоговые льготы, налоговый механизм.

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MODERNIZATION OF TRADITIONAL MUSICAL CULTURE OF THE KAZAKHS IN THE ERA OF GLOBALIZATION

Abstract. The article characterizes the current state of the national culture of Kazakhstan, the increase in the number of traditional performers of the new trend and the folklore, ethno-folklore and classical collectives created on the modern cultural platform and, at the same time, innovative phenomena in the field of the national musical language and harmony typical for the late 20th and 21st centuries .

The President N. Nazarbayev in the article “Course towards the future: modernization of Kazakhstan’s identity” points out 2 rules: “First. Modernization is impossible without preservingnational culture.Second. To move forward, a nation must leave behind the elements of the past that hinder its development”. These rules, considered from the standpoint of modernization in the era of globalization of the "national code" and "national culture" in traditional music, through the identification of negative sides, the designation of advanced competitive achievements made it possible to emphasize the need for their study.The scientific interpretation of the selected objects (work, personality – composer/performer/conductor, collective) is realized by an inductive method, in the movement from the particular to the general. Along with this, under the appropriate conditions, a comparative-comparative method and proven principles of system analysis are involved.

As a result of mastering new trends and processes in the Kazakh traditional musical culture as objects of study, determining the ways for the intensive development of national art in the era of globalization, their consideration in pragmatic and innovative aspects, comprehension of information and historical data on new personalities and collectives, etc. is presented with scientific and cognitive positions in a concise form the content of the future fundamental collective monograph on a previously unexplored topic.

Keywords: tradition, composer,performer, song, kuy, treatment, orchestra, ensemble,bands and orchestra, ethno-jazz, ethno-rock.

Introduction. At the end of the XX century and in the XXI century, especially during the last 10 years, computer technologies, Internet, mass media (radio, TV, newspapers, journals) have actively got inside the life of the society, making a contribution to the public consciousness. Therefore, various phenomena pertaining to the era of globalization had an impact on the genres of traditional music. The development of the society all the time strives to the new, in this regard, above all, it is necessary to note the processes of synthesis in traditional music. Through this, new terms, tendencies, styles and genres appear in musicology. In the given aspect, above all, the problems of national musical language and musical sound should be considered. In this regard, along with the revival of traditional music, the attention will be paid to modernization of traditional musical heritage in classical compositions.The reflection of current trends in traditional music is a normal phenomenon. The RK President writes:“Even largely modernized societies have cultures and traditions which are rooted long in the past.The first condition for successful modernization is the preservation of national culture and tradition” [1]. Thus, relevance of the topic is determined by presence of the “national code” on the basis of traditional authentic music, its modernization at the current stage into a new form while maintaining own originality. The main purpose of work is the musicians’ creativity appealing to the activity of collectives in new forms and current trends and scientific and theoretical research of the reflection of innovative and pragmatics methods of musical language in contemporary compositions. Traditional music over the course of time gives the following ways to: “No matter how difficult it was to investigate a tradition that did not leave written monuments, it would be wrong to deny the fact of evolution, successive transformations in the spirit of the times that have gripped many centuries, which continue to this day” [2, p. 114].

Methods. The scientific subjectsand the objects studies in it (composition, figure-composer/performer/conductor, collective) will be implemented using the inductive method, which leads from private to general. Along with this, the comparative and relative method and the proven principles of system analysis will be used in the relevant sections. The works of philologists – M. Auezov, Z. Akhmetov, S. Kirabayev, S. Kaskabasov, B. Maitanov, U. Kalizhanov, B. Azibayeva, A. Ismakova, etc. – and also the scientific explorations of musicologists – A. Zatayevich [3], A. Zhubanov [4], B. Yerzakovich [5], S. Kuzembai [6], A. Mukhambetova [7], S. Ayazbekova [8], etc. – will be used as the theoretical and methodological basis of the work.

As in the near and far abroad modernization of traditional art of the globalization era has already become noticeable in the previous century, the exploration of the given problem has started earlier. Since each nation has written about its own national music, the leading world scientific works should be taken as a basis of the given project. Thus, along with the works of the scientists that have considered the national art and the historical and ethnographical direction of music as a solid phenomenon, for example, B. Asafyev [9], I. Zemtsovsky [10], I. Matsievsky [11], V. Medushevsky [12], etc., the scientific findings of V. Konen [13], T. Adorno [14], T. Cherednichenko [15], V. Feiertag [16], who have explored such contemporary music as jazz and rock, E. Kuznetsov [17], A. Bogdanova [18], Y. Dmitriev [19], who have considered entertainer music, and E. Kampus [20], T. Kudinova [21], who have explored synthetic genres in musical art, will be used. The publications of the scientists of far abroad – I. Behrendt [22], D. Hebdige [23], L. Grossman [24], N. Bromell [25], J. Zimmer [26], etc. – may become a sort of guidebook for understanding the essence of contemporary genres, forming of historical and theoretical justifications of new phenomena.

The dissertations on the same subject as a socio-cultural phenomenon, cultural element of the youth were taken in the near and far abroad. Among them, the findings of I. Nabok [27], E. Savina [28], V. Syrov [29] may be counted as the outstanding ones. For example, V. Syrov writes in his research: “The dialogue with this or that ethnic, cultural or style tradition within the frameworks of mass genre phenomenon increases the requirement for the author, identifies his face, style, manner, intonation and in this sense confronts the total homogenization of mass culture. At these examples it is possible to study cultural and style contacts, thereby, implementing the non-traditional material into the context of actual culture lens issues” [29, p.14].

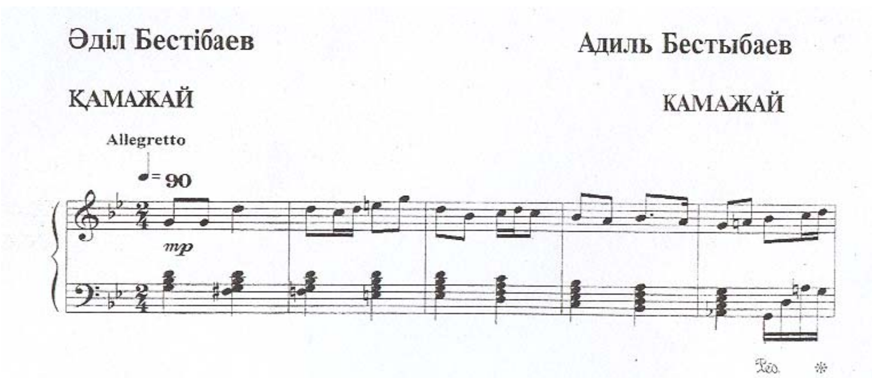
In exploring the canon problems of contemporary music taking into account oral and improvisation essence of traditional music the attention is drawn on the works of I. Bakhtin [30], Y. Lotman [31], Y. Plahov [32], N. Shakhnazarova [33], T. Gafurbekov [34], V. Suzukei [35], etc. In this aspect the view of V. Suzukei, the doctor of sciences studying the cultural and historical bases of traditional music of the Tuvans and its modernization, is imagined comprehensive, she points out: “The multidimensional problem of intersectionality of various types and “faces” of ethno-cultural experience and its creators, bearers and translators of norms, values and samples is as heuristic as actual in the current situation. For the very reason that cultural diversity and variety constitute a moving integrity of traditional and innovative beginnings, it cannot but reflect the impact of the changes in the world” [35, p.3]. Based on the above, it can be noticed that in the near and far abroad, i.e. in the world, different ethnic groups have long ago started the works on the scientific findings concerning the modernization of traditional music.

Results. In his article “Course towards the future: modernization of Kazakhstan’s identity” the President N. Nazarbayev points out 2 rules: “First. Modernization is impossible without preserving national culture. Second. To move forward, a nation must leave behind the elements of the past that hinder its development” [1]. The rules highlighted here, traditional music, which haspreserved the “national code” and “national culture”, contributed to creation of the research plan dedicated to modernization of culture in the era of globalization.The“national code” begins with an oral tradition. It is a mistake to say that this is a traditional music of the common ethnos. The reason is that the representative of the oral tradition based on the art of the past century when performing some music. Here are the following ways:“In the absence of musical notation, he first recalls the melody itself, then – a variant of its interpretation of the unprecedented" reading "of a seemingly already well-known ... work" [34, p.135].

Ceremonial, household and historical songs have a special place in Kazakh traditional musical culture. At the present time, due to changes in the way of life of the Kazakhs, the mentioned types of folklore creativity has been modified and transformed strongly establishing in the creativity of classical and amateur composers. In the art culture of the Kazakh nation, respecting especially the spirit of the ancestors and their achievements, historical events (Aktabanshubyryndy, the October revolution, the Great Patriotic War, the Jeltoksan, Astana, Sammit, Asiada, EXPO, etc.), historical figures (Beibars, Korkyt, Ablai Khan, Syrym batyr, Issatai, Kyrmangazy, Abai, Zhambyl, Amangeldy, Kulyash, Aliya, Manshuk, Nurgisa, N. Nazarbayev, T. Aubakirov, etc.) and also ceremonial songs ("Toi zhyry", "Zhar-zhar", "Zhas zhubailar" – "The newly-married couple", "Zhubailar zhyry" – "The song of the newly-married couple", "Ak kelin" – "The pure daughter-in-law", "Kelinge osiet" – "The guidance to the daughter-in-law", "Kuda bolypzhureiik" – "Lets restect each other, the in-laws", "Kudalar" – "The in-laws", etc.) are reflected properly.

In the era of globalization after the release from ideological attitudes and the Soviet power dominance the representatives of national art started to look at the fate of the own nation deeper, started to create original compositions matching with national mentality, harness new ways of performing, strived to show national games and types of entertainment in scenic compositions. After gaining Independence the number of traditional musicians started to increase and expanded with new names. The point of view of the Head of the State: "I suggest drawing attention to our modern society and the achievements of our citizens" [1], – contributed to creating a plan of the research where, along with the creativity of musicians continuing the traditions laid down by the older generation and raising the new generation of students, the special attention is paid to the professional classical composer and performing art of written tradition.

Among them, some outstanding representatives of traditional art should be noticed – K. Akhmediyarov, A. Zhaiymov, A. Ulkenbayeva, B. Tleukhan, B. Zhusipov, S. Zhanpeisova, R. Stamgaziyev, R. Kulshebayev, Zh. Zhuzbayev, A. Abduali, A. Kazakhbayev, N. Ashirov, etc. And on the world scene these are the musicians that along with the masterpieces of European and Russian classic perform and promote national compositions and inspire respect and reverence from the international community because of their mastery and talent. In this regard, it is necessary to mention such names as A. Musakhodzhayeva, M. Bisengaliyev, Zh. Aubakirova, G. Murzabekova, M. Kerei, G. Kydyrbekova, A. Tebenikhin, A. Bisengaliyev, T. Erzhanov, E. Kurmangaliyev, H. Onalbayeva, etc. Thus, the problem of modernization of national values in the art of contemporary professional composers should act as a separate research. For example, such compositions as "Korkyt's dream" of B. Bayakhunov, "Berkut" of M. Kussainov, "The tale of Nauryz celebration" of B. Kydyrbek, "The stone ghost" of S. Erkimbekov, "The ancient Turan" of A. Raimkulova, "Ordabasy" of S. Abdinurov, etc. should be considered in the aspect of the highlighted scientific issue.For example, the fact that the ancient heritage of national heritage is reflected in today's composer's creativity continues. Let's talk about one of them, in the author's work of A. Bestibaev is based on the song "Khamazhai".



These techniques are also found in Uzbek professional music. The obvious example is the work of M. Burkhanov, and it is well known that the Kazakh composer's "Dudarai" song was processed.

In the XX century with the gaining of Independence the positions of ensembles and orchestras of classical direction started to strengthen. Kurmangazy Kazakh folk instruments orchestra, N. Tlendiev Academic folk-ethnographic orchestra ("Otyrarsazy"), State Academic symphony orchestra, State wind orchestra, State choir named after B. Baikadamov, various chamber ensembles, etc. created established under the Soviet power in the independence years have become more active in enriching the repertoire and promoting national art. Here it is worth it to point out the role of the directors, conductors of that creative collectives, who put great forces into development and improvement of the activity of the mentioned musical organizations. These are such outstanding names as A. Zhubanov, N. Tlendiev, M. Aubakirova, Sh. Kazhgaliev, F. Mansurov, T. Abdrashev, R. Gabdiev, K. Akhmetov, A. Buribayev, A. Zhudebaev, etc.

It is known that the chamber music of Kazakhstan also has its own relatively long historical path. If among the artists of older generation it is necessary to mention the ancestors – the "Dosmukasan" band, such singers as Rosa Rymbayeva, Hagima Eskalieva, Makpal Zhunisova, Bakhtiyar Tailakbayev, Akzhol Meirbekov, etc., to date their continuers are many individual and collective (duets, trios, quartets) performers, among which the most popular are such bands as "ABK", "Nur-Mukasan", "MuzArt", "Konyr", "Zhigitter", "KeshYou", etc. It is safe to say that the meaningful quote of the Hungarian scientist V. Bratash, the specialist in the field of the music of Asian nations: "The Kazakhs are the incredibly gifted nation. Their songs charm me. I think I will not be mistaken if I say that the Kazakhs are musical no less than Viennese and vocal no less than the Italians are. Kazakhstan is Asian Vienna and Italy, happily merged together" [36], is being proved by the only talented creativity of Dimash Kudaibergenov.

During the recent years, consolidating of the native national instruments – dombra, kobyz, shan-kobyz, sazsyrnai, zhetigen, sybyzgy, etc. – into a single sound or including them into the accompaniment of the compositions of entertainer ensembles is often practiced. Such an ensemble decision increases the interest of the youth to such a phenomenon and gives evidence about the quantitative growth of national ethno-folklore collectives. Even in this trend there 2 directions being identified. The first one consists of only the archaic ethnic instruments – the representatives are such ensembles as "Adyrna", "Sazgensazy", "Farabi", "Turan", "Babalarsazy", "KhasSak", "Kokturik", "Serper", - the second one is entertainer collectives wirking actively in rock, pop, jazz direction – among them the popular ones are such bands as "Roksonaki", "Urker", "Ulytau", "Beles", "The Magic of Nomads", "Aldaspan", "Jado", "Tigrakhaud". The tendencies of synthesizing can also be noticed in the creativity of single performers, such as AsylbekEnsepov, AskarSultangazin, AlmatSaizhan, AkerkeTazhibayeva, etc., and duets, trios, quartets, quintets – bands "Kerei", "Pai-pai", "Zhan", "Art dombyra", "Asyl". There have appeared even the complex directions of the given type of contemporary creativity, for example, modern-ethno-jazz duet "ST Brothers". Since the highlighted phenomena are the products of the last years and for that very reason they are not got into the scientific turnover, one of the main objectives of the given in the studyis to explore the innovative tendencies in the musical culture of Kazakhstan of the globalization era, to identify positive and negative sides, to note the impact of new tendencies on the consciousness of the youth. The statement of N. Nazarbayev: "Nowadays, not only a single person, but a nation in general, can succeed only by developing its competitiveness. First of all, it means that the nation has something valuable in terms of price and quality to offer to regional and global markets. It is not only material goods but also knowledge, services, intellectual products, and lastly, the quality of human resources" [1], – became the basis for the presentation of the study, where the quality will be identified and the objective assessment of domestic musical art on the arena of globalization will be done.

Conclusions. The analysis of new trends and directions of the globalization period will not only increase the interest of the creative intelligence but will also have a positive effect on the formation of educated youth. The contemporary compositions that have become the research objects and the leading compositions in the genres of traditional art, stability and viability of the collectives and bands created in the past and in the present, the direction and repertoires of single performers, which refer to the modern tendencies, will be harnessed in scientific and cognitive aspect. In the result, the fundamental collective monograph on the previously unexplored theme will be published. To do this, we offer the following conclusions:

– In order to develop the national music in the global era, advanced scientific research in the world should be taken from new parties: the history of music ethno-cultural as a whole phenomenon, the study of jazz and rock music reflecting the new fears of contemporary music, the classification of synthetic genres in music The work of scientists who have studied the canonical problems of music art should be taken into account;

– Theoretical principles of the first concept of modern music art modernization in the modern world should be used in lectures on traditional, academic and variety performances in music education (specialized music school-college-conservatory – folk music, Kazakh musical folklore, Kazakh musical history, musical critical, modern harmony and polyphony, sound recording, instrumentation, etc.);

– The intensive development of directions and trends of Kazakh traditional music culture, new faces and collectives in the global era, the pragmatic and innovative novelty of the national heritage, which was received as an object of the research, were not scientifically-theoretically studied. Since these things have been the product of recent years, they have not yet come to the science circle, and we see the music of Kazakhstan as a matter of national science, to judge what is happening in the global era and to determine how these are right or wrong, and how it affects the consciousness of future generations.

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ЖАҺАНДЫҚ ДӘУІРДЕГІ ҚАЗАҚ ДӘСТҮРЛІ МУЗЫКА МӘДЕНИЕТІНІҢ ЖАҢҒЫРУЫ

Аннотация. Мақалада XX ғасырдың соңы мен XXI ғасырда дәстүрлі музыка өнердегі заман ағымына бет бұрған жаңа тұлғалардың және заманауи үрдісте құрылған фольклорлық, этно-фольклорлық және классикалық ұжымдардың қосылуы, оның үстіне ұлттық музыка тіліне қосылған инновациялық интонациялар мен гармония заңдылықтары қазақ мәдениеттің бүнгі болмысын сипаттайтын тұстары белгіленген. Елбасы, Н. Назарбаев: «Болашаққа бағдар: рухани жаңғыру» мақаласында екі ережені түсініп, байыбына барғанды қалайтынын айтып: «Біріншісі – ұлттық код, ұлттық мәдениет сақталмаса, ешқандай жаңғыру болмайды. Екіншісі – алға басу үшін ұлттың дамуына кедергі болатын өткеннің кертартпа тұстарынан бас тарту керек» – деген. Мұнда берілген, дәстүрлі музыкадағы «ұлттық код» пен «ұлттық мәдениеттің» жаһандық дәуірде жаңғыруы тарапынан қарастырып, кертартпа тұстарын анықтап, бәсекелестікке қабілетті озық жетістіктерді белгілеу осы тақырыпты зерттеуге жетеледі. Ғылыми зерттеу шеңберінде нысан ретінде талдауға алынатын туынды, тұлға – композитор/орындаушы/дирижер және ұжымдар жалқыдан жалпыға қарай жетелейтін индуктивті әдіспен жүзеге асырылады. Сонымен қатар, тиісті тұстарында салыстырмалы-сараптау әдістің және жүйелі талдаудың сыннан өткен қағидалары қолданылады.

Нәтижесінде қазақтың дәстүрлі музыка мәдениетіндегі тың бағыттар мен жаңа үрдістер игеріліп, жаһандық дәуірде ұлттық мұрамыздың қарқынды даму жолы анықталып, олардың прагматикалық және инновациялық тұрғысынан қарастырып, жаңа тұлғалар мен ұжымдар туралы мағлұматтар мен тарихи деректер ғылыми-танымдық тұрғыда игеріліп, бұл тақырып жоспарланған монографияның қысқаша мазмұны ұсынылады.

Түйін сөздер: дәстүр, композитор, орындаушы, ән, күй, өңдеу, ансамбль, оркестр, эстрада, этно-джаз, этно-рок.

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МОДЕРНИЗАЦИЯ КАЗАХСКОЙ ТРАДИЦИОННОЙ МУЗЫКАЛЬНОЙ КУЛЬТУРЫ В ЭПОХУ ГЛОБАЛИЗАЦИИ

Аннотация. В статье обозначено характеризующее сегодняшнее состояние национальной культуры Казахстана увеличение числа традиционных исполнителей нового направления и созданных на современной культурной платформе фольклорных, этно-фольклорных и классических коллективов и вместе с тем инновационных явлений в сфере национального музыкального языка игармонии, типичных для конца XX и XXI вв. Президент Н.А.Назарбаев в статье «Взгляд в будущее: модернизация общественного сознания» отмечает два правила: «Первое.Никакая модернизация не может иметь место без сохранения национальной культуры. Второе. Чтобы двигаться вперед, нужно отказаться от тех элементов прошлого, которые не дают развиваться нации». Указанные правила, рассмотренные с позиций модернизации в эпоху глобализации «национального кода» и «национальной культуры» в традиционной музыке, через определение негативных сторон,обозначение передовых конкурентоспособных достижений позволили подчеркнуть необходимость их изучения. Научная интерпретация отобранных объектов (произведение, личность – композитор/исполнитель/дирижер, коллектив) реализуется индуктивным методом, в движении от частного к общему. Наряду с этимв соответствующих условияхзадействованы сравнительно-сопоставительный метод и проверенные принципы системного анализа.

В результате освоения новых тенденций и процессов в казахской традиционной музыкальной культуре в качестве объектов изучения, определения путей интенсивного развития национального искусства в эпоху глобализации, их рассмотрения в прагматическом и инновационном аспектах, осмысления сведений и исторических данных о новых личностях и коллективахи др. представлено с научно-познавательных позиций в краткой форме содержание будущей фундаментальной коллективной монографии по ранее неисследованной теме.

Ключевые слова: традиция, композитор, исполнитель, песня, кюй, обработка, ансамбль, оркестр, эстрада, этно-джаз, этно-рок.

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COMPARATIVE ANALYSIS OF THE STATUS OF INCOMES AND EXPENDITURES FOR COMPULSORY SOCIAL INSURANCE

Abstract. The structure of incomes and expenses on obligatory social insurance in structure of the state incomes and expenses of the Republic of Kazakhstan have been researched. A comparative analysis of the current state of incomes and expenditures on compulsory social insurance in the system of social protection of the population in the range of 10 years, according to the Unified Accumulative Pension Fund, in the range of 4 years was examined. The author's vision of the significance and role of the social tax, in accordance with the theoretical classification of taxes, was presented. The results and the reasons for the positive and negative activities of the categories were determined. It is well-known, that pension insurance is one of the components of compulsory social insurance of the society. In this regard, it is quite useful to analyze the dynamics of the amount of pension savings in the Common Accumulation Pension Fund. Despite the fact that this fund is not a state fund, the combined from the previously existing private pension funds of accumulation of citizens in the CAPF are concentrated in the hands of the state. The material is illustrated by graphically and partially supplemented with the tables. In the conclusion were made some suggestions about the composition, role, financial position, possibilities for improving the current system of compulsory social insurance.

Keywords: state income, public expenditure, social tax, social protection, compulsory social insurance, social security, social assistance, working population, social payments, pension insurance.

State revenues are the system of the economic relations in the process of funding;it is formed on the basisof the state's ownership in order to create the material basis for its functioning [1]. The incomes of the Republic of Kazakhstan include the revenues of the republican budget, incomes of the local budgets, income of the different state funds: the National Fund, the State Social Insurance Fund, and the Mandatory Social Insurance Fund.

The main part of state revenues is accumulated and distributed through the state budget (republican and local). Therefore, it is advisable to start the analysis with the state budget. The range for analysis will be determined in ten years (since 2008 to 2017).

Analysis of incomes of the state budget of the Republic of Kazakhstan shows that there is a tendency of constant growth (figure 1), besides 2009, when the decrease in income was 529,07bill.tenge, or 15%in the comparison with 2008; is quite appreciable, because theoretically acceptable is the budget deficit to10% from itsincomes. But this situation is mitigated by the fact that it was observed only in 2009 in the revenues of the republican budget, without affecting the incomes of the local budgets. In general, since 2009, there has been a positive trend.

The observed real tendency of increasing the state budget revenues is a serious achievement that allows the state to increase spending on the social sphere. But at the same time, it is necessary to note a wide spread of income growth (from 4% to 20%). So, in 2011, revenues increased by 20% and in 2012 - by 7.6%; in 2015 the increase was only 4%, and in 2017 it reached the rate of 20%. In our opinion, despite the present positive dynamics of budget revenues, in general, the uneven increase does not allow the systematic development of the social sphere.

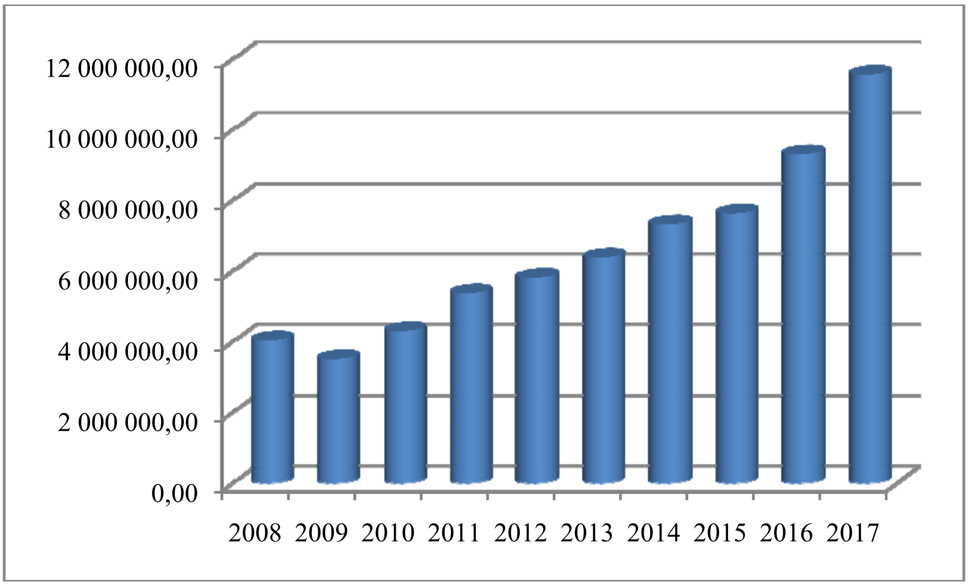

Figure 1 – Dynamics of Incomes of the State Budget, mln. tenge

A similar situation is observed with the revenues of the constituent part of the state budget of the Republic of Kazakhstan – the republican budget (figure 2). The unevenness of the increase in the revenues of the republican budget repeats the volatility of the increase in the revenues of the state budget. Below we would like to show the incomes of the local budgets (figure 3).

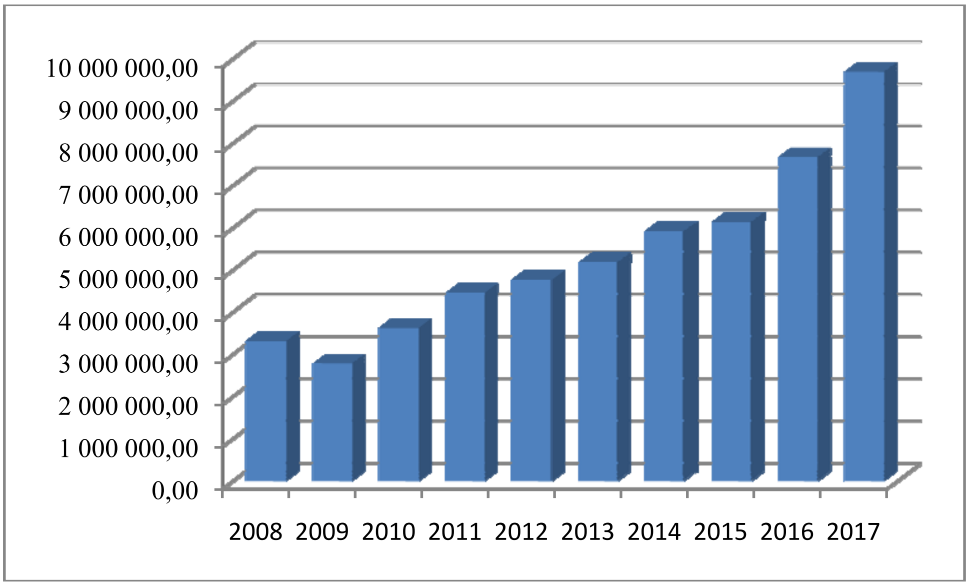

Figure 2 – Dynamics of Incomes of the State Budget, mln .tenge

The incomes of the local budgets tend to be relatively increased, except 2015, when there was a slight decrease of 2% (figure 3).

The revenue side of the local budgets of the Republic of Kazakhstan is formed primarily by the local taxes: individual income tax, social tax, property tax of the legal entities and individuals, land tax, vehicle tax, and other mandatory payments.

So called “target” taxes are, first of all, the taxes, which used in finance specific activities. In the scientific literature in relation to the “target” taxes there are the different opinions.For instance, S.G. Pepeliaev [2, p. 48-49] notes the positive features of the targeted taxes:

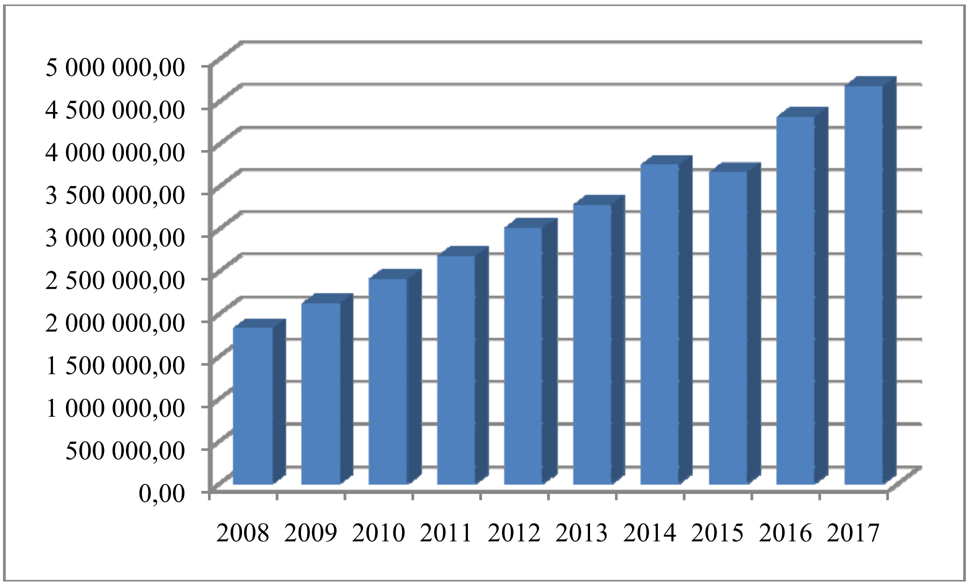

Figure 3 – Dynamics of Incomes of the LocalBudget, mln. tenge

– Firstly, from the psychological point of view, the taxpayer more readily pays such tax;

– Secondly, these taxes can be introduced in order to give independence to the specific government agency;

– Thirdly, the target nature of the tax can be justified by the establishment of the need to implement certain costs.

It is well-known, that the right to free medical care for the permanent residents was granted in 2017, following the amendments to the country's Code "On Health and Healthcare System". Prior to that these categories of people were entitled only for free emergency and urgent medical care. In addition to that, permanent residents will also be able to choose primary health care organizations to receive medical services within the areas of their residence, work, and study. Meanwhile, temporary residents will only have the right to free emergency and urgent medical care within the limits of the free medical care [3, p. 17].

The new model of the medical care in our country will be implemented in three phases. In the first stage, a full audit of medical care under existing conditions will be conducted as it relates to guaranteed free medical care. Maximum attention will be paid to detail and optimization by prioritizing and limiting medical services. In the second stage, a new model of guaranteed free medical care will be presented simultaneously with the introduction of compulsory social health insurance. This phase will be characterized by defining the clear boundaries of the state's obligations under the program and further ensuring the policy aimed at developing preventive and primary health care. The process will also include full-scale transition to the health insurance system and its continued development.The third stage will involve a regular update to the lists of guaranteed free medical care and compulsory social health insurance, taking into account developing medical technologies.The healthcare ministry guarantees medical care will be provided to every person in an emergency situation, as well as for pandemics and diseases that can result in demographic crises or disability.The detailed list of guaranteed free medical care developed for the current year is structured, according to the norms of medical care with an emphasis on the preventive direction of primary health care.In the system of compulsory social health insurance, medical assistance will be aimed at improving the quality of life of every citizen. The bill introducing the new model of guaranteed volume of free medical care and the medical benefits package in the compulsory social health insurance system has been prepared. The bill passed all examination stages [4, p. 222].

From 1 January, 2018 in Kazakhstan was entered compulsory social health insurance (OSMS). Kazakhstan model of insurance is built on the mutual responsibility of the state, each employer and citizens. Scientists, practitioners and employees of state departments in charge of medicine, reviewed the current problems of financing the health care system, the prospects for the introduction of mandatory social health insurance, the level of professionalism of doctors and many other questions, and their solutions. In Kazakhstan was created a Fund of obligatory medical insurance, founder and sole shareholder of which is the Government. Compulsory social health insurance (OSMS) are implemented to ensure financial sustainability of the health system, development of competition and improvement of quality of care. With the conduct of insurance in society was created a new paradigm of relations between the citizen and the state in matters of health that assumes joint responsibility for the health of everyone: system of mandatory medical insurance. That this time the system will not allow failure, as it was in the late 90's, are sure foreign experts. In the grandiose project considered as shortcomings of the past and international best practices. For example, Sh. K. Abikenova and G. T. Aitkenovanoted that all risks completely thought out [6, p. 135]. The main payer of contributions in Kazakhstan is the state – contributions from Treasury will cover more than half of the total population. This also includes registered unemployed people.

L. G. Baranovaandothers determine Compulsory health insurance as the main implementations of 2017 in Kazakhstan. If earlier health insurance for many years operated in the category as voluntary, the introduction of compulsory health insurance in Kazakhstan bears a tremendous change. The system of compulsory health insurance will help Kazakhstan keep pace with the times, as well as stimulate further development of the insurance market. After all, it is not a secret for anyone that the developed countries of the world practice health insurance, and is a major part of life [4, p. 36].

Thus, in our opinion, social tax is one of the few examples of a tax that the state really needs, the state of which the society must constantly monitor (figure 4).

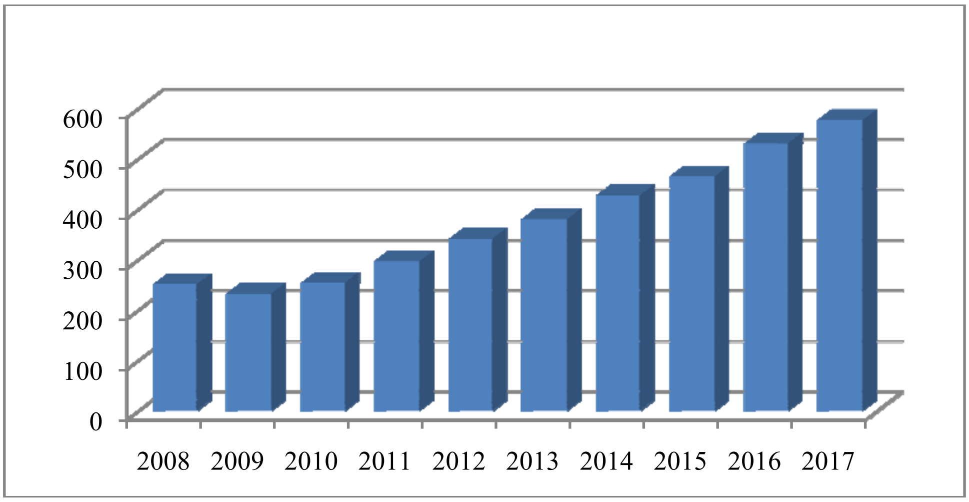

Figure 4 – Dynamics of the Receipt of Social Tax in the State Budget, billion tenge

Out-patient and polyclinic care for socially significant diseases, diseases that are dangerous to others, according to the list determined by the authorized body, as well as persons who do not have the right to medical care in the system of compulsory social health insurance in accordance with the Law of the Republic of Kazakhstan "On compulsory social health insurance", which includes: primary; consultative and diagnostic assistance by the referral of a specialist in primary health care and specialized specialists [7, p. 122].

At the same time, from the end of 2009, the increase in the amount of social tax revenues to the budget of the Republic of Kazakhstan from 232.8 billion tenge reached 576.6 billion tenge; in 2017, in average was increased by 12.0% per year. This situation makes it possible to increase spending on the social sphere at the expense of the social tax itself.

Consider the change in the proportional rate of social tax in the structure of tax revenues over the past ten years (figure 6).

Inpatient care: planned inpatient care only for socially significant diseases, diseases that pose a danger to others, according to the list determined by the authorized body, by the referral of a specialist in primary health care or a medical organization within the planned number of hospitalization cases determined by the authorized body; for emergency indications - regardless of the referral [8].

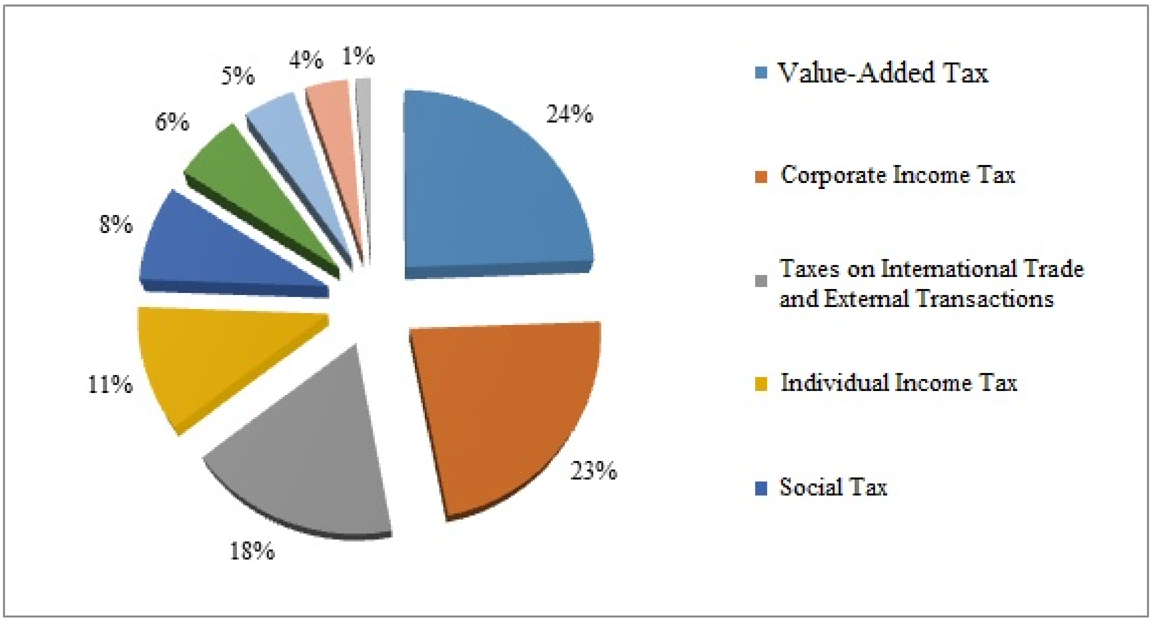

Figure 5 – Structure of Tax Revenues by Type for 2017

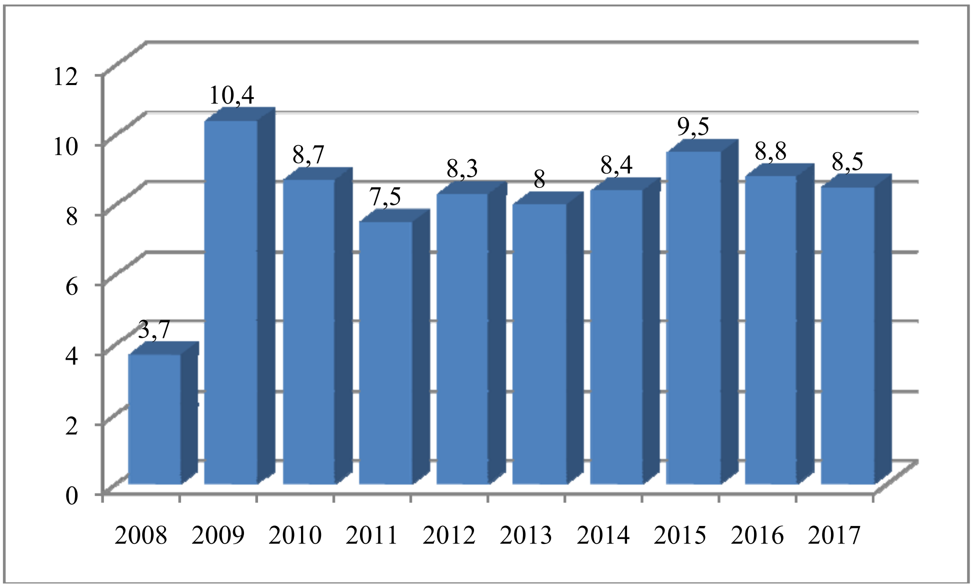

Figure 6 – Changes in Social Tax Revenue in the Structure of Tax Revenues, in Percentage Terms

The National Fund of the Republic of Kazakhstan directly depends on the conjuncture of world prices for raw materials; this fact is responsible for the dynamics of the fund's revenues (figure 7) [9]. The State Social Insurance Fund of the Republic of Kazakhstan is the direct executor of the mandatory social insurance system responsible for the safety and targeted use of social contributions. The dynamics of receipts of social allocations in the SSPF is shown in figure 8 [10].

In the conclusion we would like to note, thatout-patient and polyclinic care (except for medical care for socially significant diseases, diseases that are dangerous to others, according to the list determined by the authorized body), including: primary health care, consultative and diagnostic assistance by the referral of a specialist in primary health care and specialized specialists. In general, the system of compulsory social insurance in the Republic of Kazakhstan at the current stage of development has achieved significant positive results, but still requires the elaboration of mechanisms for further improvement with the view to improve the quality of life of the citizens.

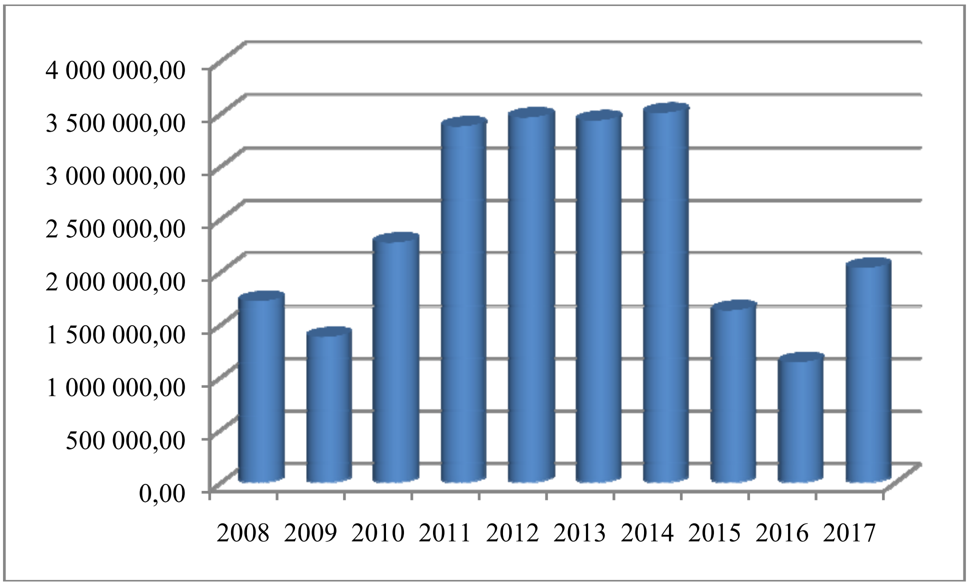

Figure 7 – Dynamics of Receipts of the National Fund of the Republic of Kazakhstan, mln. tenge

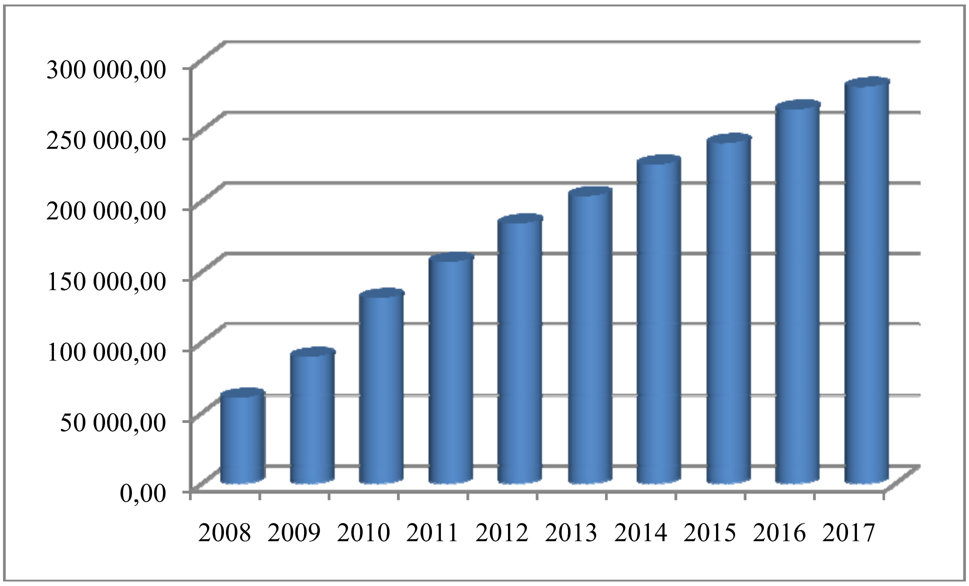

Figure 8 – Dynamics of Receipts of Social Deductions
in the State Fund of Social Insurance of the Republic of Kazakhstan, mln. tenge

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МІНДЕТТІ ӘЛЕУМЕТТІК САҚТАНДЫРУ БОЙЫНША КІРІСТЕР МЕН ШЫҒЫНДАРДЫҢ ЖАЙ-КҮЙІН САЛЫСТЫРМАЛЫ ТАЛДАУ

Аннотация. Қазақстан Республикасының мемлекеттік кірістер мен шығындар құрылымында міндетті әлеуметтік сақтандыру бойынша кірістер мен шығындар құрамы қарастырылған. Әлеуметтік қорғау жүйесінде соңғы 10 жыл, Бірыңғай жинақтаушы зейнетақы қорының соңғы 4 жыл бойғы халықты міндетті әлеуметтік сақтандыру бойынша кірістер мен шығындардың ағымдағы жай-күйіне салыстырмалы талдау жасалған. Салықтардың теориялық классификациясына сәйкес әлеуметтік салықтың маңыздылығы мен рөлі туралы авторлық көзқарас ұсынылған. Зерттеліп отырған санаттардың оң және теріс әрекеттерінің себептері анықталып, нәтижелер алынды. Зейнетақымен қамсыздандыру қоғамның міндетті әлеуметтік сақтандырудың құрамдас бөліктерінің бірі болып табылады. Осыған байланысты Бірыңғай жинақтаушы зейнетақы қорында жинақталған зейнетақы қаражатының динамикасын талдау пайдалы. Бұрын болған жеке зейнетақы қорларынан құралған бұл қордың мемлекеттік қор еместігіне қарамастан, БЖЗҚ-дағы азаматтардың жинақтары мемлекет тарапынан басқарылады. Материал графикалық және ішінара кестелермен толықтырылған. Қорытындылай келе, серіктестерді іске асыру арқылы міндетті әлеуметтік сақтандыру жүйесін жетілдірудің құрамы, рөлі, қаржылық жағдайы, мүмкіндіктері туралы қорытындылар жасалды.

Түйін сөздер: мемлекеттік кірістер, мемлекеттік шығындар, әлеуметтік салық, әлеуметтік қорғау, міндетті әлеуметтік сақтандыру, әлеуметтік қамсыздандыру, әлеуметтік көмек, еңбекке жарамды халық, әлеуметтік төлемдер, зейнетақымен сақтандыру.

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СРАВНИТЕЛЬНЫЙ АНАЛИЗ СОСТОЯНИЯ ДОХОДОВ И РАСХОДОВ ПО ОБЯЗАТЕЛЬНОМУ СОЦИАЛЬНОМУ СТРАХОВАНИЮ

Аннотация. Рассмотрен состав доходов и расходов по обязательному социальному страхованию в структуре государственных доходов и расходов Республики Казахстан. Проведен сравнительный анализ современного состояния доходов и расходов по обязательному социальному страхованию в системе социальной защиты населения в диапазоне 10-лет, по Единому накопительному пенсионному фонду в диапазоне 4-х лет. Представлено видение авторов о значении и роли социального налога в соответствии с теоретической классификацией налогов. Получены результаты и определены причины положительной и отрицательной деятельности исследуемых категорий. Пенсионное страхование является одной из составных компонент обязательного социального страхования общества. В этой связи целесообразно проанализировать динамику объемов пенсионных накоплений в Едином накопительном пенсионном фонде. Несмотря на то обстоятельство, что данный фонд не является государственным, объединенные из ранее существовавших частных пенсионных фондов накопления граждан в ЕНПФ сконцентрированы в руках государства. Материал иллюстрирован графически и частично дополнен таблицами. В завершении сделаны выводы о составе, роли, финансовом положении, возможностях в улучшении действующей системы обязательного социального страхования участниками-исполнителями.

Ключевые слова: государственные доходы, государственные расходы, социальный налог, социальная защита, обязательное социальное страхование, социальное обеспечение, социальная помощь, трудоспособное население, социальные выплаты, пенсионное страхование.

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ASSESSMENT OF THE AGRICULTURAL VEGETATION DYNAMICS OF THE KARASAI DISTRICT (ALMATY REGION) BASED ON MULTISPECTRAL IMAGES

Abstract. The article contains the results of research and development, which can be considered as a solution to the scientific problem concerning the selection and development of methods of decoding the occurring at different times series of multispectral images for monitoring and evaluation of the dynamics of agricultural plants of Karasai district of Almaty region.

The methods of pretreatment of multispectral imagery of medium spatial resolution (LANDSAT-7,8) based on structural and spatial model allows to more efficiently decrypt the agricultural plants of Karasai district of Almaty region in comparison with the classification of the original zonal images. The reliability of decryption by using the structural and spatial model is increased by an average of 16%. Experiments on classification of agricultural plants of Karasai district of Almaty region according to multispectral imagery by means of structural and spatial models have shown the ability of decrypting alpine forests, mixed forests, bushes that are in the rivers basin and forest covers, cultural lands of gardeners, agricultural lands especially rain-fed and irrigated lands with a sufficient reliability level. The obtained results of decrypting the agricultural plants according to the occurring at different times multispectral images LANDSAT-7, 8 provide an ability to create and update maps of vegetation, scale 1: 100 000, and also create the maps of vegetation dynamics, scale 1: 100 000.

Spectral analysis of agricultural plants of Karasai district of Almaty region showed that the most informative areas of agricultural land especially the rain fed and irrigated land are green and middle infrared band.

Keywords: LANDSAT-7, 8, vegetation classification, multispectral images.

Introduction. Remote sensing means to obtain information about the state of the Earth's surface measured at a distance, without a direct contact with the sensor surface, the characteristics of electromagnetic radiation.

Since the early 70-ies of our century, remote sensing of the Earth was rapidly developing as a multidisciplinary field of research in science and practice. Based more than on half a century experience in aerial photography and thematic use of its results (the classical methods of remote sensing), it is used today in geography, forestry, agriculture, oceanology and oceanography, while planning the construction area [1-3].

Since 1980 in Kazakhstan, the remote sensing first was used for topographic and special maps using satellite images obtained by satellites of the USSR and foreign satellites of France, the United States. Aerospace methods are used to monitor vegetation cover since 2000.Over the past decade, a large volume of work was carried out in the field of remote sensing of vegetation, including forest health assessment, determining the area of agricultural land, the creation and updating of topographic maps of different scales [4-6].

It is known that human activities are accompanied by negative processes like soil erosion, disturbance of agricultural land, pollution of surface water, etc.This usually leads to serious local and global environmental changes that need to be analyzed and evaluated, and it is necessary to predict their development with the purpose of comprehensive study of the target earth's surface, and increase of efficiency of using its natural resources.Aerospace methods make it possible to solve the issues of assessing the dynamics of the earth's surface, including the dynamics of vegetation [7, 8].

Plants, including agricultural land, are the main type of agricultural resources of Kazakhstan and play an important role in the economy.But with the increasing versatile anthropogenic influence, agricultural lands in Kazakhstan strongly change.These changes are displayed on satellite images, respectively, the relevant one is the development of new ones and adaptation of existing methods, which would allow to carry out regular monitoring of vegetation, assess and map its dynamics in order to take action for the conservation and restoration of natural ecosystems.Analysis of the contemporary state of the problem showed that space multispectral imagery have significant potential for the use in vegetation monitoring.Currently, vast amounts of space-based information, which is updated with the new of a period of several days are accumulated, at the same time in Kazakhstan there is a need in the methods of decoding satellite images, adapted to the peculiarities of its geographical area, especially for vegetation monitoring. In the article the questions of the development of new methods ensuring the monitoring of agricultural vegetation of Karasai districtof Almaty regionaccording to the data of multispectral imagery for assessing its condition and dynamics [9, 10].

The relevance of the article topic is, thus, conditioned by the unresolved problems of information support for monitoring of agricultural vegetation of Karasai districtof Almaty regionaccording to the data of multispectral imagery.

The goal of the study is to solve the urgent problems of adaptation and development of modern methods of decoding agricultural vegetation of Karasai districtof Almaty region, in order to assess its dynamics of the occurring at different times space multispectral images.

To achieve this goal it was necessary to solve the following objectives:

– to conduct the data collection and data pre-processing of multispectral imagery in representative areas of Karasai districtof Almaty region;

– to explore and compare the performance of agricultural vegetation decoding of Karasai districtof Almaty regionby single-level controlled classification and modern methods of multi-level classification based on structural and spatial model of the source images;

– to investigate the possibility of developing a new index images for decoding kinds of agricultural vegetation of Karasai districtof Almaty region.

Materials for the research were the occurring at different time space multispectral imagery from the satellite LANDSAT 7 and 8, topographic and thematic maps (geographicmaps and vegetation maps).

The subject of the research article is the development of state estimation techniques and dynamics of agricultural vegetation on a series of multi multispectral images.

Study area. The study area is the territory of Karasai districtof Almaty region (figure 1), which has an area of2.1 thousand km^2 [11]. Suitable for agricultural use area of which is 512.3 thousand hectares, including 49.3 thousand hectares set aside for arable land, 22.1 thousand hectares of pasture and 1.4 thousand hectares of grassland, 13.2 thousand hectares of forests.

South and south - eastern part of the area are occupied by the mountain range (the highlands of the Ili Alatau mountain), the middle part is a very complex watershed plains and the lower part - a piedmont - piedmont plain with a general slope to the north.The highest point of the district is located on the source of the river Aksay, starting with the peak Aydatau having 4029 m, which is covered with ice and snow.The peak is located near the border with Kyrgyzstan.In the western part of the Ili Alatau mountainthere is a series of mountains and passes (Ushkonyr, Tikka, Kebezhe, Aygaytas, Kokozek, Koktobe, Kumbel, Kaskelen and others.), which exceed the 3000 meter mark. Densely populated and mastered density of the district is located within the 800-1100m height above sea level [12].

Materials and Methods. With regard to the tasks of mapping of vegetation cover of geographic information systems (GIS) a hardware and software systems are used, the basis of them are digital maps with attached to them databases.It consists of 2 large blocks: electronic map database and supporting the functioning of GIS tools.

Figure 1 – Karasai district of Almaty region

The last one is divided into hardware (computers, local area networks, monitors, printers, plotters, scanners, GPS-systems, etc.), software (a program for the construction of a GIS-. MapInfo, ArcView, ArcInfo, Ergas Imaging, etc.) and human ones (operators that create and maintain GIS).

Application of GIS for agroecological land evaluation allows you to transfer to a new qualitative basis for a solution to this complex problem, particularly when designing intensive farming systems and agricultural technologies, without mentioning the high agro-technologies and adaptive-landscape systems of agriculture of high accuracy.Creating land valuation basis for precision farming systems is virtually impossible without the GIS technology. Its most important advantages are as follows:

– ease of processing the large amounts of information. (GIS provides ample opportunities for the combination, sorting, sample data, easy to calculate the area and outlines the parameters);

– greater clarity of presentation of information achieved by providing a large number of thematic maps;

– possibility of automation of maps creating process;

– ease of making changes, the ability to create systems of automatic changes to the database;

– possibility of widespread use of information coming from the means of remote sensing (air and space);

– high precision maps, especially when using global positioning systems (GPS);

– possibility of creating interactive reference and advisory systems;

– convenience of storage, copying, reproduction of the information in any medium, the higher reliability of information storage.

The use of GIS technology in the preparation of the landscape map is primarily due to the digitization of cartographic material.Some multiple sampling methods are used, depending on your hardware, software and staff development.The common position is scanning the topographic base and assigning the coordinates to receive the raster imaging.The choice of the coordinate system depends on the topographic base.If there is a grid basis, the designing are carried out in the coordinate system of topographic base, while using GPS-systems the data obtained with the help of GPS-receivers are used [13, 14].

Currently, methods of remote sensing (RS) has been widely used to solve a variety of tasks, including assessing the vegetation cover condition. Remote sensing of vegetation cover allows to evaluate the dynamics of development and the state of vegetation cover, with varying degrees of generalization of the information from global research on the scale of countries, regions and continents to small areas of vegetation.

One of the modern trends of the use of remote sensing data and best information technology is precision farming, for the conduct of which the preparation of large-scale NDVI maps are realized.

But the use of remote sensing data to solve practical problems of agrolandscape is still only in the initial phase of its commercial use.This is connected primarily to the relatively high cost of remote sensing data and some technical character limitations.Because of this, for our work, we used the free satellite imagery from http://glovis.usgs.gov/ site, representing the United States Geological Survey archives (Eng. United States Geological Survey, the USGS abbreviated) (figure 2).

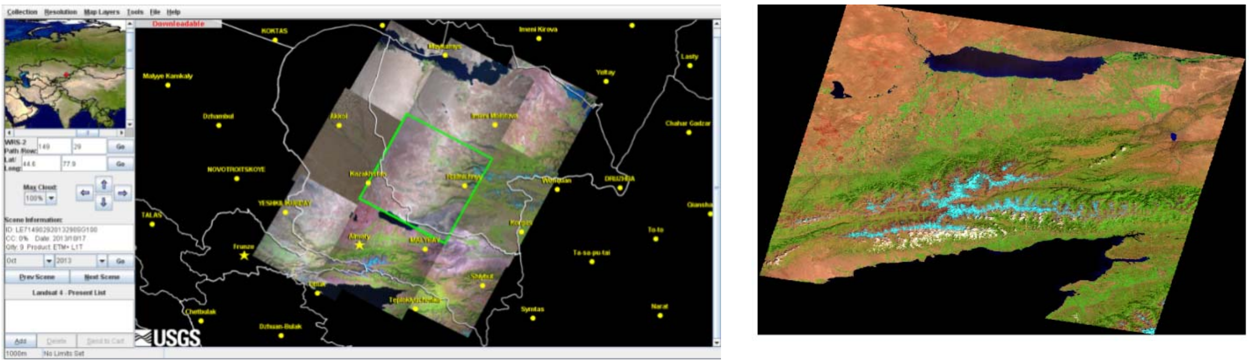

Figure 2 – Search with satellite imagery Glovis directory

In conducting research the images from the spacecraft, Landsat-7 and 8 are used.Viewed image was acquired in September 1999 and 2015 on the territory of Karasai district of Almaty region. This work shows a portion of a single image from a series of images from the spacecraft Landsat-7 and 8, where algorithms NDVI with learningwere used.

All processes related to the processing of satellite imagery we are doing in the software package ArcGIS 10.1. The ArcGIS software package, available from the ESRI American corporation, provides the most comprehensive set of features for editing, visualization and processing of remote sensing data (RS) and their integration into geographic information systems (GIS).A distinctive feature of ArcGIS software system is an open architecture and the availability of the Python programming language, with which you can significantly extend the functionality of programs for specialized tasks: automate the existing algorithms, as well as create their own data processing algorithms and perform batch processing of remote sensing data. The advantages of ArcGIS includes an intuitive ArcToolbox, allowing novice users to quickly learn all the necessary data processing algorithms.Logic drop-down menus make it easy to find a function that is needed in the analysis or data processing [15].

Regardless of the task standing before the researcher, the image processing includes the following processing steps:

– Selection and preparation of images (figure 2);

– channel bonding (figure 3);

– Cut the study area (figure 4);

– classification of NDVI (figure 5);

– processing and interpretation of results (figure 6, 7).

Initially, the images received from the satellite, require calibration, geometric correction, and brightness distortion hardware and coordinate referencing.This process is now well developed. Our task here is to determine the scale levels and spectral bands.Obviously, with all the choice of variety, there are objective limitations, such as the technical capabilities of existing imaging systems, the properties of the objects themselves and transmitting environment, weather conditions, and also features the work of organizations that prepare the image.

In our case, we must first unite the downloaded multichannel data into a single file. And it gives us some advantages:

– Data are more convenient to be managed (copied, moved, etc.);

– Data can be visualized in full color (RGB), selecting the desired combination - a combination of channels;

– Analysis of the data also can be done on several channels, rather than for each one separately (eg classification, index calculations, etc.).

To start we upload the individual zones and combine with the commands add data → Open → ArcToolbox → Data Management Tools → Raster→ Raster Processing → Composite Bands (figure 3):

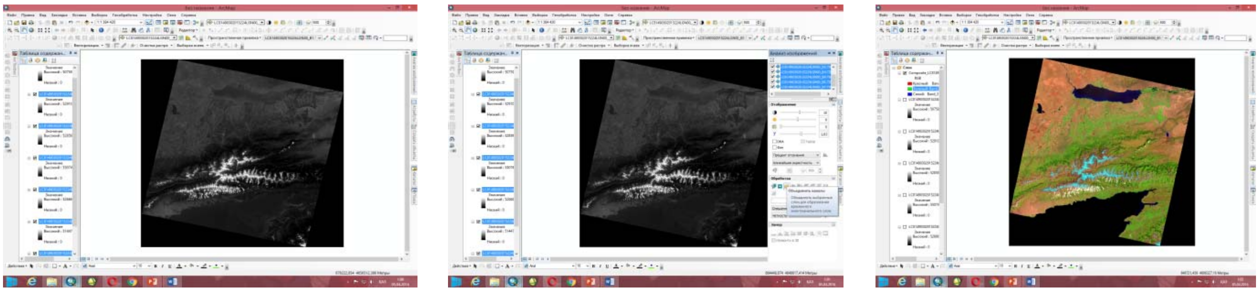

Figure 3 – Add the data and their union

Next, we extract their territory of the images using the command ArcToolbox → the Spatial Analyst Tools → Extraction → Extract byMask (figure 4):

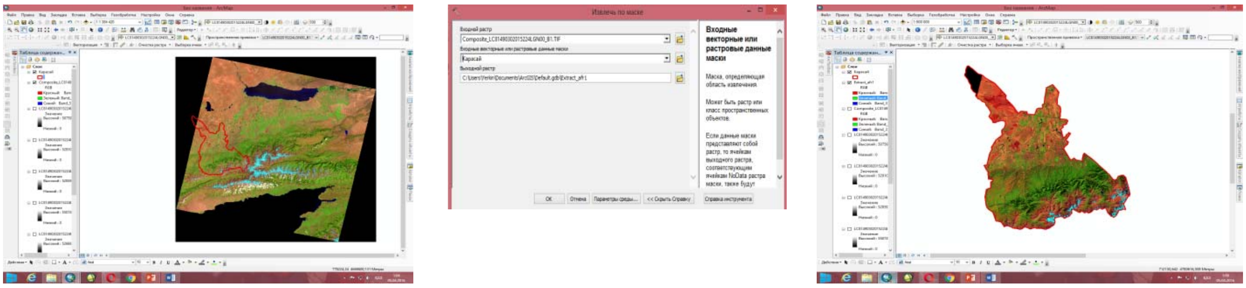

Figure 4 – Remove the territory on the border

After that, we will prepare an image for the classification of NDVI.To do this in ArcGIS-lo, we go into the Analysis of the image and open the Image Analysis Options.There we make setting on the Red channel, select Channel 7, and in select Infrared Channel 4, the check mark is put on the output of scientific data.Next we choose the cut satellite images and click on the NDVI symbol.After that, the result comes out in black and white using Image property → Symbols → The choice of colors (figure 5):

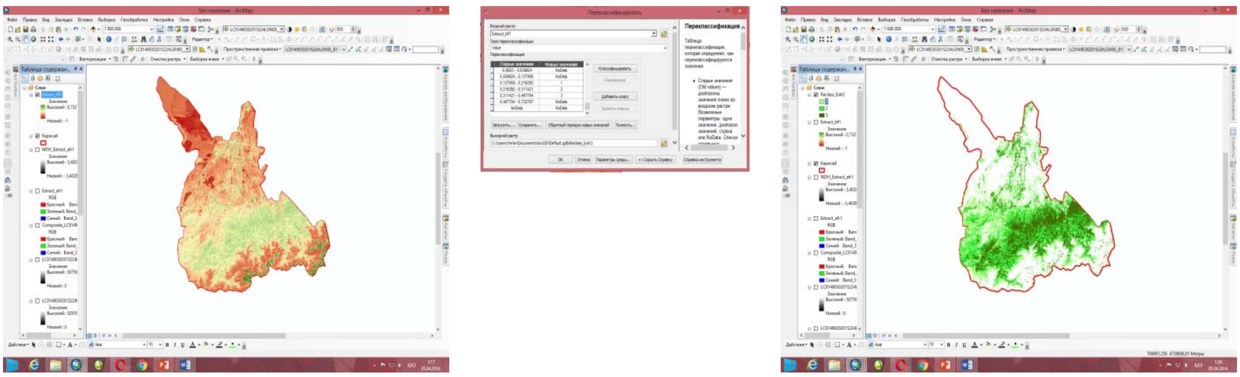

Figure 5 – Classification methods of NDVI

Results and discussion. Development of computer spatial data analysis technologies has resulted in the current use as object classification of grid cells (matrix), regularly covering the entire territory.Each cell of the grid has a certain linear size and geographic coordinates.In accordance with the terminology of K.V. Zworykin [16] the cell may be referred to regional carriers of information. However, in order to emphasize the indivisibility of this unit, we will use the term - elementary territorial unit [17]. Selecting areas on the genetic basis of (mono-, parageneses) begins with the definition of objects and the factors influencing them.As there is no coordination and subordination between the various factors, the grouping can be performed on several grounds, regardless.Integrated physical and geographical studies include three stages: preparation, field and desktop.Due to the increasing technical equipment of expeditions and the constant improvement of methods of analysis and fieldwork ratio of durations of the three of stages recent times changes to the side of increasing time spent in pre field and desktop.Their average ratio can be determined as 2:1:3, whereas previously the ratio was 1:1:2 [18].

Final NDVI map, showing the genesis of morphological characteristics and vegetation patterns, will be a synthesis of pre-NDVI maps and content information collected in the field.

On the basis of the classification criteria of NDVI and signs of their isolation, the proposed by V.A. Nikolayev [19], each type was differentiated on the vegetation.To implement this separation as classification signs VI Kiryushin [20] proposes to use the level of sub-types of soils and sub-plant formations, which are the major functional components of NDVI systems.Therefore, adhering to these principles, we have the outline of each vegetation have been clarified in the study region.They are described in detail and shown in the "Map NDVI of Karasai districtof Almaty regionof the RK» scale 1: 100 000.The total number of plant cover is divided into 3 classes.As a result, it is shown in comparative tests in 1999 and 2015.2015 was more favorable for agricultural land. By comparing in 1999 agricultural landscapes-developed a little, it is shown in figure 6.

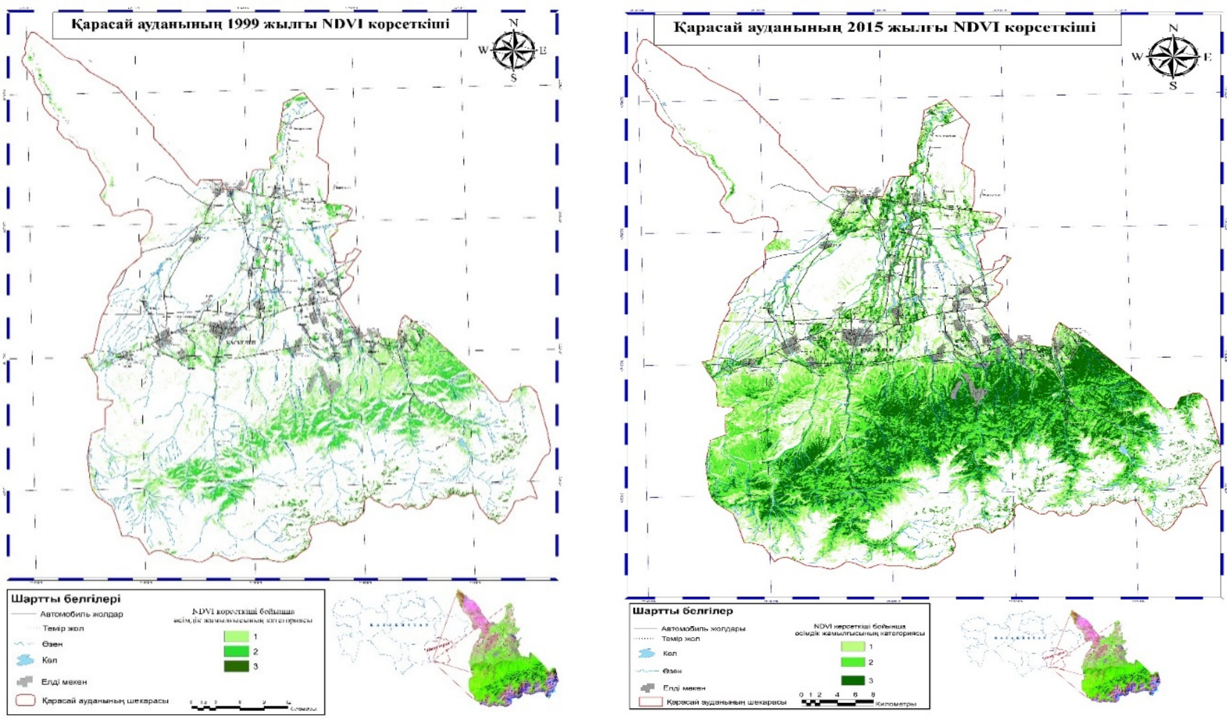

Figure 6 – Map fairness of NDVI 1999 and 2015 Karasai district of Almaty region

The results of the development of agricultural land in 1999, the total area was 8399 hectares. Of these, 5005 ha of rainfed land, 3394 hectares of irrigated land.

The results of development of 2015, performance doubles. The total area was 1986 hectares (figure 7). Of these, 9922 ha are rainfed land, 9064 hectares irrigated land.

Conclusion. Collection and data pre-processing of multispectral imagery of representative areas of Karasai districtof Almaty region were performed. For processing the data Landsat satellite image and software maintenance ArcGIS 10.1 was selected; A comparative and data analysis on efficiency of decoding agricultural vegetation of Karasai districtof Almaty regionby single-level controlled classification and modern methods of multi-level classification based on structural and spatial model of the source images were carried out. Analysis of these studies were realized according to our order system. First we

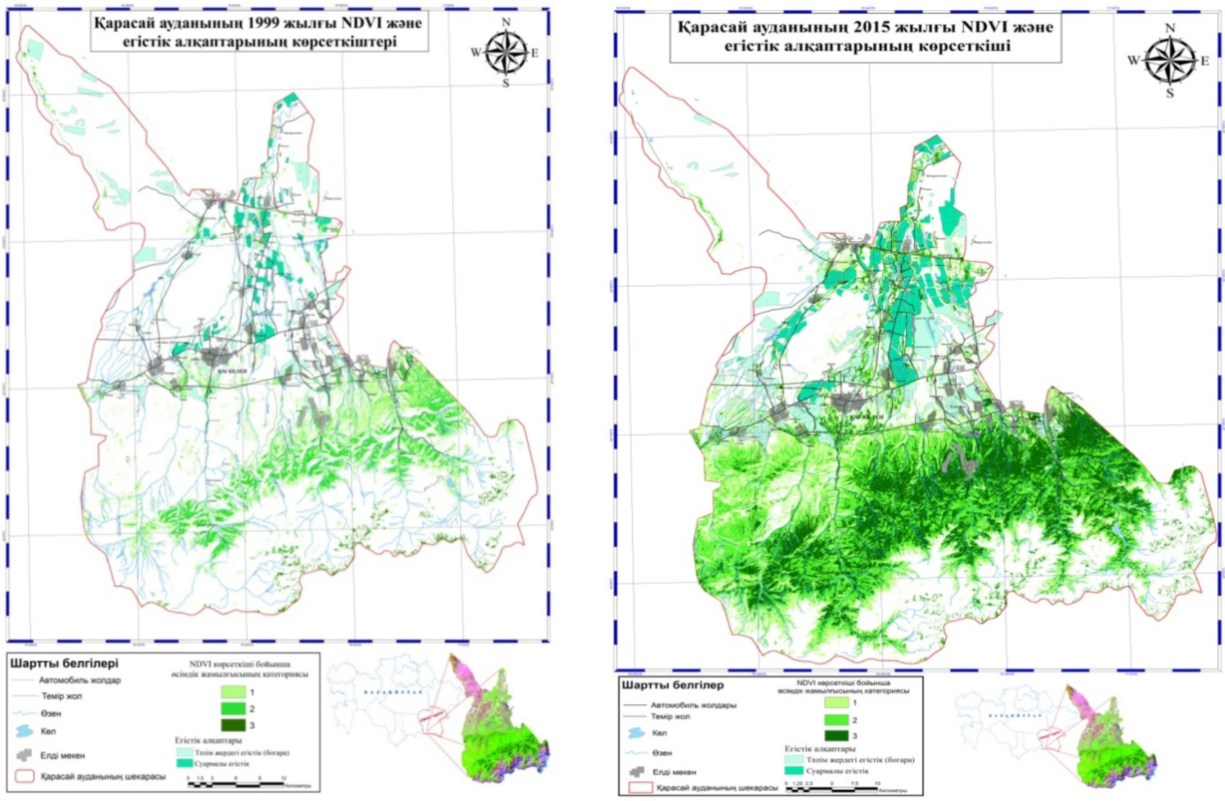

Figure 7 – Map fairness of NDVI and Plot of agricultural land in 1999 and 2015 Karasai district of Almaty region

conducted channel bonding and comparison for decrypting the desired channels. Then, classifications NDVIwere made. Thereafter, a determination of the dynamics of change, which correspond to the contours of plant formations was done. As a result, "Demonstration map of NDVI in 1999 and 2015 of Karasai districtof Almaty region" in the scale of 1: 100,000was compiled; On the basis of the above card stock materials using GIS technology ArcGIS made electronic versions of "Demonstration map NDVI and agricultural land of 1999 and 2015 in Karasai district of Almaty region" in the scale of 1: 100,000 were compiled. This job also required a system and order. First of all, analyzed maps (each separately) were digitized through a geographic information system to specifically determine the extent of the contour in differentiated subtypes of agricultural landscapes. Thus, through vegetation the types of agricultural landwere determined. In conclusion, - In the end, using GIS technology, the electronic version of the comprehensive maps of agricultural land have been obtained.

The study of agricultural land, consisting of rainfed and irrigated lands has shown that its comparison of 1999 to 2015 doubled the agricultural landscapes.

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ҚАРАСАЙ АУДАНЫНЫҢ (АЛМАТЫ ОБЛЫСЫ) АУЫЛ ШАРУАШЫЛЫҚ ӨСІМДІКТЕРІНІҢ ДИНАМИКАСЫН МУЛЬТИСПЕКТРАЛЬДІ БЕЙНЕЛЕР НЕГІЗІНДЕ БАҒАЛАУ

Аннотация. МақаладаАлматы облысының Қарасай ауданындағы ауылшаруашылық өсімдіктерінің динамикасын бақылау және бағалау үшін әртүрлі уақыттық серияларда пайда болатын мультиспектральді бейнелерді шешуге арналған әдістерді таңдау және өңдеу бойынша ғылыми проблеманы шешудегі зерттеу менөңдеу нәтижелері келтірілген.

Құрылымдық және кеңістіктік модельдер негізінде орта кеңістіктік ажыратымдылықтың (LANDSAT-7,8) мультиспектральді бейнелерін алдын-ала өңдеу әдістері Алматы облысының Қарасай ауданындағы ауыл шаруашылық өсімдіктерін бастапқы зоналық бейнелерді жіктеуге қарағанда тиімдірек шешуге мүмкіндік береді. Дешифрлеу сенімділігі құрылымдық және кеңістіктік модельді пайдалану арқылы орта есеппен 16%-ға артады. Құрылымдық және кеңістіктік модельдердіпайдалана отырып, Алматы облысының Қарасай ауданындағы ауылшаруашылық өсімдіктерінің жіктелуі бойынша эксперименттер альпі ормандарын, аралас ормандарды, өзен бассейндерінде және орман екпелерінде, көгалданған жерлерді, ауылшаруашылық жерлерін, әсіресе, қолдан суарылмайтын және суарылатын жерлерде дешифрлеу деңгейі жеткілікті сенімді. Ауыл шаруашылық өсімдіктерін дешифрлеуден алынған нәтижелері LANDSAT-7, 8 мультиспектральді бейнелердің әр түрлі кезеңдерінде болуына сәйкес 1:100,000 масштабтағы өсімдіктер карталарын жасауға және жаңартуға, сондай-ақ 1:100,000 масштабта өсімдіктердің динамикасының картасын жасауға мүмкіндік береді.

Алматы облысының Қарасай ауданындағы ауыл шаруашылық өсімдіктерінің спектралды талдауы бойынша ауылшаруашылық жерлерінің, әсіресе, қолдан суарылмайтынжәне суарылатын жерлердің ең ақпараттандырылған аудандары жасыл және орташа инфрақызыл болып табылады.

Түйін сөздер: LANDSAT-7, 8, өсімдіктердің жіктелуі, мультиспектральді түсірілімдер.

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ОЦЕНКА ДИНАМИКИ СЕЛЬСКОХОЗЯЙСТВЕННОЙ РАСТИТЕЛЬНОСТИ КАРАСАЙСКОГО РАЙОНА (АЛМАТИНСКАЯ ОБЛАСТЬ) НА ОСНОВЕ МУЛЬТИСПЕКТРАЛЬНЫХ ИЗОБРАЖЕНИЙ

Аннотация. В статье представлены результаты исследований и разработок, которые рассматриваюся как решение научной проблемы, касающейся выбора и разработки методов дешифрирование происходящих в разных временных рядах мультиспектральных изображений для мониторинга и оценки динамики сельскохозяйственных растений Карасайского района Алматинской области.

Методы предварительной обработки мультиспектральных изображений среднего пространственного разрешения (LANDSAT-7,8) на основе структурной и пространственной модели позволяют более эффективно расшифровывать сельскохозяйственные растения Карасайского района Алматинской области по сравнению с классификацией исходных зональных изображений. Надежность дешифрования с использованием структурной и пространственной модели увеличивается в среднем на 16%.Эксперименты по классификации сельскохозяйственных растений Карасайского района Алматинской области по мультиспектральным изображениям с помощью структурных и пространственных моделей показали способность расшифровывать альпийские леса, смешанные леса, кусты, находящиеся в бассейнах рек и лесных насаждениях, культурные земли садоводов, сельскохозяйственные угодья, особенно богарные и орошаемые земли с достаточным уровнем надежности. Полученные результаты дешифрирования сельскохозяйственных растений в соответствии с наличием в разное время мультиспектральных изображений LANDSAT-7, 8 обеспечивают возможность создания и обновления карт растительности масштаба 1: 100 000, а также создание карты динамики растительности в масштабе 1 : 100 000.

Спектральный анализ сельскохозяйственных растений Карасайского района Алматинской области показал, что наиболее информативными областями сельскохозяйственных угодий, особенно богарными и орошаемыми землями, являются зеленый и средний инфракрасный диапазон.

Ключевые слова: LANDSAT-7, 8, классификация растительности, мультиспектральные изображения.

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THE ECONOMIC BELT OF THE SILK ROAD: OPPORTUNITIES AND RISKS FOR KAZAKHSTAN

Key words: the Economic belt of the Silk Road, EBSR initiative, digitalization of the Silk Road, interface with the EAEU and the SCO, risks, environmental threats, regional cooperation.

The initiative "Economic belt of the Silk Road" (hereinafter referred to as the initiative or EBSR), voiced by the Leaderof China Xi Jinping, touches the prospects of economic development of the whole subcontinent - Eurasia [1].

The long-term, large-scale and conceptual nature of the initiative is confirmed by the fact that in 2015 the State Council of the People's Republic of China (CPC) decided to issue a document entitled "Excellent prospects and practical actions for the joint creation of the Economic belt of the Silk Road and the Silk Road of the XXI century" for the implementation of the strategic concept "One belt - one way", which united EBSR and the Silk Road of the Sea [2].

This document declares that EBSRis open to all countries, international and regional organizations, and also creates the basis for economic cooperation between the PRC and interested countries. It is assumed that the main routes of EBSRwill be from China:

- through the Central Asia region, Russia to Europe (to the Baltic Sea);
- through the Central Asia region and West Asia to the Persian Gulf and the Mediterranean Sea;
- to South-East Asia, South Asia, to the Indian Ocean [2].

The initiative is designed for several decades to come. At present, it represents one of the vectors of China's advance towards a new role of a global power. This should lead to the creation of a full-fledged free trade zone from the north-western provinces of China, Central Asia to Central and Eastern Europe.

China is carrying out large-scale multidirectional work to support and promote the Initiative. So In 2016 a special Russian-language magazine "Silk Road-Revue" was founded, which is published once a month and informs about events, events that are somehow connected with the implementation of EBSR. Only one issue of this magazine for 2018 - contains more than 20 articles, materials on this topic. Pages of the magazine are provided to experts from countries passing through the territory of the Great Silk Road.

And the Boao Forum for Asia (Boao, Hainan Province), held in April this year, in which more than 2,000 delegates from around the world participated, issued the "Annual Report on the Competitiveness of Asia in 2018". The document notes that the "Belt and the Way" initiative has become the driving force of regional economic integration in Asia, within which regional economic cooperation is constantly growing. The initiative provides a large number of jobs and higher incomes, as well as creates favorable conditions for contacts and cooperation [3].

This indicates the objectivity of the Initiative, which emerged on the transcontinental level. EBSR develops, involving countries and regions, attracting the approval of international organizations and regional structures. Against this backdrop, we can highlight some of the opportunities and risks of Kazakhstan's participation in this initiative.

EBSR as a risk of increasing environmental threats. The implementation of the Initiative is a potential source of increasing environmental threats for the Central Asian region and, in particular, for Kazakhstan. Within its framework, "dirty" enterprises will be transferred outside China [4]. Environmental risks and threats are obvious and significant. Among them are:

– large growth in traffic volumes and construction of infrastructure;

– export of environmentally harmful production from the territory of China to other countries, including Kazakhstan;

– exclusion and active exploitation of land, water and other types of natural resources.

The first threat is associated with the expansion of traffic flows EBSR. For highways, the large-scale construction of railways will lead to a significant deterioration of the environment of the countries participating in the project.

The next threat - the export of "dirty" productions to transit countries, as a result, will lead to increased pollution of the environment. This threat should be balanced by the tightening of environmental standards and regulations based on the closure of such production and improving the management of the resources used.

The third threat, the alienation of land, water and other types of natural resources must be accompanied by purposeful efforts to increase environmental standards for the technologies and industries used, as well as compensatory measures for conserving the biological diversity of natural ecosystems [5].

Therefore, the Initiative identifies the need to develop measures and effective tools to reduce environmental threats. It is proposed to build objects of "green" low-carbon infrastructure to prevent the negative impact of EBSR projects on the environment and climate [2].

To reduce the impact of environmental threats of EBSR in Kazakhstan, an important measure is the implementation of the Concept on the transition of our country to a "green" economy [6]. The concept is aimed at the effective use of natural resources and improving the welfare of citizens of Kazakhstan through economic diversification, the creation of renewable energy sources, environmentally friendly technologies. Improving the living conditions of citizens, strengthening the health of the nation and increasing the life expectancy of the population will be due to the improvement of the state of the environment. Kazakhstan has the image of a responsible member of the world community for sustainable development at the global and national levels thanks to the initiatives of the President of the country N.Nazarbayev to create institutional foundations for promoting a "green" economy in the Eurasian space [7].

Information and digitalization of the Silk Road. A good opportunity for Kazakhstan is the initiative proposed by the to promote the construction of a cross-border network of fiber-optic lines and other types of communication, to raise the level of international telecommunications for the construction of the so-called "Information Silk Road" [2].

The participation of Kazakhstan in this direction is objectively supported by the State Program "Digital Kazakhstan" (Program). It is aimed at including:

– acceleration of economic development;

– improving the quality of life through digital technologies;

– the creation of a digital economy in the future [8].

The Program provides for the direction "Digital Silk Road", which involves the development of a high-speed and secure infrastructure for the transmission, storage and processing of data.

The implementation of the "Digital Silk Road" involvestwo initiatives: 1) expanding the coverage of communication networks; 2) increased cybersecurity. The first is planned to conduct broadband Internet access to the villages, develop a new generation mobile infrastructure and modernize the satellite system. To strengthen cybersecurity, the Program envisages the creation of an institutional structure, including a coordination center and three laboratories.

In rural areas, the Internet will be conducted through fiber-optic communication lines. They will be built within PGPs in more than 1,000 rural settlements. More than 2 million people can use communication services, in state agencies and budgetary institutions. In addition, the adoption of standards for a new generation of mobile communication 5G will provide additional opportunities for the development of the "Digital Silk Road" [8].

It is expected that the Program, during its implementation until 2022, will provide a tangible impetus for technological modernization of the country's leading industries, will create conditions for large-scale and long-term growth of labor productivity. EBSRwill become a driver of development, providing technological modernization of the country's leading industries and creating conditions for large-scale and long-term growth in labor productivity.

Pairing EBSRwith the Eurasian Economic Union (EAEU) and the Shanghai Cooperation Organization (SCO). The One-Way, One-Way Initiative stimulates the docking of the country's development program and their cooperation and enables the creation of new forms and channels of international cooperation and a new model of global governance [7].

As part of the effective cooperation mechanisms of the Initiative, it is envisaged to strengthen and take advantage of the multilateral mechanisms, to which the SCO primarily refers [2]. Here it is necessary to distinguish the following.

1. The SCO promotes the cooperation of member countries in the areas of trade, finance, investment, infrastructure,and energy. Work is underway to develop the transport infrastructure and mutual trade, which are priorities in EBSR.

2. The SCO countries have the necessary factors for economic growth - raw materials, skilled labor,and technology. They also occupy a convenient geostrategic position with respect to existing and promising ways of world trade.

3. The SCO region is a huge and capacious consumer market, which includes three major economies of the world - China, Russia,and India.

4. Presence of institutional factors. At the summit of the heads of SCO member states in June 2017, new institutional opportunities for deepening trade and economic cooperation and strengthening the competitiveness of the region were examined to promote the economic growth of member countries.

In this regard, the SCO is an important element (platform) for the development of ESMP, strengthening of interaction and coordination of joint efforts.

As for the Unified Energy System, there is an increasing role in the development of the Eurasian continent. Experts from different countries are considering a good opportunity to interface it with EBSR. The agreement on this was achieved at the highest level. Let us highlight a number of aspects.

1. Prospects for bilateral cooperation in the framework of the EAEC interfacingwithEBSR. So Kazakhstan is actively implementing the plan for the cooperation of the interface of the national program "Nurly Zhol" and EBSR.

2. The EAEC plays an important role in the development of the Eurasian continent. At the same time, the following conditions must be met for conjugation of EBSR and EAEC:

A) Development of institutional support issues;

B) Ensuring security and stability as key conditions for successful pairing;

C) The development of humanitarian cooperation is one of the important priorities and elements of the foundation of EBSR. A striking example of this is the provision of annual government educational scholarships to students from countries passing along the "Belt and the Way" [3].

The conjugation of the EAEU and EBSRwill contribute to the development of the process of the Eurasian partnership, open to interaction with all interested states and regional integration structures.

Summing up, it can be stated that the Economic belt of the Silk Road is an objective and evolving process, in which the current tendencies such as the digitalization of the Silk Road, interface with the regional blocks of the SCO and the EAEU are being formed. However, the impact of EBSRis also the reverse side - significant risks in the form of environmental threats.

In conclusion, I would like to note that the participation of the Central Asian countries, including Kazakhstan in EBSR, is objective. Therefore, it is necessary to continue work on the implementation of the Initiative and take advantage of the benefits of EBSR in order to promote the development of Kazakhstan's national economy, taking into account the trends and risks considered [9].

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THE ECONOMIC BELT OF THE SILK ROAD: OPPORTUNITIES AND RISKS FOR KAZAKHSTAN

Аннотация. Мақалада Қазақстанның Жібек жолының экономикалық белдеуіне қатысуына байланысты пайда болатын жаңа үрдістер қарастырылады. ШЫҰ және ЕАЭО сияқты құрылымдардың ара қатынасы және халықаралық ынтымақтастықтың жаңа түрлерінің пайда болуы талданады. Қазақстанның Жібек жолының экономикалық белдеуіне қатысуының пайдалы жақтары, мүмкіндіктері және тәуекелдіктері анықталады.

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ЭКОНОМИЧЕСКИЙ ПОЯС ШЕЛКОВОГО ПУТИ: ВОЗМОЖНОСТИ И РИСКИ ДЛЯ КАЗАХСТАНА

Аннотация. В статье рассмотрены некоторые значимые аспекты и возможные подходы участия Казахстана в инициативе Экономический пояс Шелкового пути. Проанализированы формирующиеся и актуальные тенденции Экономического пояса Шелкового пути, такие как цифровизация Шелкового пути, сопряжение с ШОС и ЕАЭС. Определены благоприятные факторы, возможности и риски участия Казахстана в ЭПШП.

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FORMATION OF UNIFIED AREA OF KAZAKHSTAN AND CENTRAL ASIA: ISSUES AND OPPORTUNITIES

Abstract. The authors noted that Kazakhstan in its foreign policy proclaimed the principles of multi-vector, which means openness to cooperation in various fields, based on the interests of security and development of the state. The main tasks and directions determining the content and structure of the research are highlighted in the work. It was revealed that the ROK and CA countries occupy an important place in global geopolitical development both due to the importance of the region and the availability of natural and other types of resources. The main conclusions of the work include the need to create an interactive platform among the participating countries as one of the effective and successful forms of regional cooperation and interaction. The article is addressed to researchers, state bodies for assessing the level of the country's foreign policy and its security.

Keywords: foreign policy, multi-vector, security, Central Asia, dialogue platform, regions, globalization, cooperation, interaction.

Foreign policy affects various areas of development of states and regions of the world: security, socio-cultural, political aspects of their existence, has a solid cultural and civilizational basis, and is a powerful unifying factor for countries with different levels of economic and political potentials. By and large, we are talking about the realization of national interests and the strengthening of regional and global security, taking into account the main vectors for the development of foreign policy:

- priorities of modernization of foreign policy;
- development of diplomacy;
- strengthening regional and global security;
- Strengthening national defenses, etc.

The formation of a unified space in Central Asia (CA) is connected, first of all, with its transformation into one of the key regions of the world in the system of geopolitical coordinates of Eurasia. Central Asian states have significant potential for economic development (minerals, natural resources, cheap labor, etc.) and occupy an important political and strategic position between Europe and Asia.

In recent years, the center of gravity of the world economy has shifted to Central Asia, while Kazakhstan occupies a unique position of a convenient and safe transit route "Europe-Asia". The main factors that determine the new role of Central Asia are the following:

- the region is located in the center of the Eurasian continent;
- the balance of forces in the space of the Eurasian continent depends on the direction of the development of the situation in countries and the region;
- in the region a huge number of natural, primarily hydrocarbon, resources of world importance are concentrated;
- Central Asia is located at the junction of Euro-Asian transport corridors [1].

In CA, there are significant opportunities for integrated development and modernization of the region. At the same time in CA, the local, regional and global interests of various states converged. Central Asian interests are represented by the world (USA, Russia, China) and regional powers (Iran, Pakistan, Turkey, India).

Central Asian states are interested in strengthening relations with China; attracting Chinese investment capital in the development of national economies, transport communications; providing mutually beneficial trade; strengthening the sphere of monetary circulation, as well as cultural and humanitarian rapprochement of the peoples of the region. In the foreign economic field, the development of bilateral and multilateral relations with China is of great importance to the system of Kazakhstan, Kyrgyzstan, Russia, and Tajikistan.

Modern foreign economic processes reflect changes in the global economy and politics, the role and influence of the countries of Asia, China (one of the drivers of the world economy). For the Republic of Kazakhstan (ROK) and the Central Asian countries, which are in search of a way out of raw dependence and modernizing economies, these issues are of current importance. Another group of issues is connected with the aggravation of the geopolitical situation in the world and regions.

In the Address of the President of the Republic of Kazakhstan to the people of Kazakhstan of 10.01.18, it was noted that the world community is currently developing in the conditions of profound and cardinal changes: technological and social [2].

According to the experts of the World Bank, the global index of competitiveness is 50% provided by public administration institutions, and 50% falls on the institutions of civil society and business. In the rating of competitiveness 2017-2018. Kazakhstan took 57th place out of 137 countries, there is a decrease in comparison with last year (53rd position). In conditions of digitalization, the competitiveness of the national economy depends on an efficient process-oriented choice of optimal solutions and schemes for the implementation of economic entities. Information is transformed into knowledge as the main factor in the implementation of production and economic activities. It is about integrating the knowledge of individual agents (firms / regions / states) and transforming them into a specific system for solving / realizing current and strategic tasks.

For foreign experts on geopolitics, Kazakhstan and the countries of Central Asia are of interest from the point of view of studying their history and seeing their development for the future: borders, features of economies, ethnic and confessional issues, and also due to the importance of the region and the availability of natural resources, primarily energy.

In the search for financial, economic, innovative, technological, infrastructural, transit and other factors of regional integration, the changes in the world and / or regions that are occurring require a restart of programs and the renewal of the overall integration concept. We are talking about the development of new integration projects, primarily related to changes in the content of the political order and the institutional foundations of the states of the world community. In this regard, according to Russian experts, it is necessary to develop a network management model in Central Asian countries, taking into account the geostrategic initiative of the leading countries: the US, China, and Russia [3].

In order to implement the Strategic Plan and the Message of the President of the Republic of Kazakhstan, "New Opportunities for Development in the Context of the Fourth Industrial Revolution", it is necessary to develop new innovative programs related to ensuring stability and improving the efficiency of the national economy and its successful integration into international and regional groupings for the near and long term and alliances. This is a study of the theoretical and practical aspects of the multi-vector nature and security of the foreign policy of the Republic of Kazakhstan and the countries of Central Asia. The question is about the formation of architecture of qualitatively new models of production, business, trade, logistics, management. This will change the format of education, healthcare, public administration, communication between people, and, therefore, it is legitimate to talk about the need to develop a new paradigm for the development of the state, the economy and the entire Kazakh society. The management of the foreign policy sphere of the state / region determines the management of:

- factors of internal and external environment;
- Self-development of subjects;
- current and strategic activities of individual entities and the system as a whole;
- Knowledge of individual, team, network, etc.

This involves studying the systemic links, ensuring effective political, economic and national security of the country / countries, determining the configuration of their multi-vector policies, identifying risks associated with changes in the geopolitical situation at the global and regional levels. In this regard, the main directions of multi-vector and security can be presented in figure 1.

The main directions of multi-vector and security RK and CA countries

- development of methodological approaches to the study of multi-vector and security in the foreign policy of the Republic of Kazakhstan and the countries of Central Asia in the analysis of existing concepts in the field of the international economy
- a study of the security factors in Kazakhstan and the countries of Central Asia and the Caspian region in the modern period, taking into account modern global challenges
- assessment of the prerequisites for economic development of the RK and CA countries in identifying trends and features of the functioning of the world economic system. Improvement of the foreign policy of the Republic of Kazakhstan in relation to the countries of Central Asia, taking into account the successful experience of foreign economic activities of the advanced countries and the development of the main directions of the multi-vector and secure foreign economic policy of the Republic of Kazakhstan, taking into account the opportunities and prospects for the development of the domestic economy
- the study of the issues of bilateral and multilateral political and economic ties between Kazakhstan and Central Asia on the basis of integration into regional and international structures, taking into account the realities of the economic, geopolitical and civilizational format

Figure 1 – The main directions of multi-vector and foreign policy security in Kazakhstan and the countries of Central Asia

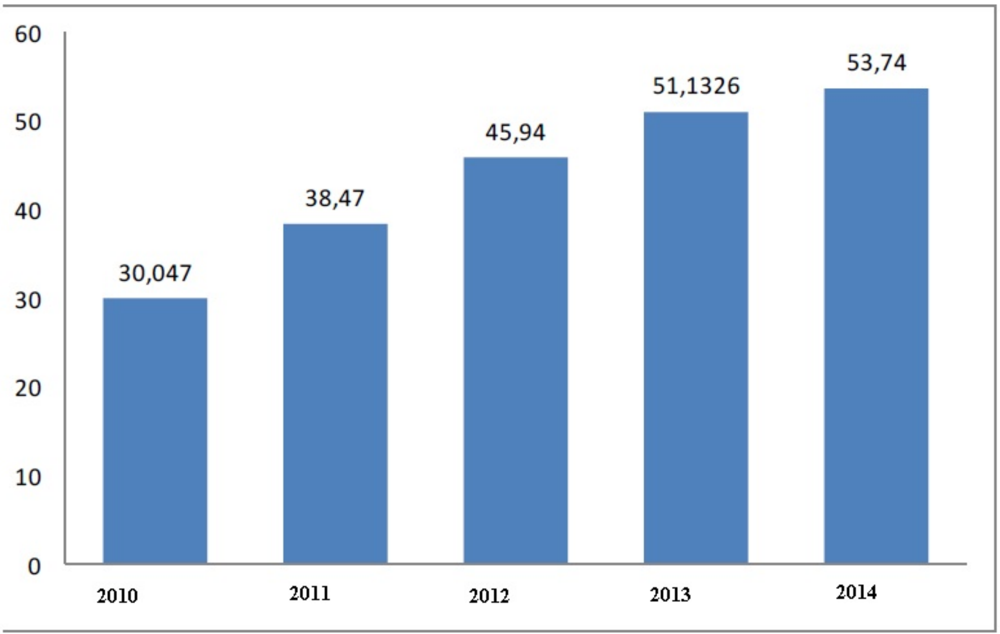
The formation of a new regional / international / world-wide formation now and in the perspective takes place in the form of an actively developing digital industry, and the digitalization of the evolution of society affects virtually all aspects and possible trends of the world community development. As information and communication technologies (ICTs) are gradually becoming one of the main instruments of social and economic development, their improvement in the foreign policy and economic spheres of the participating countries is legitimate in the following main areas:

- creation of new markets for products and services;
- stimulation of development and modernization of national economies of the region;
- change in the structure of the export-import policy of the member countries;
- industrialization of backward and depressed regions in the countries of the region;
- improvement of the state policy of the member countries in the spheres of internal and external migration;
- Strengthening the exchange rates of national currencies in the region;
- increase of competitiveness and efficiency of national economies of the countries of the region;
- improvement of the foreign policy of the participating countries in ensuring national security and preventing possible conflict threats and acts of confrontation.

The implementation of these directions is the basis for the multi-vector and security of the foreign policy of Kazakhstan and the states of the Central Asian region, which is important for ensuring mutually beneficial cooperation and assistance in regional integration. This is one of the ways to global economic growth in post-crisis conditions as a driver of national economies, as well as global equalization of models of globalization and regionalization.

We are talking about the formation of a new model of regional integration and an innovative model of regional cooperation. In order to achieve national security of the countries, it is necessary to define strategic goals and objectives that must take into account the priority of preserving state and national interests, the sovereignty of states and a steady increase in the living standards of the population of the participating countries.

The region of Central Asia is very attractive for foreign countries, whose interests are concentrated in the spheres of oil, natural gas, non-ferrous metals, infrastructure construction, agriculture, light industry. So, in the long term, China's trade and economic cooperation with Central Asian countries tends to grow. Five countries of Central Asia: Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and Turkmenistan are bordered on the west by the PRC, have land routes of communication with each other. China borders with three countries of Central Asia. During this period (in figure 2) there is a shift in trade and economic cooperation between China and the countries of Central Asia.



Source: Zou Jin Jian Interaction of the states of Central Asia and China in the context of the "Economic belt of the silk road" // Izvestiya KazUmOiMY im. Abylai Khan. series "International Relations and Regional Studies". 2015. N 4(22). P. 74-83.

Figure 2 – Trend of trade development between China and 5 Central Asian countries, billion US dollars

According to experts, as a result of cooperation with Chinese companies in *Uzbekistan*, projects have been implemented, including the construction of four strings of the Central Asia Peoples Republic of China gas pipeline, the Dehkanabad Potash Fertilizer Plant, the Kungrad Soda Plant, the creation of a modern digital communications network, construction and modernization dozens of enterprises for the production of road-building machinery, mobile phones, the production of building and finishing materials, leather products, equipping educational institutions and other projects. The Chinese leadership suggested laying the 4th thread of the Turkmenistan-China gas pipeline through the territory of Uzbekistan, Tajikistan and Kyrgyzstan in the direction of China.

Tajikistan intends to expand cooperation with China in the areas of trade, energy, agriculture and transport, create favorable conditions for the construction of a gas pipeline between China and Central Asia, and actively participate in the construction of the "economic belt of the Silk Road." It is important for Tajikistan in Central Asia to maintain a strategic basis - mutual interest in strengthening cooperation in the areas of security and trade and economic cooperation. The main problems hampering the growth in the supply of products include difficulties with the transportation of goods across the borders of Uzbekistan and Kazakhstan, the presence of numerous customs barriers, high transport tariffs, which leads to a significant rise in price. Affected by the lack of a well-functioning system of financial security for transactions and contracts, as well as problems of an investment nature.

The segment of the modern Silk Road, passing through the RK, is the safest and convenient, supplemented by a more efficient and productive mode of transport: pipeline - for the realization of crude oil and gas [4].

In recent years, the legal framework for the systemic mutually beneficial economic and political cooperation in the Central Asian CIS area has been designed [5], in particular, in the energy sphere, spheres of sustainable development and high technologies.

Uzbekistan's relations with Central Asian countries are subject to political and economic risks. Tashkent's position on issues of regional security and economic integration (Uzbekistan withdrew from the EurAsEC and the CSTO) makes the Uzbek leadership a fairly complex partner. For example, Uzbekistan is blocking a number of CSTO and SCO initiatives in the Afghan direction, suggesting an alternative settlement model under the "6 + 3" formula (including neighboring Afghanistan, including Turkmenistan and Pakistan, as well as NATO and the United States, but excluding which have common borders with CSTO members: Kazakhstan and Kyrgyzstan). This approach does not support the Russian Federation and the Central Asian countries (Kazakhstan, Kyrgyzstan, Tajikistan). Tashkent retains its membership in the SCO.

The formation of priorities for the foreign policy of the state was influenced by such factors as intra-continental, i.e. lack of direct access to the sea. The unfavorable geographical location of Kazakhstan as a landlocked country adversely affects its economic development [6].

Thus, the basis of the foreign policy of RK should remain the principle of multi-vector, which involves active cooperation with European countries, USA, China, Russia, countries of the Middle East, as well as the development of a "collective" of cooperation in international organizations: UN, CICA, OSCE, SCO, CIS, OIC, and others.

As is known, *Kazakhstan* is among the world leaders in the export of ferroalloys, copper, lead, zinc, mineral fertilizers, and also holds leading positions in the world in the export of flour and wheat. Kazakhstan can become a global center of food security. The total area of agricultural land in the Republic of Kazakhstan is 90 million hectares, of which 25 million belong to arable land and 61 million to pastures. Potentially China's investment project in *Kazakhstan* is cooperation in the field of raw materials for nuclear power plants. The Republic of Kazakhstan occupies the second place in the world on explored uranium reserves. Due to intensive development of nuclear power, China will become the largest consumer of Kazakhstani uranium.

Traditionally, the concentration of Chinese investments in the energy sector of Central Asia is high. China plans to promote vertical integration projects in the oil and gas sector, to increase cooperation in the field of renewable energy sources, as well as actively participate in strategic sectors of Central Asian countries.

Regarding Kyrgyzstan, it should be noted that the country needs structural economic restructuring, changing the format of regional integration provided security is provided [7]. Kyrgyzstan is a member of the CSTO, the SCO, EurAsEC. Russia is interested in the development of the energy base in the republic: the construction of new hydropower stations and reservoirs.

The development of transport communications has a double meaning for Central Asia with its vast but sparsely populated territories [8]. In CA countries, the goods are mainly transported by rail. At present, Kazakhstan uses only 6% of its transit possibilities. All 5 countries in the region have a weak index of logistics efficiency.

Creation of a wide network of innovative multimodal hubs covering overland trade routes (by road and rail to air and wholesale fiber) will exit the Central Asian region to ports and will cause the reverse bind to the national economy. This led to the development of pipelines (gas pipelines from Turkmenistan and oil from Kazakhstan to China and so on. D.), Power lines, structural, technological, regional and inter-regional infrastructure-logistics projects, innovation and digital circuits of management, etc. Ie, to increase the competitiveness of our country, it is necessary to implement the following components of the industry 4.0:

- modernization of the national economy;
- Innovative policy and innovative management;
- political and institutional modernization;
- digital technologies;
- modernization of public consciousness.

The process of modernization of the economy determines the modernization of the national socio-political consciousness, the formation of an integration platform that connects the horizons of the past, present and future well-being and ensuring the security of Kazakhstan and the countries of Central Asia. It is all the things without which is difficult to talk about the implementation of government programs: Third Modernization of Kazakhstan - A new model of economic growth, the National Program "Rouhani zhaңғyru" Program "Digital Kazakhstan" and, as a result, digitization and computerization of the economy of the whole country. According to experts, the average annual rate of digitization in Kazakhstan is 23%. According to the "Third modernization of Kazakhstan: global competitiveness" on 01/31/17, the "... according to forecasts of the leading world experts in 2020 25% of the world economy will be digital, and implementation of technology of digitization of the economy, allowing the state, business and society to interact effectively, becoming more large-scale and dynamic process. According to the level of digital activity, the RK refers to the "catching up" countries, in the BCG E-intensity rating in 2016, it took 51 positions out of 73 ... ". As it follows from this, Kazakhstan may lag behind. Indicators of readiness of domestic entities to implement elements of Industry 4.0 for the present period are presented in table 1.

Table 1 – Readiness of the RK subjects for the implementation of the Industry 4.0

The subjects of the real sector of the economy of the Republic of Kazakhstan	Industry 2.0	Industry 3.0	Industry 4.0
Manufacturing enterprises	80%	3%	no data
Enterprises of the mining industry	60%	21%	no data
Source: data of the RK MID.			

Table 2 shows the main macroeconomic data of 5 countries. There is a stable increase in population, especially in Tajikistan. The pace of economic growth in countries is significantly different.

Table 2 – Main macroeconomic indicators for the region of Central Asia [9]

	Population, mln.	GDP, bln. $	Per capita income ($ PPP)	Demographic growth (2000-2015)	Economic growth (2013-2016)	Orientation type *
KAZ	17,7	173	24260	+19 %	+20 %	Exporter of energy resources
KYR	6	6,5	3300	+21 %	+21 %	Exporter of labor force
TJK	8,5	7,8	3320	+ 36%	+25 %	Exporter of labor force
TURKM	5,4	36	15760	+ 20%	+33 %	Exporter of energy resources
UZB	31	66	6110	+ 20%	+30 %	Hybrid
Source: World Bank Database 2016, IMF World Economic Outlook Database, 2017.						

In addition to Kyrgyzstan, there are general low regional export figures for manufacturing products. For Kazakhstan, the collapse in oil prices by 10% had a negative effect in the amount (2.2% of GDP), all other things being equal. Ie, the change in the rent of minerals is manifested (for Turkmenistan, Kazakhstan and Uzbekistan - oil, gas, Kyrgyzstan - gold, zinc, Tajikistan - lead).

The main goal of economic integration is to simplify and intensify exchanges, to stimulate the creation and effectiveness of new areas of activity and to promote economic growth.

China is currently one of the most progressive states in the world. According to the World Bank, China is the 4th world economic development center along with the US, Japan and Germany. To double its GDP, the United States took 47 years, Japan - 33 years, South. Korea - 10 years.

The countries of Central Asia and Kazakhstan continue to maintain traditional ties with Russia. China is gradually building its position in Central Asia. Within the framework of the general course on creating a security belt, China in recent years has formed the basis for constructive relations with virtually all Central Asian states [10].

Proceeding from the foregoing, it seems relevant to develop an additional tool for a global dialogue based on the info-communicative platform for the participating countries. This is not an alternative, but an instrument for organizing effective dialogue and interaction in the region, which is necessary for information, stable communication, exchange of views and, ultimately, fruitful cooperation.

Today, there is a new geopolitical situation in the Central Asian region. In this context, the foreign policy of the Republic of Kazakhstan, aimed at multilateralism and -vectorism, can become one of the key mechanisms for solving many problems, primarily in the field of international and regional security. This provides for an assessment of the possibilities for developing a multi-vector and safe policy of Kazakhstan in relation to the countries of Central Asia, studying issues and relationships between Kazakhstan and Central Asian countries in the historical, economic, political, cultural and civilizational aspects in order to understand the potential of cooperation and overcome existing problems in their traditional relations and develop methodological approaches to ensuring multi-vector and security in the conduct of foreign policy of Kazakhstan and the countries of Central Asia.

In the face of the global challenges of our time, it is necessary to rethink the established stereotypes in the sphere of foreign policy interests and create integration associations and unions. It is about resetting the programs of regional interethnic cooperation and interaction to implement the principles of multi-vector and security of foreign policy of the participating countries: the ROK and the countries of Central Asia. This determines the study of systemic links, ensuring effective political, economic and national security of partner countries, determining the configuration of their multi-vector policy, identifying risks associated with changes in the geopolitical situation at the global and regional levels.

The ideas of the President of the Republic of Kazakhstan N. Nazarbayev made it possible to organically form a proposal on the establishment of a regional structure on security and confidence-building measures in Asia and to build a CICA mechanism, which today unites 26 states of the region. In this regard, priority is given to increasing mutual trust between countries, it is trust measures that are the main framework of the regional security architecture in the region and occupy a special place in the creation of a new model of cooperation in Central Asia, the study of regularities at the regional and country levels.

The interdisciplinary and multi-vector format of the relations between the ROK and the CA countries will expand the possibilities for securing strategic decisions in the context of activation, integration and the formation of an open foreign policy of countries while minimizing risks in international cooperation. In this regard, it is necessary to create an intercountry dialogue platform on the formation of a multi-vector and secure foreign policy for solving current and strategic tasks of a regional scale. Ultimately, it is expected to create economic regulators, important and necessary to solve current and long-term problems of cooperation and cooperation between Kazakhstan and Central Asian countries.

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ФОРМИРОВАНИЕ ЕДИНОГО ПРОСТРАНСТВА КАЗАХСТАНА И ЦЕНТРАЛЬНОЙ АЗИИ: ПРОБЛЕМЫ И ПЕРСПЕКТИВЫ

Аннотация. Авторами отмечено, что Казахстан в своей внешней политике провозгласил принципы многовекторности, что означает открытость к сотрудничеству в самых различных сферах, исходя из интересов безопасности и развития государства. В работе выделены основные задачи и направления определяющие содержание и структуру исследования. Выявлено, что РК и страны ЦА занимают важное место в глобальном геополитическом развитии как в силу значимости региона, так и наличию природных и др. видов ресурсов. К основным выводам работы относится необходимость создания диалоговой платформы между странами-участницами как одной из эффективных и успешных форм регионального сотрудничества и взаимодействия. Статья адресована научным работникам, государственным органам для оценки уровня внешней политики страны и ее безопасности.

Ключевые слова: внешняя политика, многовекторность, безопасность, Центральная Азия, диалоговая площадка, регионы, глобализация, сотрудничество, взаимодействие.

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ҚАЗАҚСТАН ЖӘНЕ ОРТАЛЫҚ АЗИЯНЫҢ БІРЫҢҒАЙ КЕҢІСТІГІН ҚҰРУ: МӘСЕЛЕЛЕРІ МЕН БОЛАШАҒЫ

Аннотация. Авторлар Қазақстанның сыртқы саясатында көпвекторлық қағидаларын жариялап, ашық, әр түрлі салаларда ынтымақтастыққа дайын, қауіпсіздік мүдделері мен мемлекеттік дамуды ұстанатын ел ретінде көрсетіп отыр. Жұмыста зерттеудің негізгі міндеттері мен бағыттары нақтыланған. Қазақстан және Орталық Азия елдері жаһандық геосаяси дамуда маңызды орын алатын, аймақтың ерекшелігі мен табиғи ресурстардың молшылығы бар аумақ ретінде айқындалды. Мақаланың негізгі қорытындыларына қатысушы елдер арасында сұхбат алаңын қалыптастыру қажеттілігі болып отыр. Ол аймақтық ынтымақтастық пен өз ара әрекеттестігінің тиімді және табысты формасы болып табылады. Мақала елдің сыртқы саясаты және қауіпсіздігінің деңгейін бағалау үшін ғылыми қызметкерлерге, мемлекеттік органдарға арналады.

Түйін сөздер: сыртқы саясат, көпвекторлық, қауіпсіздік, Орталық Азия, сұхбат алаңы, аймақтар, жаһандану, ынтымақтастық, өз ара әрекеттестік.

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SCIENTIFIC-METHODICAL BASES OF THE DEVELOPMENT OF TRANSPORT LOGISTICS IN THE REPUBLIC OF KAZAKHSTAN

Abstract. The resolutions of the Government of the Republic of Kazakhstan (RK) and other state documents pay special attention to the development of the unified transport system of the Republic of Kazakhstan, modernization of all its elements, improving the efficiency of the transport complex, providing services to key sectors of the economy. It is also emphasized that the transport complex of the Republic occupies a special place in ensuring the implementation of the state strategy of further dynamic and stable development of the economy of Kazakhstan, its integration into the world economy. In this article discusses the issues of scientific and methodological basis for the development of the system of regional transport and logistics centers, taking into account the specifics of the Republic of Kazakhstan. In the context of market competition and globalization of the world economy, the most important factor of economic growth is the formation of integrated logistics systems, covering both individual areas of business and entire regions and countries. As a relatively new methodology of market orientation, which allows regulating regional markets of goods and services, the article considers the logistics approach, which provides an increase in the overall synergetic effect on the basis of the integration of participants of the regional system of cargo and goods movement.

Key words: transport and logistics centers, integrated logistics systems, logistics approach, transport and logistics infrastructure, cargo transportation volume, advanced logistics technologies, integration, world economy, entrepreneurship, economic growth.

Introduction. One of the most effective ways of economic and social development, both in individual regions and the Republic of Kazakhstan, in general, is the formation of a backbone network of regional transport and logistics centers. Logistic approach to material flow management has been known for a long time. However, the economy on a fairly large scale demands relatively recently. This is due to factors of the external material flow management systems, as well as the development of the logistics approach. Experience of using logistics systems in the developed capitalist countries shows, that transport costs were reduced on 7-20%; the cost of loading and unloading, storage inventories and finished products was reduced on 15-30%; total logistics costs on 12-35%; material stocks was accelerated on 20-40%; stocks of materials and finished products were reduced on 50-200%.

Methods. The results of the analysis of scientific research, as well as Russian and foreign experience in the management of the transportation process, show that one of the most significant areas of improvement of the cargo system and the movement of goods is the creation of support network of regional transport and logistics centers, which improve the productivity of vehicles, reduce the time of turnover, improve the coordination and interaction of modes of transport, the development of multimodal and intermodal transport of goods in containers, providing additional services to the clients on the level of international standards.

Results and discussion. Our bibliographic research showed that the applied aspects of use the logistics tools in the management of transport in our country have not yet been fully formed. However, over the past decade, a number of researchers have made a significant contribution to the definition of this fundamental application area. Theoretical and methodological basis of this research is laid in the works of domestic and foreign scientists, for instance, A.I. Berg, A.N. Romanova, A. Vaisman, L.B. Mirotin, D.O. Novikov, V.N. Stakhanov, Y.E. Tashbayev. These issues were reflected in the works A.M. Gadzhinckiy, J.M. Nerush, A.A. Smekhov.

Among the foreign works in this area can be identified the research works of Ronald H. Ballou, M. Cristopher, J.A. Cooke, J. Durant, A.T. Kearney, M. Laplaze, J. Meunier, J. Weil, and others.

There are many logistic periodicals abroad. Among them are the following: Journal "Taga" (Switzerland), "International Journal of Physical Distribution and Logistics Management" (Great Britain), Journal of Business Logistics (USA), Modern Logistics Management (Germany). Very interesting ideas of logistics we can see in the Russian periodicals. There are such famous journals, as: Logistics, LogInfo, Resources: Information, Supply, and Competition. International Road X Transportation, and others.

It should be noted that the regional aspects of transport logistics in relation to the conditions of Kazakhstan have not been sufficiently studied. There are such Kazakh authors, who research this problem: Burkotov E.V., Tuleushin S.T., V.P. Dobritsa, Sisekenova M.B., and others [1, p. 38].

They created theoretical scientific base of logistics management on transport. At the same time, the development of information technologies, globalization of goods and transport markets, the integration of Kazakhstan into the world transport system require new scientific generalizations and determine the range of tasks to be solved in our article.

The relevance of logistics is explained by several factors:

- economic, the main priority for the company to search the opportunities to reduce production costs, in order to increase the profit of the organization and the growth of quality, providing a range of services to the consumer, therefore, the development of market relations, the principle of "calculation+benefit+consumer", which leads to increase of the importance of logistics;
- information, which most closely connects to the market and logistics, as the subject, means and component of logistics processes;
- technical, which manifested in the fact that logistics as a management system, its subjects and objects are developed on the basis of technical achievements in the warehouse and management (automation and computerization of management), providing decisive success in commodity markets [2, P.64].

In Kazakhstan, there is a formation of a multi-layered economy, intensive development of the market of transport services, the creation of a competitive environment in the field of goods movement and international transport of goods, changes in the system of organizational and economic relations between the participants of the transport process while strengthening the integration trends in the world economy, which requires the search for adequate market mechanisms to ensure the effective functioning of the transport complex, which is considered logistics.

In the world economic system, logistics, as the most effective, market-oriented way of planning, formation and development of commodity-material and related flows with the lowest costs in the entire logistics chain, has firmly gained its position.

The operation of transportation determines the efficiency of moving products. The progress in techniques and management principles improves the moving load, delivery speed, service quality, operation costs, the usage of facilities and energy saving. Transportation takes a crucial part in the manipulation of logistic. Reviewing the current condition, a strong system needs a clear frame of logistics and a proper transport implements and techniques to link the producing procedures. The objective of the paper is to define the role of transportation in logistics for the reference of further improvement. The research was undertaken to assist logistics managers, researchers and transportation planners to define and comprehend the basic views of logistics and its various applications and the relationships between logistics and transportation [3, p. 58].

Table 1 provides an overview of the Periods of development of logistics. Logistics services, information systems and infrastructure/resources are the three components of this system and closely linked. Also four characteristics of the period were included.

The interaction of the three main components in the logistics system is interpreted as follows. Logistics services support the movement of materials and products from inputs through production to consumers, as well as associated waste disposal and reverse flows. They include activities undertaken in-house by the users of the services (e.g. storage or inventory control at a manufacturer's plant) and the operations of external service providers.

Table 1 – Periods of development of logistics

The name of the period	The characteristics of the period
Fragmentation Period (1920-1950)	The formation of the principles of logistic management of material flows and reduce the overall costs
Period of formation (1950-1970)	Formation of the theory and practice of logistics, search for new ways to reduce costs in production and distribution, development of computer and information technologies
Period of Development (1970-1980)	Finding new ways to reduce production and distribution costs
Integration period (1980-1990)	Combining the logistics functions of the company and its partners in the logistics chain (purchase-production - distribution of sales)

The operation of transportation determines the efficiency of moving products. The progress in techniques and management principles improves the moving load, delivery speed, service quality, operation costs, the usage of facilities and energy saving. Transportation takes a crucial part in the manipulation of logistic. Reviewing the current condition, a strong system needs a clear frame of logistics and a proper transport implements and techniques to link the producing procedures. The objective of the paper is to define the role of transportation in logistics for the reference of further improvement. The research was undertaken to assist logistics managers, researchers and transportation planners to define and comprehend the basic views of logistics and its various applications and the relationships between logistics and transportation [4, p. 222].

Since logistics advanced from 1950s, there were numerous researches focused on this area in different applications. Due to the trend of nationalization and globalization in recent decades, the importance of logistics management has been growing in various areas. For industries, logistics helps to optimize the existing production and distribution processes based on the same resources through management techniques for promoting the efficiency and competitiveness of enterprises. The key element in a logistics chain is transportation system, which joints the separated activities. Transportation occupies one-third of the amount in the logistics costs and transportation systems influence the performance of logistics system hugely. Transporting is required in the whole production procedures, from manufacturing to delivery to the final consumers and returns. Only a good coordination between each component would bring the benefits to a maximum [5, p. 16].

The purpose of this paper is to re-clarify and redefine the position relationship between transportation and logistics systems through collecting and analyzing various application cases and practices in logistics from literatures. It is to provide a general framework and expect to be referred for further development and researches. The paper started from introducing the development of logistics and transport-related sectors based on a historical review. Afterwards it discussed the interrelationships of transportation and logistics. It expresses the benefits that transportation brings to logistics activities and vice versa. For instance the increase of the efficiency of logistics also would bestead to release traffic load in the urban areas. Furthermore, some major logistics activities and concepts were also discussed in this paper. It especially presents City Logistics independently due to it is considered as a main tendency and an available method of future integration of transport and logistics in the urban areas. Finally, this paper will discuss and conclude the potential further development of logistics systems.

Currently, there is a model of relations between marketing and logistics in the management of all economic activities of the company:

- environmental analysis and market research;
- analysis of consumers;
- planning of goods, definition of assortment specialization of production;
- planning of services, optimization of market behavior on effective sales.

The first two marketing tasks can be solved without the participation of logistics, but the third and fourth should be solved together.

It should be noted that the object of logistics has been researched through material flow, but at some stages of its management is quite specific. Thus, procurement logistics is the management of material flows in the process of providing the enterprise with raw materials. At this stage, the contracts are concluded and their execution is controlled, measures are taken in case of violation of the terms of delivery [6, p. 28].

Logistics services comprise physical activities (e.g. transport, storage) as well as non-physical activities (e.g. supply chain design, selection of contractors, freightage negotiations). Most activities of logistics services are bi-direction. Information systems include modeling and management of decision making, and more important issues are tracking and tracing. It provides essential data and consultation in each step of the interaction among logistics services and the target stations. Infrastructure comprises human resources, financial resources, packaging materials, warehouses, transport and communications. Most fixed capital is for building those infrastructures. They are concrete foundations and basements within logistics systems.

A significant part of logistics operations on the way of material flow is carried out with the help of various vehicles, and transport is a link between the elements of logistics systems.

Transport logistics is the movement of the required amount of goods to the desired point by the optimal route in the required time and at the lowest cost.

The exhibits at transport logistic cover the entire value-added chain in the industry, from intralogistics and warehouse management to systems and services for freight transport, and IT, telematics and telecommunications solutions. A detailed breakdown of the range of products and services on display is set out on the shows [7, p. 171].

The biggest exhibition of transport logistic every year we can see in Germany. The visitors and exhibitors at transport logistic come from all over the world, the majority, however, from Europe. According to Messe München, the international scope of this show is increasing steadily: in 2013 45% of the exhibitors came from outside Germany.

Establishing the most appropriate location of the facility in terms of logistics distribution network and customers can be quite critical. Potential suitability investigation of the region to set up an appropriate logistics geographical area center would be useful to be determined from multiple criteria. In geographic information systems (GIS), spatial analyses which consider multiple criteria are called multi-criteria decision analysis (MCDA). The aim of this study is to evaluate planning performance of GIS to determine logistics centers. This study was conducted to analyze the most suitable place for establishing new logistic park according to specified five criteria. The criteria which taken to account in practice have identified as: production areas, residential areas, leisure areas, transit transport network and slope map. Some district was selected as study of area. After all to the direction of selected criteria and given weights; close to the industrial areas, away from the residential areas, low slope areas, quit close to transit and port areas were identified as potential logistics park areas and GIS was found rapid and objective to produce suitable potential logistic areas.

The result of using the transport logistics system is a high probability in the “six rules of logistics”: the right cargo, in the right place, at the right time, in the right quantity, quality, with minimal costs [7, p. 172].

Logistics was initially a military activity concerned with getting soldiers and munitions to the battlefront in time for flight, but it is now seen as an integral part of the modern production process. The main background of its development is that the recession of America in the 1950-s caused the industrial to place importance on goods circulations. The term, logistics, was initially developed in the context of military activities in the late 18-th and early 19-th centuries and it launched from the military logistics of World War II. The probable origin of the term is the Greek logistikos, meaning ‘skilled in calculating’. Military definitions typically incorporate the supply, movement and quartering of troops in a set. And now, a number of researches were taken and made logistics applications from military activities to business activities. Business logistics was not an academic subject until the 1960-s. A key element of logistics, the trade-off between transport and inventory costs, was formally recognized in economics at least as early as the mid-1950-s.

The tasks solved by transport logistics, experts include:

• development of transport systems, including transport corridors and chains;
• ensuring technological unity of the transport and warehouse process;
• joint planning of transport process with warehouse and production;
• determination of the rational route of cargo delivery;

• selection of the type and type of vehicle, etc.

At the level of logistics management of the enterprise, transport logistics management consists of several main stages:

• choice of mode of transport;
• choice of mode of transport;
• vehicle selection;
• selection of carrier and logistics partners for transportation;
• optimization of transport process parameters.

– There are two main approaches to the organization of the transport process:
– traditional;
– logistics, with the participation of the multimodal transport operator [8].

In the traditional approach, there is no single function to control them through material flow. The consistency of links in the promotion of information and finance is low; it is very necessary to coordinate their actions (figure 1).

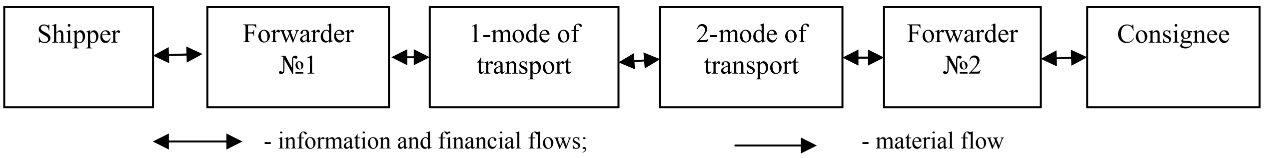

Figure 1 – Traditional approach to mixed transport

Without well-developed transportation systems, logistics could not bring its advantages into full play. Besides, a good transport system in logistics activities could provide better logistics efficiency, reduce operation cost, and promote service quality. The improvement of transportation systems needs the effort from both public and private sectors. A well-operated logistics system could increase both the competitiveness of the government and enterprises [8, p.144].

Transport system is the most important economic activity among the components of business logistics systems. Around one third to two thirds of the expenses of enterprises' logistics costs are spent on transportation.

In the logistics approach to multimodal transportation, a new section of the transport process is added - a single operator of multimodal transportation. The presence of such an operator makes it possible to plan the promotion of material flow and achieve the specified parameters at the output (figure 2).

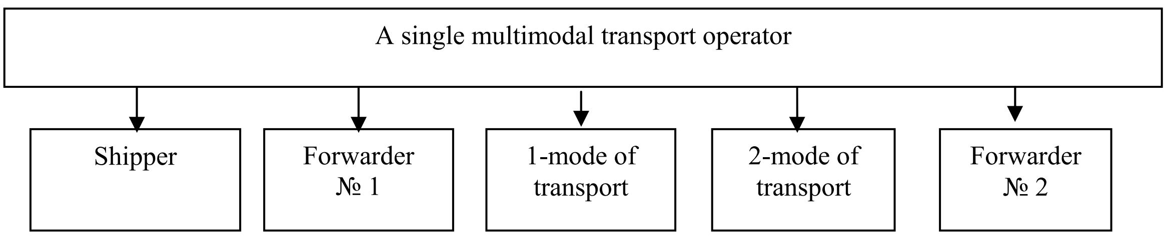

Figure 2 – Logistic approach to mixed transportation

The comparative characteristic of traditional and logistic approaches to the organization of the mixed transportations is given in table 2.

Table 2 – Comparative characteristics of traditional and logical approaches

Traditional hike (direct and mixed transport)	Logistic approach (multimodal transportation)
Two or more modes of transport	Two or more modes of transport
The lack of a common operator of the carriage	Availability of a single transportation operator
The lack of through rates for transportation	A single through rate for the transportation
Sequential scheme of interaction of participants	Sequential central scheme of interaction of participants

Logistics sector is one of the most prominent field in economic development of a country. Travelling Salesman Problem which is studied commonly in logistic sector is also based a number of other problems. Shortly, it is aimed to travel along to n locations with limitation of only visiting each location once. Due to NP-hard nature of problem, it is becoming impossible to find exact solution when the numbers of locations are above a certain level. Due to this reason, heuristic methods are mainly used for solving Travelling Salesman Problem. Ant Colony Optimization Algorithm which is a heuristic method that uses swarm intelligence gives good solutions in solving combinatorial optimization problems. In this study, Ant System and Ant Colony System are tested according to proposed principal of well distributed initial locations and different values of parameters for solving asymmetric Travelling Salesman Problem. Test problem which is in literature is solved by program that is coded in MATLAB programming language. Statistical analysis which is conducted on results indicates that proposed approach provides significant contribution on solutions.

It mainly explores the rationale for the creation of the Metro Mass Transit (MMT) system as a state-backed transit organization despite the Kazakhstan Government's cheered history in the transit industry. The empirical basis of this paper is both primary and secondary data with inclination toward qualitative methodologies. Findings indicate that state intervention in Kazakhstan's mass transit provision have been one of addressing various types of market failures. The paper also demonstrates how the Government was, inter alia, politically motivated to set up the MMT as a single dominant public transit company in Ghana to enjoy state patronage. Though the paper reveals political interference in MMT's operations, the public transit continues to register significant strides in alleviating transit problems encountered by both urban and rural commuters. The paper concludes that state-led transit investment which is closely-tied with private capital promotes efficient transit systems that are socially equitable, ecologically friendly and economically sustainable [8, p. 145].

Transport system makes goods and products movable and provides timely and regional efficacy to promote value-added under the least cost principle. Transport affects the results of logistics activities and, of course, it influences production and sale. In the logistics system, transportation cost could be regarded as a restriction of the objective market. Value of transportation varies with different industries. For those products with small volume, low weight and high value, transportation cost simply occupies a very small part of sale and is less regarded; for those big, heavy and low-valued products, transportation occupies a very big part of sale and affects profits more, and therefore it is more regarded.

Transportation plays a connective role among the several steps that result in the conversion of resources into useful goods in the name of the ultimate consumer. It is the planning of all these functions and sub-functions into a system of goods movement in order to minimize cost maximize service to the customers that constitutes the concept of business logistics. The system, once put in place, must be effectively managed. Traditionally these steps involved separate companies for production, storage, transportation, wholesaling, and retail sale, however basically, production/manufacturing plants, warehousing services, merchandising establishments are all about doing transportation. Production or manufacturing plants required the assembly of materials, components, and supplies, with or without storage, processing and material handling within the plant and plant inventory.

Warehousing services between plants and marketing outlets involved separate transport. Merchandising establishments completed the chain with delivery to the consumers. The manufacturers limited themselves to the production of goods, leaving marketing and distribution to other firms. Warehousing and storage can be considered in terms of services for the production process and for product distribution. There have been major changes in the number and location of facilities with the closure of many single-user warehouses and an expansion of consolidation facilities and distribution centers. These developments reflect factors such as better transport services and pressures to improve logistics performance.

In the conclusion we would like to note, that the concept of reverse logistics has been applied in promoting customer service and resources recycling. Concerning quality control, the defective components and finished products will be returned to their producers through reverse logistics systems. Nowadays, reverse logistics has been developed rapidly for increasing industries' competitiveness, promoting customer service level, and recycling the reusable material. Meanwhile, the demand of reverse logistics brings out a new market for the third-party logistics industries. The role that transportation plays in logistics system is more complex than carrying goods for the proprietors. Its complexity can take effect only through highly quality management. By means of well-handled transport system, goods could be sent to the right place at right time in order to satisfy customers' demands. It brings efficacy, and also it builds a bridge between producers and consumers. Therefore, transportation is the base of efficiency and economy in business logistics and expands other functions of logistics system. In addition, a good transport system performing in logistics activities brings benefits not only to service quality but also to company competitiveness.

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ҚАЗАҚСТАН РЕСПУБЛИКАСЫНДА КӨЛІК ЛОГИСТИКАСЫН ДАМЫТУДЫҢ ҒЫЛЫМИ-ӘДІСТЕМЕЛІК НЕГІЗДЕРІ

Аннотация. Қазақстан Республикасы Үкіметінің Үкімет қаулыларында және басқа да мемлекеттік құжаттарда ҚР біртұтас көлік жүйесін дамытуға, оның барлық элементтерін жаңғыртуға және экономиканың негізгі секторларына қызмет көрсететін көлік кешенінің тиімділігін арттыруға ерекше назар аударылады. Қазақстанның экономикасын одан әрі серпінді және тұрақты дамытудың, оның әлемдік экономикаға интеграциялануының мемлекеттік стратегиясын іске асыруды қамтамасыз етуде республиканың көлік кешені ерекше орын алады. Осыған орай, мақалада Қазақстан Республикасының ерекшелігін ескере отырып, өңірлік көліктік-логистикалық орталықтардың жүйесін дамытудың ғылыми-әдістемелік негіздері қарастырылады. Нарықтық бәсекелестік және әлемдік экономиканың жаһандану жағдайында кәсіпкерліктің бөлек салалары мен елдер мен бірқатар аймақтарды қамтитын интеграцияланған логистикалық жүйелерді қалыптастыру экономикалық өсудің маңызды факторы болып табылады. Тауарлар мен қызметтер үшін өңірлік нарықтарды реттеуді қамтамасыз етуге мүмкіндік беретін салыстырмалы түрде жаңа нарыққа бағытталған әдіснама ретінде, мақалада жүк және өнімнің аймақтық жүйесіне қатысушылардың интеграциясына негізделген жалпы синергетикалық әсердің ұлғаюын қамтамасыз ететін логистикалық тәсіл қарастырылған.

Түйін сөздер: көліктік-логистикалық орталықтар, интеграцияланған логистикалық жүйелер, логистикалық тәсіл, көліктік-логистикалық инфрақұрылым, жүк тасымалының көлемі, озық логистикалық технологиялар.

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НАУЧНО-МЕТОДИЧЕСКИЕ ОСНОВЫ РАЗВИТИЯ ТРАНСПОРТНОЙ ЛОГИСТИКИ В РЕСПУБЛИКЕ КАЗАХСТАН

Аннотация. В постановлениях Правительства Республики Казахстан и в других государственных документах особое внимание уделяется развитию единой транспортной системы РК, модернизации всех ее элементов, повышению эффективности работы транспортного комплекса, обеспечивающего обслуживание ключевых отраслей экономики. Также подчеркивается, что в обеспечении реализации государственной стратегии дальнейшего динамичного и стабильного развития экономики РК, ее интеграции в мировую экономику особое место занимает транспортный комплекс республики. Исходя из этого, в статье рассматриваются вопросы научно-методических основ развития системы региональных транспортно-логистических центров с учетом специфики Республики Казахстан. В условиях рыночной конкуренции и глобализации мировой экономики важнейшим фактором экономического роста становится формирование интегрированных логистических систем, охватывающих как отдельные сферы предпринимательства, так и целые регионы и страны. В качестве относительно новой методологии рыночной ориентации, позволяющей осуществлять регулирование региональных рынков товаров и услуг, в статье рассматривается логистический подход, обеспечивающий увеличение общего синергетического эффекта на основе интеграции участников региональной системы грузо- и товародвижения.

Ключевые слова: транспортно-логистические центры, интегрированные логистические системы, логистический подход, транспортно-логистическая инфраструктура, объем перевозок грузов, прогрессивные логистические технологии, интеграция, мировая экономика, предпринимательство, экономический рост.

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FACTORS OF PSYCHOLOGICAL RESILIENCE AMONG ADOLESCENDS

Abstract. The Soviet scholars studied the problem of individual development, and age stages quite thoroughly and comprehensively. Child psychology, as a branch of psychology, according to many psychologists, is considered one of the most developed areas of psychological science. Recent studies pay greater attention to the child's social development, which depends on changing values, mentality, the novelty in reality, to which we can include (except for values) the spreading IT into the daily life, growing infantilism of children and others. The primary duties of high school student have strong ties with professional and personal self-determination. At this age, the psychological content of many essential age characteristics, including psychological stability, is qualitatively changing. One of the characteristics of modern life is the increased impact on the person of stressful situations. They, having hidden, wait for it in any sphere of life and are always expressed differently. It can be a misunderstanding in a family, a salary delay, the conflict to negatively adjusted seller in the shop. The article deals with the actual problem of the psychological resilience of high school students who are going to study in specialized classes. The question is the fact that at the beginning of training in such classes, many students have difficulties with stress and anxiety. The participants mentioned that the process of adaptation, in which they need to build relationships with peers, teachers and the complicated level of the school program, was the reasons for their high level of anxiety. This problem prompted the creation of a test identifying the levels of students' psychological resilience. We analyzed some Soviet, Russian and Western psychological schools about psychological resilience.

Key word: psychological resilience, stress, self-regulation.

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The article deals with the actual problem of the psychological resilience of high school students who are going to study in specialized classes. The question is the fact that at the beginning of training in such classes, many students have difficulties with stress and anxiety. The participants mentioned that the process of adaptation, in which they need to build relationships with peers, teachers and the complicated level of the school program was the reasons for their high level of anxiety. This problem prompted the creation of a test identifying the levels of students' psychological resilience. We analyzed some Soviet, Russian and Western psychological schools about psychological resilience. In the process of developing the test, we paid attention to the concept of "educational environment"; we analyzed in detail the psychological sources, theories, and concepts related to this phenomenon. The subject of study is high school student who is facing the personal development changes. Therefore the test included judgments related to self-esteem, the ability to build relationships with teachers and classmates, and adaptation to the educational environment. We found significant differences in the level of students' psychological resilience at the beginning of the year and the end of the semester.

The student' psychological resilience protects his personality from disintegration and personality disorders, creates internal harmony, mental health, high performance, and adaptation, especially in connection with the transition to specialized classes.

The theoretical analysis of psychological literature showed that psychological stability is the most important social, psychological and pedagogical problem (B.G.Ananyev, L.I.Antsiferova, A.G. Asmolov, A.A.Bodalev, L.I.Bozhovich, L.S. Vygotsky, E.I.Golovaha, E.E.Danilova, G.A.Kvashnina, E.P.Krupnik, L.V.Kulikov, N.D.Levitov, A.V.Libin, A.V.Petrovsky V. I. Syrensky , V. E. Chudnovsky, V. A. Yadov). According to some scholars, this period covers various aspects of the formation and development of a personality, focusing on self-determination and adaptation to the conditions of a socio-cultural environment.

We should mention a little difficulty which occurs on the translation of the phenomenon of psychological resilience. For a Western School of Psychology, it is "psychological resilience" as a form of mental toughness. Psychological resilience is the ability to cope with a crisis successfully and to return to pre-crisis status quickly. Resilience exists when the person uses "mental processes and behaviors in promoting personal assets and protecting an individual from the potential negative effects of stressors." In simpler terms, psychological resilience exists in people who develop psychological and behavioral capabilities that allow them to remain calm during crises/chaos and to move on from the incident without long-term negative consequences. Psychological resilience is an evolutionary advantage that most people have and use to manage normal stressors. The concept of resilience has evolved over time and its origins can be traced to the discipline of psychology in the 1970s (Thomas & Revell, 2016). Resilience is the ability of a person to recover, adjust or thrive following adversity (Hegney, Rees, Eley, Osseiran-Moisson, & Franics, 2015). It is a complex and dynamic phenomenon (American Psychological Association, 2016).

Resilience is the process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress – such as family and relationship problems, serious health problems or workplace and financial stressors. It means "bouncing back" from painful experiences.

Emotional pain and sadness are common in people who have suffered significant adversity or trauma in their lives. The road to resilience is likely to involve considerable emotional distress. Resilience is not a trait that people either have or do not have. It involves behaviors, thoughts, and actions that can be learned and developed in anyone.

The Soviet School of psychology pays greater attention to a fact of "stability." Psychological resilience is psychological stability. According to E.N. Ignatova, L.V. Kulikova, resilience is a socio-psychological stress tolerance of person to adverse living conditions. Some authors associate this phenomenon (stability) with different aspects of the personality (V.A. Ivannikov, E.P.Ilyin, E.I. Ignatov, V.K.Kalin, L.A. Korostyleva, L.V.Kulikov, A. . Maslow). Rapokhin considers "stability" as:

- the individual ability to complete self-realization and personal growth, timely stimulating;
- adequate resolution of intrapersonal conflicts (motivational, value, role);
- the relative stability of the emotional sphere and favorable mood;
- ability emotional-volitional regulation with the sufficient motivation to the situation.

The basis of own psychological stability, according to Prokhorov, Petrovsky are the balanced mental states that characterize adequate, predictable, balanced behavior and optimal human activity. The psychological stability understands by dynamic characteristics (V.V. Belous, V.S. Merlin).

According to V.S.Rotenberg and V.V. Arshavsky, psychological resilience (stability) is the search activity. The high need for searching, an active, creative attitude push personality to overcome the destructive impact of adverse life circumstances.

Psychological resilience (A.G.Asmolov, B.S.Bratus, N.I.Korolyuk, M.A.Kotik, E.P.Krupnik, L.V.Kulikov, B.V.Kulagin) is persistence to reach the goals.

According to some humanistic psychologists, psychological stability is as part of the process of spiritual and moral education (Kon, T.I.Petrakova, E. Fromm, et al.). This approach identifies in psychological stability system-forming inherent characteristics of the personality, which determine its essential nature and qualitative originality.

Many authors (Bozhovich, E.I.Golovaha, A.F.Lazursky, Leontiev, A. Maslow, G.Olport, E. Fromm, V.E.Chudnovsky) consider the psychological stability of personality as an indicator of moral maturity.

The phenomenon of personal psychological resilience includes the adaptive human body, appropriate conduct, the normal functioning of the mind, ensuring the successful activation of internal resources and overcoming life difficulties (V.Miniiyarov).

Yu.I. Aleksandrov and V.D. Shadrikov emphasize that sustainability determine the totality of personality traits. These include a deep understanding and acceptance of oneself, a positive orientation towards effective communication, high satisfaction with life and one's health.

Psychological resilience affects the interaction between individuals or a group of individuals (L.M. Mitina, V.F. Petrenko, K.V. Sel'chinok, V.I. Slobodchikov). If we resort to medical metaphor, then this concept can be compared with immunity, which is responsible for nonspecific adaptive reactions of the body, developing in response to a threat to its integrity (B.G.Ananiev).

Meanwhile, psychological resilience includes as a high personal potential (stability, stability, balance, adequate self-esteem, adaptability, striving to achieve the goals), providing will regulation in educational activities and focus on constructive interaction in everyday situations. Psychological stability represents the process of preservation of the most optimum operating mode of the mentality of the person in the conditions of constantly changing circumstances and their stressful influence. It depends on such factors as the nervous system of the person, his education, experience, a level of development, etc.

Besides, psychological stability is not an absolute guarantee of stability in general to everything. Psychological stability is instead flexibility of mentality of the person, then firmness and stability of his nervous system. Moreover, the fundamental characteristic of psychological stability is mobility of mentality in continually changing conditions. Psychological stability as well as instability, always "works" according to the scheme.

P.A. Korchemnaya considered the structure of the psychological stability of personality in military psychology. According to her psychological resilience consist of the emotional, volitional, intellectual components.

According to A.V. Permyakova psychological resilience structure includes the following components: psychological (attention, memory, thinking, will and self-attitude), socio-psychological (ability to interact with other people), medical (health, physiological capabilities of the body), engineering and psychological (speed, speed, and accuracy of motor reactions).

Some scholars includes as essential components of the psychological stability : the ability to complete self-realization (E.I.Ignatova, L.A.Korostyleva, L.V.Kulikov, Maslow), personal growth with the timely and adequate resolution of intrapersonal conflicts (motivation, value , role-playing), the relative stability of the emotional sphere and favorable mood (L.V.Kulikov), the ability to emotional and volitional regulation (V.A.Ivannikov, E.P.Ilin, V.K.Kalin, N.P.Rapohin) the motivational tension adequate to the situation (E.Ignatova, E.P.Ilin).

Some scholars emphasize the role of cognitive components of psychological resilience (Yu.I. Aleksandrov, V. D. Shadrikov). Psychological stability of the personality is shown in stability, firmness, resilience which are implemented in a strong-willed component (L.V. Kulikov). Psychologically stable personality can self-regulate and self-organize their behavior in stressful situations, resolve intrapersonal conflicts (E.H. Ericson).

The factors that we identified, one way or another, affect the students' psychological resilience. They can promote or hinder its manifestations in the educational environment, by which it is necessary to understand the totality of educational institutions that form the system of educational and educational influences in the pedagogical process. It is necessary to create the appropriate psychological and pedagogical conditions that will facilitate the process of students adaptation to study in specialized classes (B.M.Bim Bad, Bourdieu, Yu.N.Kulyutkin, S.V. Tarasov, V.A. Yasvin).

Research Methods. Empirical base of research. 107 high school students of specialized classes of school number 29, 45, 159 took part in our study, Ufa. Thus, high school students are the most adaptive regarding solving the principal tasks of this period: educational activities, personal self-affirmation.

We devided participants on two groups: Control group with newcomers 54 students (32 girls and 22 boys); Experimental groupwith 53 students (30 girls and 23 boys). The age of participants was from 15 to 17 - years. The average age was 16.8 years.

For standartization of test of psychological resilience we create data with 257 high school students from different schools in the city of Ufa. The average age was 16.3 years. Participants were 138 girls and 119 boys.

Findings. Meanwhile, such a phenomenon as specialized classes, which are often formed in schools in the 10th-11th grades, cannot but affect the emotional stability and psychological equilibrium of senior pupils. The desire to reach certain heights and demands from parents and teachers make psychological stability the problem area of child development in adolescence. Therefore, the technique developed by K. A. Shinyaev and V. M. Miniyarov is topical, relevant and accessible.

Test Description. As a rule, the specialized class is a new team. A pupil meets new teachers, masters complicated academic program. Thus, the new educational environment affects the self-esteem, stress, striving for success, and other factors of the psychological stability of a senior pupil. [2]

Test "Determination of psychological resilience of personality" for senior pupils (V. M. Miniyarov, K. A. Shinyaev) was developed in order to identify the level of psychological resilience of senior pupils. The test passed psychometric analysis and was standardized.

The tasks of the methodology were based on a theoretical analysis of construct "psychological stability of personality" and survey of probationers (senior pupils described this concept). Next, we identified the structural components of the psychological stability of personality: cognitive, volitional and behavioral ones. We identified strong characteristics of the selected components (based on scientific sources and survey data). The components of psychological stability provided the basis for the test. These structural components have the following content. The cognitive component includes self-understanding and self-acceptance and environment in educational milieu, correlation of concepts of predictable possibilities of present potential; volitional component includes stability, durability, resistance, balance, emotional flexibility, capacity for personal growth; behavioral component includes the ability to self-regulate and self-organize our behavior in various stressful situations, focus on constructive communication in daily life and activities, to create and maintain favorable interpersonal relations, to resolve intrapersonal conflicts.

Efficiency and point discriminatory power index was taken into account while selecting the items (tasks) of the method. Efficiency index was determined by dividing the number of students who gave "key" response by their total number. Discriminatory power index was calculated as the coefficient of correlation of each task of a technique with a total score of the technique. Discriminatory power index of the technical task shows its relevance to the measured parameter (psychological stability of personality). Spearman's R criterion was used to calculate the correlation coefficient. All the values of coefficients of correlation of the technical tasks with the final score are positive, statistically significant ($p < 0.01$) and are in the range from 0.23 to 0.58. It shows the high discriminatory power of the technical tasks.

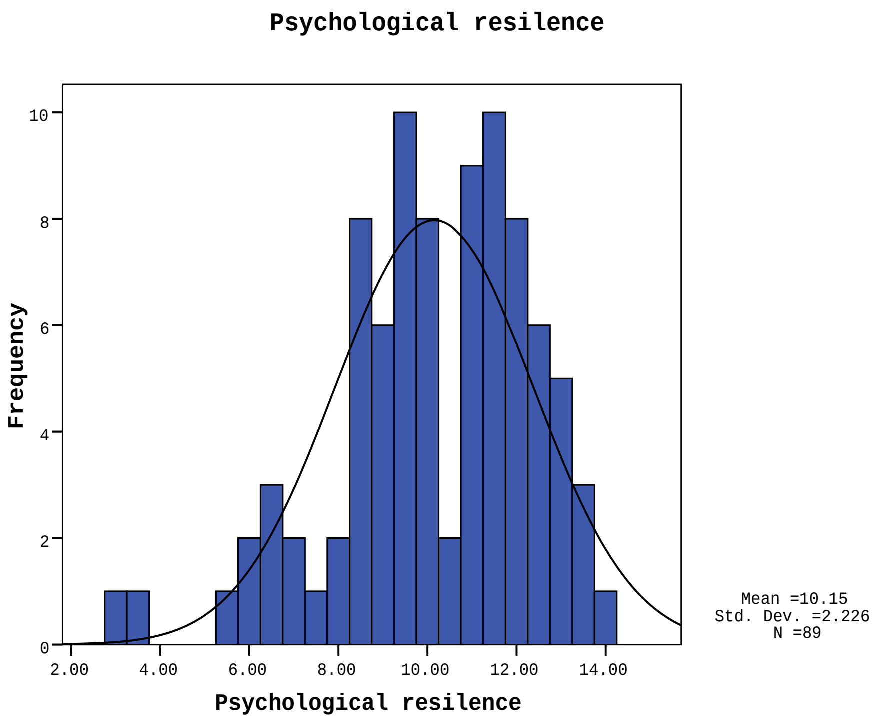

Figure 1 – Psychological resilience with normal distribution

The technique is valid. Test validity is the extent to which a test measures what it is intended. Test validity is based on theory and empirical studies data. The main types of validity include content and constructive ones.

The content validity of a test is the degree of coincidence between the real and desirable content (tasks) of a test (which characterizes a given construct). The content validity was proved as follows. The expert group of five people was asked to assess the compliance of the technical tasks with the construct measured on a five-grade scale where 1 - the task does not correspond to the measured construct in full; 2 - does not correspond at all; 3 - can be attributed to the construct; 4 - is likely to correspond; 5 - fully corresponds. The experts were specialists in psychological diagnostics, high school psychology teachers.

Construct validity reflects representation degree of a test construct in test results and defines the scope of phenomena theoretical structure measured by the test.

We applied "Social and psychological adaptation diagnosis" test developed by C. Rogers and R. Diamond in order to identify construct validity. The construct of "social and psychological adaptation" is theoretically connected with "psychological stability of personality" construct. Pearson's linear correlation criterion defined the relationship between them. The positive significant correlation was discovered. This relationship is direct and explicit, and it reflects the high degree of similarity of psychological stability of personality with adaptation.

Thus, the results of the study suggest that the personality psychological stability test developed is valid. The reliability of the test proves its high quality. The test is considered reliable if it allows obtaining the same indices for each test-taker during the second test. The reliability of the test was determined by the reproducibility and accuracy of the test results.

We did not check the test for retest reliability (it is necessary to assess the risk of errors occurrence that may affect the test result), because the primary condition for retest reliability check conduction is the optimal choice of the time range, in order to reveal the insignificance of the changes. We carried out repeated tests at the end of the academic year, so with such a large time gap, adequate results cannot be obtained.

Table 1 – Correlation between designed test and Social and psychological adaptation diagnosis" test

		Deserved authority	Self-confidence	Susceptibility to stresses	Neurotic	Aspiration to the power	Psych. resilience
Ability to do thing independently	Pearson Correlation	.536(**)	.606(**)	-.304(**)	.328(**)		.442(**)
	Sig. (2-tailed)	.000	.000	.004	.002		.000
	N	93	93	87	88		89
Susceptibility to stresses	Pearson Correlation	-.267(*)	-.360(**)	1	-.673(**)	.230(*)	-.382(**)
	Sig. (2-tailed)	.012	.001		.000	.033	.000
	N	87	87	87	84	86	85
Neuroticism/ Stability	Pearson Correlation	.332(**)	.404(**)	-.673(**)	1		.571(**)
	Sig. (2-tailed)	.002	.000	.000			.000
	N	88	88	84	88		84
Success achievement	Pearson Correlation	.411(**)	.448(**)			.434(**)	.495(**)
	Sig. (2-tailed)	.000	.000			.000	.000
	N	90	90			90	87
Psychological resilience	Pearson Correlation	.470(**)	.452(**)	-.382(**)	.571(**)		1
	Sig. (2-tailed)	.000	.000	.000	.000		
	N	89	89	85	84		89

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 2 presents partial correlations between all study variables, with results for each age group presented separately. We controlled for sex to ensure that any observed differences in the pattern of correlations between age groups were not gender related. As expected, psychological resilience was associated with Deserved Authority, Self-Confidence among adolescents. Psychological resilience evidenced a significant negative correlation with depression and anxiety (Susceptibility to stresses) and a significant positive correlation with Neurotic Scale. That's evidence was quite surprising fact cause most of scholar associate resilience with physiological stability.

Table 2 – Crosstabulation Psychological resilience * Sex * Neurotic Scale

Sex			Neuroticism/Stability			
			Low level	Medium level	High level	Very high level
Female	Psychological resilience	Low level	8	1	0	0
		Medium	8	23	9	0
		High Level	0	4	3	3
	Total		16	28	12	3
Male	Psychological resilience	Low level	1	1	1	0
		Medium	6	5	10	4
		High Level	0	0	4	1
	Total		7	6	15	5

As we see in table 2, 47.4% of females showed a Medium level of Neuroticism/Stability. These participants (82.1%) were identified as students with medium level of resilience. Neuroticism or emotionality is characterized by high levels of negative affect such as depression and anxiety. Neuroticism, according to Eysenck's theory, is based on activation thresholds in the sympathetic nervous system or visceral brain. This is the part of the brain that is responsible for the fight-or-flight response in the face of danger. Activation can be measured by heart rate, blood pressure, cold hands, sweating and muscular tension (especially in the forehead). Neurotic people – who have low activation thresholds, and unable to inhibit or control their emotional reactions, experience negative affect (fight-or-flight) in the face of very minor stressors – are easily nervous or upset. Emotionally stable people – who have high activation thresholds and good emotional control, experience negative affect only in the face of very major stressors – are calm and collected under pressure.

Table 3 – Crosstabulation Psychological resilience * Sex* Extraversion

Sex			Extraversion		
			Introversion	Not Identified	Extraversion
Female	Psychological resilience	Low level	0	7	2
		Medium	1	20	19
		High Level	1	3	6
	Total		2	30	27
Male	Psychological resilience	Low level	0	1	2
		Medium	0	16	9
		High Level	1	2	2
	Total		1	19	13

The majority of participants (43.5%) showed high scores on Extraversion and scale or was not identified (Ambivertion 53.2%). Extraversion is characterized by being outgoing, talkative, high on positive affect (feeling good), and in need of external stimulation. According to Eysenck's arousal theory of extraversion, there is an optimal level of cortical arousal, and performance deteriorates as one becomes more or less aroused than this optimal level. Arousal can be measured by skin conductance, brain waves or sweating. At very low and very high levels of arousal, performance is low, but at a better mid-level of arousal, performance is maximized. Extraverts, according to Eysenck's theory, are chronically under-aroused and bored and are therefore in need of external stimulation to bring them UP to an optimal level of performance.

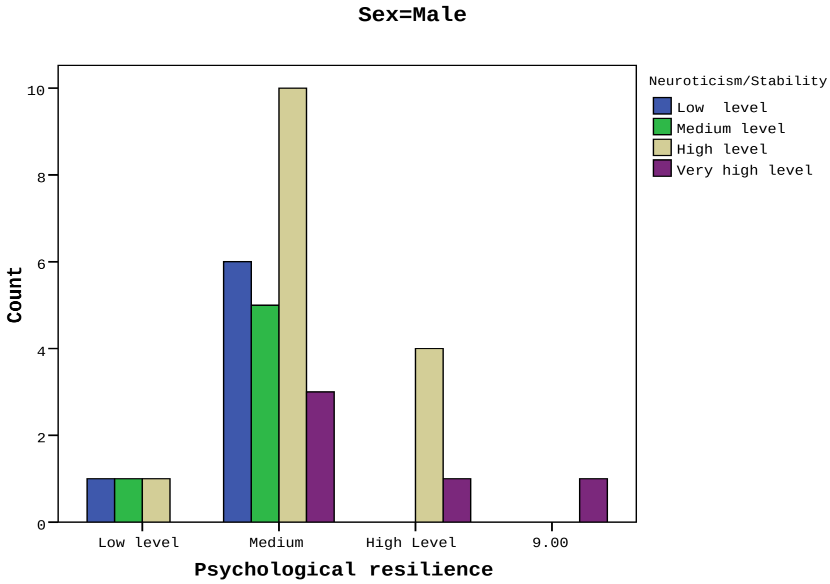

Figure 2 – Psychological resilience among male respondents

Women have been shown to have lower self-confidence, lower self-esteem, and lower self-efficacy compared to men (Costa et al., 2001; Feingold, 1994; Kling et al., 1999; Lynn & Martin, 1997). Pearlin and Schooler (1978) evaluated the efficacy of different psychological resources and active coping responses in mediating four role-based stressors. They find that men are equipped with more psychological resources (e.g., self-esteem and mastery) than women, concluding that in addition to other unmeasured factors, socialization better equips men with effective psychological resources, buffering them from the otherwise deleterious impact of stressors on wellbeing. Interestingly, although previous work demonstrates significant sex differences in psychological wellbeing, there is less evidence that these factors are differentially heritable. Thus, sex may indirectly affect the structure of the genetic etiology of general resilience through the provision of these gendered social psychological resources.

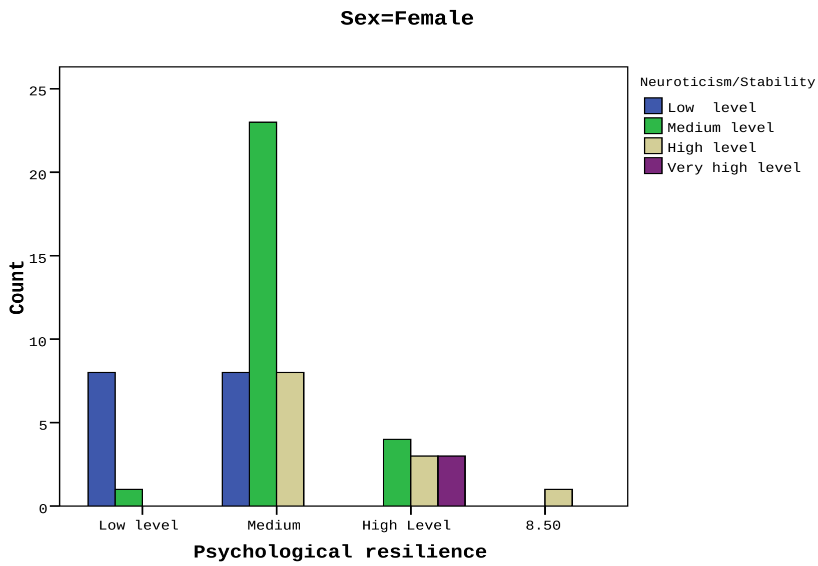

Figure 3 – Psychological resilience among female respondents

Though sex may capture physiological differences, such as hormonal or sex-linked genetic differences, sex also confers different, broadly defined environments for men and women. Our findings are particularly relevant to gene–environment interaction studies because they suggest that sex is an important environmental moderator of latent genetic factors that contribute to salutary mental health.

Resilience in children refers to individuals who are doing better than expected, given a history that includes risk or adverse experience. Once again, it is not a trait or something that some children simply possess. There is no such thing as an 'invulnerable child' that can overcome any obstacle or adversity that he or she encounters in life–and in fact, the trait is quite common. Resilience is the product of a number of developmental processes over time, that has allowed children experience small exposures to adversity or some sort of age appropriate challenges to develop mastery and continue to develop competently. This gives children a sense of personal pride and self-worth.

Research on 'protective factors', which are characteristics of children or situations that particularly help children in the context of risk has helped developmental scientists to understand what matters most for resilient children. Two of these that have emerged repeatedly in studies of resilient children are good cognitive functioning (like cognitive self-regulation and IQ) and positive relationships (especially with competent adults, like parents). Children who have protective factors in their lives tend to do better in some risky contexts when compared to children without protective factors in the same contexts. However, this is not a justification to expose any child to risk. Children do better when not exposed to high levels of risk or adversity.

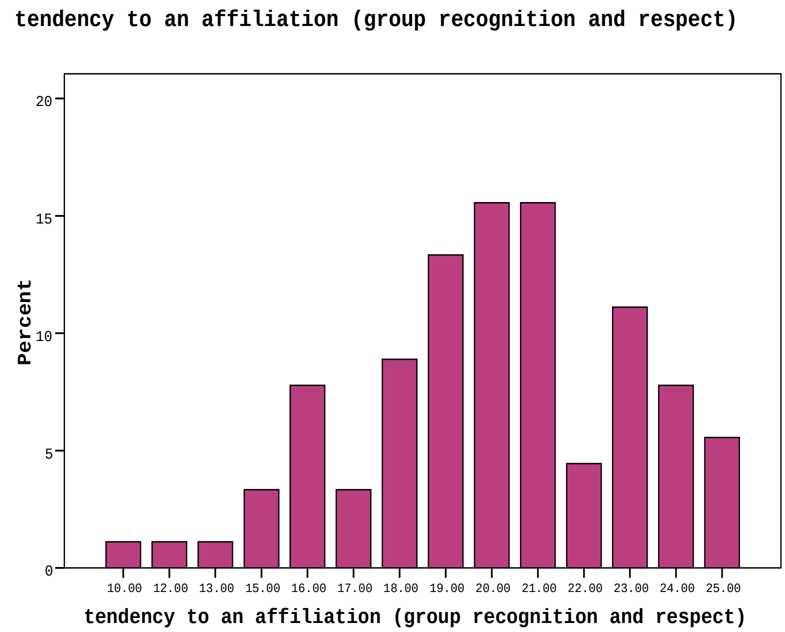

Figure 4 – The normal distribution of group recognition and respect

Technique standardization and group norms definition were carried out on the sample of pupils of 10th and 11th grades; the sample size amounted to 257 senior pupils. The testing of the conformance of the empirical distribution to normal distribution was carried out according to λ -Kolmogorov-Smirnov criterion. It was revealed that the empirical distribution of the results of the survey conducted using the author's method does not differ from a normal distribution, $\lambda = 2{,}061$, $p < 0.05$. This result makes it possible to standardize the methodology and identify group norms.

The scale of high and medium level of psychological stability of personality is standard, the low one shows the variations in the psychological stability of personality.

The results of the test psychometric indicators research presented above allow us to conclude that "Determination of psychological stability of personality" test for senior pupils (V. M. Miniyarov, K. A. Shinyaev) accurately measures the structural components of psychological stability of personality, which underlay the test. The test is valid and reliable.

The empirical study of the psychological stability of high school students who transferred to specialized classes was carried out further (table 4).

Table 4 – The Dynamic of students' resilience

Level of psychological stability of personality (in %)	Control Group		Experimental Group	
	in the beginning of academic year	at the end academic year	in the beginning. academic year	at the end academic year
High	44.4	38.9	62.3	54.7
Average	55.6	61.1	34	35.8
Low	0	0	3.9	9.5

According to Table 4, the high level of psychological stability tends to decrease (44.4% and 38.9%, 62.3% and 54.7%) in both groups by the end of the academic year. However, in the combined student population group this trend is less pronounced. Perhaps this can be explained by the fact that by the end of the academic year students get less interested in learning for various reasons. The students from constant population group are not motivated to achieve good results; they are focused on other values. Even though in the constant population group the motivation to achieve good results is expressed sufficiently by the end of the academic year, they could not withstand the claims filed emotionally because of excessive academic load and fear not to live up to the expectations of parents and teachers. The indicators of the average level of psychological stability in both samples did not significantly change, the low level of psychological stability in the combined class is not represented at all, and in the class, with constant students, low population level of psychological stability increased.

Conclusion. Thus, with the help of empirical data, we managed to confirm the theoretical proposition that psychological and pedagogical factors of psychological stability of personality of senior pupils studying in specialized classes are significantly different from the psychological stability of pupils studying in classes with the regular student population. Even if the psychological stability of students in the class with constant student population at the beginning of the academic year is higher than that of students studying in specialized classes, by the end of the academic year the situation starts changing. In the class with constant student population psychological stability reduces, and in specialized classes, we witness an upward trend.

When facing stressful events during their placement, students with low resilience and high burnout were preoccupied with deficiency (i.e. focusing on the problem), which resulted in an overemphasis of the barriers contributing to the increase in their stress (Larrabee et al, 2010).

A focus on coping enabled high resilience students to manage the demands and limited their cognitive and emotional disturbance. Students with low resilience tended to conform to external demands and sacrifice their needs. The strong social orientation of Chinese people makes it difficult at times for them to abstract themselves from the interpersonal demands of a situation (Gabrenya, & Hwang, 1996 in Bond). However, students who adopted a self-directed orientation in this study were aware of their own limitations and potential, had a sense of responsibility and an active attitude. This contributed to their adaptive coping and high resilience. Self-regulation and self-awareness was another distinguishing characteristic of students with high resilience. When compared with students with low resilience, they used much more self-strategies with the objectives of comforting, sustaining themselves, and most importantly of finding meaning in the experience. When compared with students with high resilience and low burnout, students with high resilience and high burnout used more self-persuasion strategies to buffer the increased cognitive and psychological distress, enable them to face the challenges and sustain their coping. Self-regulation in the form of reframing, conscious choice based on self-directed goals and persistent support by self-efficacy are key elements in adaptive coping with resilience despite adversity (Stephens, 2013). Self-awareness refers to the ability to separate oneself from a situation and reflect (Rees, Breen, Cusack, & Hegney, 2015). Students with high resilience and low burnout were able to detach themselves from the problem. Reflection is the key to enhancing self-awareness and self-knowledge. Challenges, changes, and disruption are all aspects of adversity that should be noted before the process of resilience can occur.

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«ЖОҒАРҒЫ СЫНЫП ОҚУШЫСЫНЫҢ ТҰЛҒА РЕТІНДЕГІ ПСИХОЛОГИЯЛЫҚ ТҰРАҚТЫЛЫҒЫ» ӘДІСТЕМЕСІН ӘЗІРЛЕУ ЖӘНЕ СЫНАЛТЫМ

Аннотация. Мақалада профильді сыныптарға көшіп білімін жалғастыратын жоғарғы сынып оқушыларының көкейкесті психологиялық тұрақтылық проблемасы туралы айтылады, мұндай сыныптарда білім алуды бастаған кезде көпшілігінің қиындыққа душар болатындығы туралы мәселе қойылады, олардың көпшілігінің бұл оқушыларда бастапқыда психологиялық тұрақтылықтың төмендеуіне байланысты болып келеді. Сыныптастарымен, ұстаздармен қарым-қатынас қалыптастыру қажеттілігіне байланысты айқындалатын бейімделудің қиындығы, мектеп бағдарламасының қиындығының жоғары деңгейі көрініс береді. Бұл проблема жоғарғы сынып оқушыларының психологиялық тұрақтылық деңгейлерін анықтайтын термесауалдауыш жасақтауға алып келді. Жұмыс барысында біз термесауалдауыш тұжырымдамасының негізін қалаған бірқатар отандық және шетелдік психологиялық дереккөздерді зерттедік. Бізбен теориялық-методологиялық негіздемелер белгіленді, біз оларға сүйене отырып, сұрақтар құрылымын әзірледік. Сондай-ақ психологиялық тұрақтылықтың жас аспектілеріне қатысты мәселе қызықтырды. Жасөспірім шақтағы психологиялық тұрақтылықтың көрініс беруіне қарамастан, термесауалдауыш олардың психологиялық тұрақтылығына теріс әсер етуі мүмкін жайттардың барлығын анықтауға мүмкіндік берді. Термесауалдауыштың көмегі арқылы психологиялық тұрақтылықтың көрініс беру деңгейлерін анықтауға болады, ол өз кезегінде болашақта мектептің білім беру ортасында психологиялық тұрақтылықты түзету бойынша қажетті шараларды өткізуге мүмкіндік береді. Жоғарғы сынып оқушысының психологиялық тұрақтылық көрінісінің тиянақтылығына білім алудың табыстылығы мен жоғарғы сынып оқушысының тұлға ретінде дамуын айқындайтын мектептің білім беру ортасы әсер етеді. Термесауалдауышты әзірлеу барысында біз «білім беру ортасы» деген ұғымға назар аудардық, психологиялық дереккөздерді, бұл көрініспен байланысты теория мен тұжырымдаманы нақтырақ талдадық. Термесауалдауышты әзірлеу барысында біз жоғарғы сынып оқушысының кәсіби өзін-өзі айқындау проблемасына назар аударып қана қоймай, сонымен қатар оның жеке тұлға ретіндегі дамуына да назар аудардық, соған байланысты термесауалдауышқа өзін өзі бағалауға, ұстаздарымен және сыныптастарымен қарым-қатынас қалыптастыра білуіне, жаңа жағдайларға, біздің жағдайда мектептің білім беру ортасындағы жағдайларға бейімделу процестерінің ерекшеліктерімен байланысты ойпікірлер қалыптастырылды. Оқу жылының басында және аяғындағы жоғарғы сынып оқушысының тұлға ретіндегі психологиялық тұрақтылығының көрініс беру деңгейлерін өлшеп, біз профильді сыныптардағы жаңа жағдайларда білімін жалғастыратын жоғарғы сынып оқушыларының оқу жылының басындағы бейімделуге байланысты қиындықтарға қарамастан, оқу жылының аяғында оларды игере біліп, психологиялық тұрақтылық көрінісінде барынша тиянақты бола білгендігі туралы тұжырымға келдік.

Түйін сөздер: психологиялық тұрақтылық, стресс, өзін-өзі реттеу.

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РАЗРАБОТКА И АПРОБАЦИЯ МЕТОДИКИ «ПСИХОЛОГИЧЕСКАЯ УСТОЙЧИВОСТЬ ЛИЧНОСТИ СТАРШЕКЛАССНИКА»

Аннотация. В статье говорится об актуальной проблеме психологической устойчивости старшеклассников, которые переходят обучаться в профильные классы, ставится вопрос о том, что в начале обучения в подобных классах многие испытывают трудности, большая часть которых связана с тем, что психологическая устойчивость на первых порах у этих школьников понижается. Сказываются сложности адаптации, которые определяются необходимостью выстраивать отношения с одноклассниками, педагогами, высоким уровнем трудности школьной программы. Эта проблема побудила создать опросник, выявляющий уровни психологической устойчивости старшеклассников. В процессе работы мы проанализировали ряд отечественных и зарубежных психологических источников, что легло в основу концепции опросника. Нами были определены теоретико-методологические основания, опираясь на которые мы разработали структуру вопросов. Также нас интересовал вопрос, касающийся возрастных аспектов психологической устойчивости. Опросник позволил прояснить, что, несмотря на стабильность проявления психологической устойчивости в юношеском возрасте, существуют ситуации, которые могут негативно влиять на их психологическую устойчивость. С помощью опросника можно определить уровни проявления психологической устойчивости, с тем, чтобы в последующем проводить необходимые мероприятия по коррекции психологической устойчивости в образовательной среде школы. На стабильность проявления психологической устойчивости старшеклассника влияет образовательная среда школы, которая определяет успешность обучения и личностного развития старшеклассника. В процессе разработки опросника мы обратили внимание на понятие «образовательная среда», подробно проанализировали психологические источники, теории и концепции, связанные с этим явлением. В ходе разработки опросника мы обратили внимание не только на проблему профессионального самоопределения старшеклассника, но и на его личностное развитие, в связи с чем в опросник были заложены суждения, связанные с самооценкой, умением строить отношения с педагогами и одноклассниками, особенностями процесса адаптации к новым условиям, в нашем случае, к условиям образовательной среды школы. Измерив уровни проявления психологической устойчивости старшеклассников в начале и в конце учебного года, мы пришли к выводу, что обучающиеся, оказавшиеся в новых условиях профильного класса, несмотря на то, в начале учебного года испытывали трудности адаптации, в конце учебного года сумели их преодолеть, став более стабильными в проявлении психологической устойчивости.

Ключевые слова: психологическая устойчивость, стресс, саморегуляция.

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COMPARATIVE ANALYSIS OF SOCIAL POTENTIAL OF YOUTH AS A FACTOR OF SOCIAL ENTREPRENEURSHIP DEVELOPMENT IN KAZAKHSTAN AND RUSSIA

Abstract. It's showed in the article the relevant aspects of the development of social entrepreneurship in Kazakhstan and Russia. While writing this article it was used the method of comparative analysis, quantitative methods of sociology, the study of expert opinions. An analysis of relevant aspects of the development of social entrepreneurship in the Republic of Kazakhstan can be indicative of a stable retaining a state monopoly in the public sector. In addition, the development of social entrepreneurship is influenced by a number of negative factors such as corruption, lack of support for initiatives of social entrepreneurs from the community, the gap between the proclaimed and the actual policies in this area.

The article is addressed to scientists, public authorities to study the specifics of the development of social entrepreneurship in the country.

Keywords: social enterprise, non-governmental organizations, state, civil society.

Introduction. The development of social entrepreneurship is one of the most actual problems of our time. A protracted global crisis makes us reconsider old mechanisms and ways of solving social and political problems. Social, and sometimes political, systemic crisis in many countries is accompanied by an identification and ideological crisis in the consciousness of the population. In its turn, the identification crisis adversely affects self-identification, formation and development of social consciousness of young people. In this respect, the identification crisis can be perceived on the one hand as one of the factors of social degradation of youth, and on the other hand it can serve as an impetus for social transformation and development of the social consciousness of youth, its subsequent successful adaptation to the rapidly changing market conditions. In this regard, against the background of the global crisis, social entrepreneurship is perceived by many as a panacea for all ills. To overestimate or underestimate the significance of social entrepreneurship is impossible. For many developed and developing countries, it is a social entrepreneurship that becomes a new opportunity, a search for new mechanisms for solving acute social problems by implementing innovative ideas.

Development degree of the topic. The study and evaluation of the social entrepreneurship development was carried out earlier by researchers in the following areas:

- in the course of consideration of social entrepreneurship as social innovation (N.A.Voskolovich, P.F.Druker, M.S. Zakirova, Robert Alan) [1-3];
- with the problems of the division of social entrepreneurship from business (J.Austin, M.Yunus, J.Boschee, S.Sagawa) [4-7];
- problems of the division of social entrepreneurship from charity (o.a.zakharchenko, m.halme, m.porter) [8-10];
- from the perspective of studying different types of social entrepreneurship (S.E. Zahra, E.Gedajlovic, D.O.Neubaum, K.Alter) [11, 12];
- from the position of studying business models of social entrepreneurship (D.E.Klimanov, R.Amit) [13-15];

- the contribution of the subjects of social entrepreneurship in the form of social capital to the social development of society (d.bornstein, j.thompson, j.nahapiet, s.ghoshal) [16-18].

- effectiveness assessment of intersectoral interaction between the state and the nongovernmental sector and business within the framework of the social entrepreneurship development (Satymbekova K., Ibraimova S., Kerimbek F., Esbolova A., Imanbaeva Z.O., E.M. Shmatkova) [19, 20].

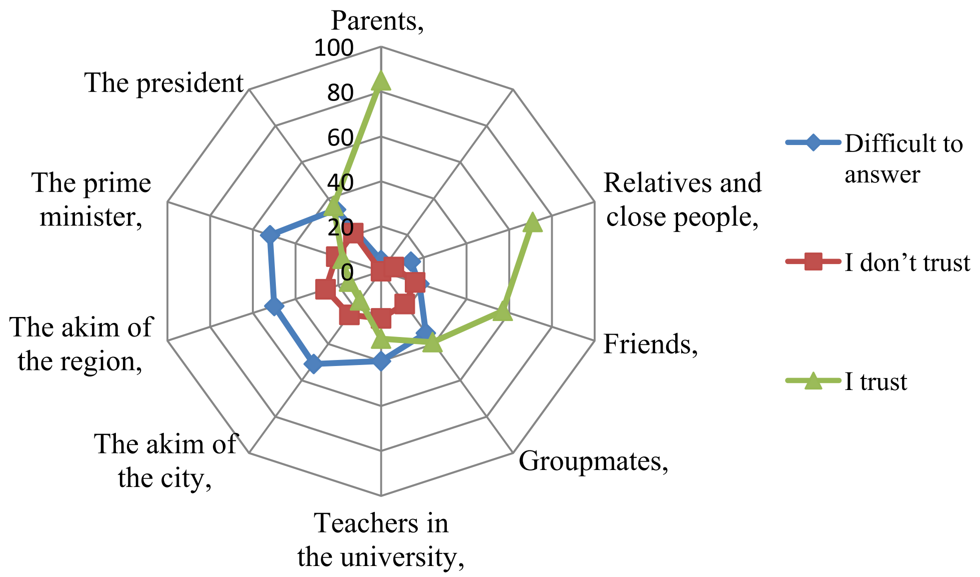
The research methods. Researchers use the following quantitative (questionnaires) and qualitative (focus-groups) methods of sociological research to study the social potential of youth as a factor in the social entrepreneurship development in the country.

In addition, the concept of social capital was used as a type of intersubjective interconnection in society to define the development level of the social potential of youth. In this case, the social relationship should be strong and stable.

The research results. The author of the article conducted a sociological survey of students "Identification of social preferences and social potential of students" in Turkestan to identify social preferences and social potential of youth in November 2017. 91 respondents took part in the survey, including 36 women and 55 men. The sample was random.

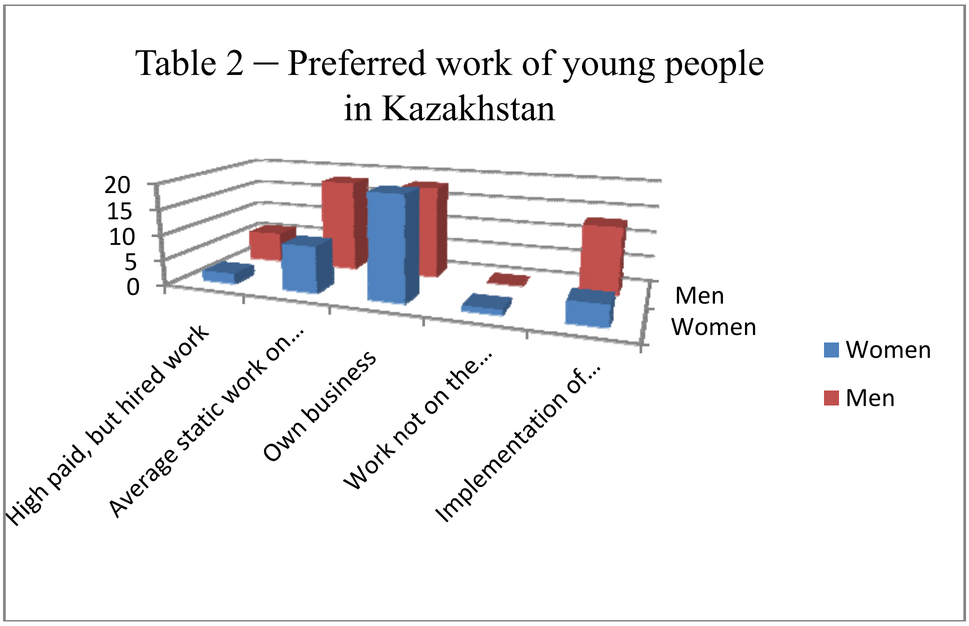
The majority of the respondents evaluated the social situation in the country as favorable (52.7%), tense (35%), crisis (12%). 89% of these respondents would like to improve it.

Table 1 – Levels of Kazakhstan youth trust in



According to the trust ratings, the circle of the greatest trust of young people outlines parents (93%), relatives (78%) and friends (62.6%), the circle of the least trust outlines a rather low level of trust in the subjects of power (from 16.4% to 19.7%), except for the President of the Republic of Kazakhstan (37%). This is quite logical since the closest surrounding is more trusted than the more distant surrounding. At the same time, the most respondents had difficulties to answer (from 0.5% to 54.9%), this group can be more quickly referred to distrustful respondents. In addition, this may indicate the accumulation of significant social capital in the social consciousness of young people in the near surroundings. The availability of social capital can lay a solid foundation for the successful development of social youth entrepreneurship. As is known, one of the main indicators of the availability of social capital is a high level of trust in social actors.

In the value section of the social consciousness of young people, less than a fifth prefer to choose profit (18.6%), in contrast to the majority of the respondents who prefer to maintain their moral principles (81%). The presence of a fifth of the respondents can witness about the youth's ambition and healthy spirit of competition and on the other hand about positive changes in the social consciousness of youth and the formation of adaptive market attitudes and orientations.



When choosing the most preferred work, the respondents' opinions were divided in the following way:

- would have chosen to work not on their specialty, but with the prospect of growth (0.1%),
- high-paid, but hired work (0.8%),
- would carry out socially significant projects, social actions for the poor (18.6%),
- average paid work on the specialty (29.6%),
- would open their business and take up business (41.7%).

An analysis of the respondents' opinions may indicate the presence of two different blocks among respondents:

- ordinary people making up a third of the respondents strive to get and keep not high but real income, without investing their own means and resources (30.5%),
- potential entrepreneurs with creative innovative potential, searching for new mechanisms, methods of solving both market and social problems (60.3%).

An analysis of the respondents' opinions may indicate relevant transformational changes in the social consciousness of young people, the existence of a significant proportion of respondents who may become successful entrepreneurs in the futurein the creation of favorable conditions.

The majority of the respondents are already ready to start entrepreneurship in the social sphere (87.9%). At the same time,60.4% of the respondents have a certain experience of participation in the implementation of socially significant projects and social actions (charity, assistance to the poor). It is possible to mention the charitable action Enactus "Hold your hand" held in March-April 2017 in Akhmet Yassawi International Kazakh-Turkish University as an example of a socially significant action. 41 teachers and students participated in the organization and implementation of the project, which became a part of the voluntary movement of Kazakhstan. A charitable aid was collected for 20 needy families or 83 members of these families. The project budget was 190 thousand tenge, of which 47 thousand tenge was earned by the organizers in the course of entrepreneurial activity (sale of company badges, logos). This may indicate that a quarter of the budget of this social action was collecteddue to the socio-entrepreneurial activity of the students and university staff.

These tendencies can also witness that positive changes of value orientations and attitudes are already being observed in the consciousness of the most liberal and progressive part of the population (student youth). In its turn, the respondents expressed the following readiness to engage in social activities: never (0.5%), sometimes (40.6%), often (23%), constantly (25%). The opinions of the respondents outweigh the need for a permanent holding of social actions (48%). According to the respondents (87.9%), this is one of the most common and effective methods of combating poverty. In the opinion of the respondents, only the twentieth of the population in the South-Kazakhstan region (5.3%) lives below the poverty line. According to the respondents, the social situation in the country may worsen in the near future (0.3%), will not change (19.7%), will improve (76.9%). This facts hows the respondents' favorable forecasts.

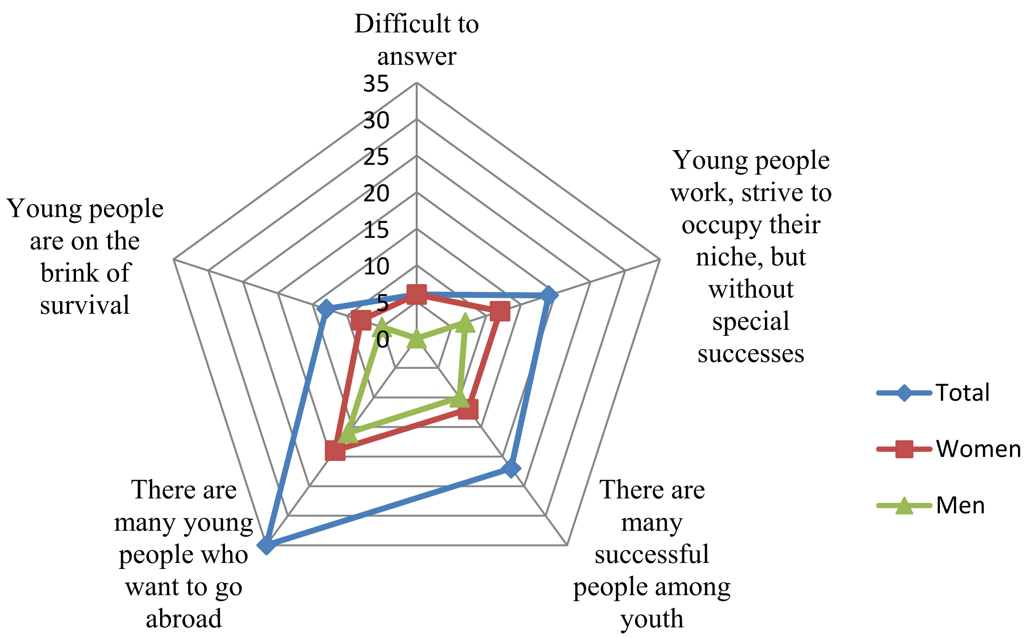
According to the students' opinion, the success factors of a social entrepreneur are:

- an ability to solve an acute social problem (0.8%),
- an aspiration to create social innovation (10.9%),
- propensity to charity (29.6%),
- his active life position (47.2%).

According to the respondents, the last two factors may well become the key to the success of a social entrepreneur in the future. Also, according to students, being a social entrepreneur means having a different outlook on life. The majority of the respondents (65.9%) consider themselves successful, the rest are in search of ways and methods for achieving success.

According to the typology of social entrepreneurship organizations of researcher K. Altera, successful entrepreneurship organizations in the social consciousness of students are associated with traditional notions of socially responsible business, commercial enterprises carrying out periodic social actions for the population or their employees [21, 22]. Kazakhstan's youth are unaware of the spectrum of other types of social entrepreneurship which are wide spread in the developed western countries. First of all, it concerns different social types of non-commercial sector organizations. On the other hand, this may evidence an understanding and awareness of the differences between social entrepreneurship and small, medium-sized businesses.

Table 3 – Which statement do you agree with?



Among the future prospects of young people, the respondents tend to identify both positive and negative tendencies. Among the positive, the following can be mentioned: among young people there are many successful people (24%), young people work, but unsuccessfully (20%), struggle for survival (14%), and among the negative: young people who want to go abroad (38%). Among the tendencies, there are more negative ones than positive. This can only evidence the instability of the youth situation in society and possible destabilization.

Among the problems hindering the success of young people, the respondents highlight the followings: lack of start-up capital (41%), low level of financial literacy (29%), lack of entrepreneurial experience (28%).

Table 4 – Development prospects for the youth
in the Republic of Kazakhstan

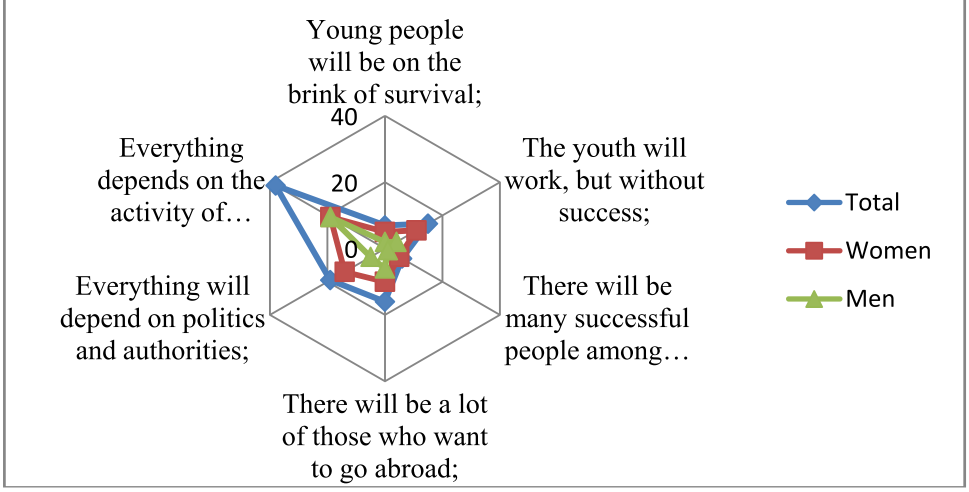
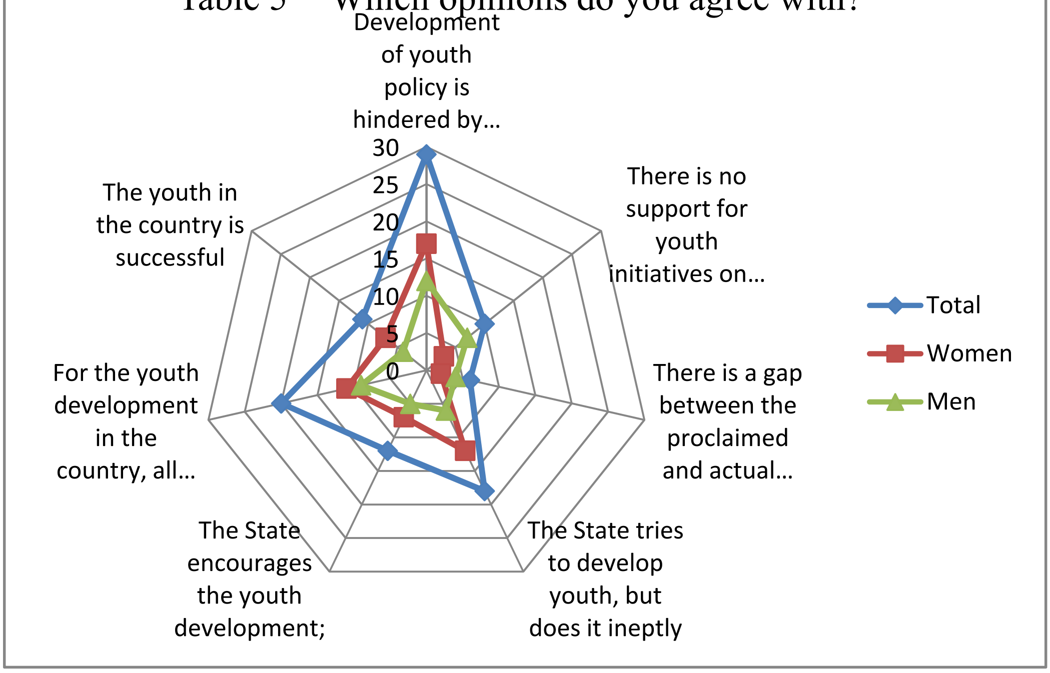


Table 5 – Which opinions do you agree with?



Among the difficulties to success are only objective (lack of start-up capital) and subjective factors. This shows that young people recognize their shortcomings. In its turn, the respondents recognize their need for experience exchange (34%), training in business basics (23%), training in fundraising (21.9%) and getting consultations (17.5%).

A similar sociological survey was conducted in Nizhnekamsk, Tatarstan. 132 respondents were interviewed, 68 of them are women and 64 are men. The sample was random. Similar tendencies are observed in the respondents' outline of trust circles in Nizhnekamsk. According to the trust ratings, the circle of the greatest trust of young people outlines parents (98%), relatives (92%) and friends (80%), the circle of the least trust outlines a rather low level of trust in the subjects of power (from 6% to 16%), except for the President of the Russian Federation (36%).

More than a third (36%) trusts the President of the Russian Federation V.Putin, in comparison with the same percentage of the respondents (34.8%) who are not inclined to trust the President of the Russian

Federation. In its turn, only 6% of the respondents are inclined to trust R.N.Minnikhanov, the President of the Republic of Tatarstan, in comparison with half of those polled (50%) who are not inclined to trust the President of the Republic of Tatarstan. This may possibly indicate a low level of people's trust in the heads of regions, governors, mayors of cities.

In the value section of the social consciousness of young people, less than a fifth of them prefer to choose profit (43.9%), in contrast to the majority of the respondents who prefer to maintain their moral principles (56%). The presence of slightly less than half of respondents who prefer profits can indicate the youth's awareness of the crisis situation in the social and economic sphere. Perhaps, the crisis in the socio-economic sphere in the Russian regions is more profound than in Kazakhstan. In the social consciousness of youth, one of the adaptation mechanisms is the installation of self-survival.

The respondents'choice of the most preferred work can namely evidence about this fact:

- would have chosen to work not on their specialty, but with the prospect of growth (19%),
- high-paid, but hired work (18%),
- would carry out socially significant projects, social actions for the poor (0%),
- average paid work on the specialty (12%),
- would open their business and take up business (50%).

Respondents' answers may indicate real understanding, respondents' perception of the crisis situation in the Russian outback, youth awareness and understanding of the needs of the market and market economy. The only way out of this can be only a steady and stable income capable of generating income.

An analysis of the respondents' opinions shows the presence of two different blocks among the respondents in the same ratio as in Kazakhstan: ordinary people (30%), potential entrepreneurs (60.7%).

According to the respondents, the social situation in Russia in the short term may worsen (33%), it will not change (46.9%), improve (19.6%). This may indicate unfavorable forecasts of the respondents.

Russian respondents relate the crisis exit with the youth activity (24%), government policy (18%), emigration of young people abroad (31.8%), constant but unsuccessful work of youth (25%), and struggle for survival (15%), the emergence of successful youth (7.5%). Among the further perspectives, Russian youth highlight only survival and emigration for themselves; this may indicate a preponderance of negative prospects over positive ones. Among the negative factors, the respondents are inclined to indicate corruption (39%), ineffectively conducted youth policy (34%), the gap between the proclaimed and actual youth policy (13%) and the lack of conditions for the youth development (6%). This may witness that the Russian respondents no longer expect support from the state and rely only on themselves.

The discussion results. The results of the sociological research witness about transformational changes in the social consciousness of young people, the development of adaptation mechanisms to the rapidly changing conditions of the modern market. Thus, as a result of the survey, two groups of the respondents were identified:

- ordinary inhabitants (30.5%),
- potential entrepreneurs (60.3%).

These two groups were identified as a result of the analysis of the attitude of young people to socially significant projects, motivation and possibility to carry out entrepreneurial activities in the future, assessment of the social potential of young people in their determination to engage in social entrepreneurship.

If the study of the phenomenon of social entrepreneurship was previously carried out within the framework of theoretical studies, consideration of the experience of the social entrepreneurship development in developed foreign countries with a view to apply best practices in Kazakhstan and the post-Soviet space [22], as well as developing business models of social entrepreneurship [23], then this study focuses on the impact of young people's attitudes on the future development of social entrepreneurship in the country through developing social entrepreneurship initiative and culture in the social consciousness of youth.

Conclusions. The state monopoly, which still exists in the social sphere, contributes to the preservation and ensures the stability of the unifying consolidation of the Kazakhstani society that was left as a legacy from the Soviet period. At the same time, unifying consolidation can not promote the social entrepreneurship development in Kazakhstan, the emergence of social and innovative ideas in the social consciousness of young people. In its turn, liberalization and democratization, the renewal of Kazakhstan's society, the transition to democratic consolidation can contribute to the inculcation of Western culture values, the development of free trade, market mechanisms and the creation of a competitive environment [24, 203].

As the results of the sociological survey show, the identification of two groups of respondents (ordinary inhabitants and potential entrepreneurs) may indicate a gradual transition from unifying consolidation to democratic consolidation, as well as the accumulation of established social capital that can lay a solid foundation for unifying consolidation of the Kazakhstan society.

In our opinion, unlike Kazakhstan, the social entrepreneurship development in the center and on the periphery of Russia goes in different directions. In the center, the activation of liberal modernization contributes to the development of a highly competitive environment for both the business sector and the third sector. This may indicate the success of Westernization, the successful assimilation of the social values and orientations of Western liberal culture by the social consciousness of the population. On the periphery, the situation was diametrically opposite. The traditional culture of the periphery population does not support actively liberal modernization, perhaps the main obstacles are stable stereotypes in the social consciousness of the population, there fore conservative modernization prevails over liberal modernization on the periphery though the values of liberal culture attract by their novelty.

In Kazakhstan, the social potential of young people is higher than in Russia, which can be evidenced by a higher level of trust both within the Kazakh society and the youth's trust in the subjects of power. A higher level of social potential of young people in Kazakhstan compared to Russia can become a solid basis for a more successful development of social entrepreneurship in Kazakhstan.

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СРАВНИТЕЛЬНЫЙ АНАЛИЗ СОЦИАЛЬНОГО ПОТЕНЦИАЛА МОЛОДЕЖИ КАК ФАКТОР РАЗВИТИЯ СОЦИАЛЬНОГО ПРЕДПРИНИМАТЕЛЬСТВА В КАЗАХСТАНЕ И РОССИИ

Аннотация. В статье показан социальный потенциал молодежи как фактора развития социального предпринимательства в Казахстане и России. При написании статьи были использованы метод компарактивистского анализа, методы количественной социологии, изучение экспертных мнений.

Сравнительный анализ социального потенциала молодежи как фактора развития социального предпринимательства в РК и РФ может свидетельствовать о более высоком уровне социального потенциала молодежи в РК по сравнению с РФ. Кроме того, на развитие социального предпринимательства оказывают влияние ряд негативных факторов, таких как коррупция, отсутствие поддержки инициатив социальных предпринимателей со стороны общества, разрыв между провозглашаемой и фактической молодежной политикой в данном направлении.

Статья адресована научным работникам, государственным органам для изучения специфики развития социального предпринимательства в республике.

Ключевые слова: социальное предпринимательство, неправительственные организации, государство, гражданское общество

А. М. Нысанбаева, Г. Носаненко

ҚАЗАҚСТАНДА ЖӘНЕ РЕСЕЙДЕГІ ЖАСТАРДЫҢ ӘЛЕУМЕТТІК ӘЛЕУЕТІНІҢ САЛЫСТЫРМАЛЫ ТАЛДАУЫ ӘЛЕУМЕТТІК КӘСІПКЕРЛІКТІ ДАМЫТУ ФАКТОРЫ РЕТІНДЕ

Аннотация. Мақалада жастардың әлеуметтік әлеуеті Қазақстанда және Ресейдегі әлеуметтік кәсіпкерлікті дамыту мәселелері қарастырылған. Мақаланы жазу барысында компарактивистік талдау әдісі, сандық әлеуметтанудың әдістері, эксперттік сұраулардың талдауы қолданылды.

Жастардың әлеуметтік әлеуеті ҚР-да мен РФ-да әлеуметтік кәсіпкерлікті дамыту факторы ретінде салыстырмалы талдауы Қазақстанда Ресейге қарағанда жастардың әлеуметтік әлеуетінің деңгейі әлде қайда жоғары екенін көрсетеді. Сонымен қатар, әлеуметтік кәсіпкерлікті дамуына сыбайлас жемқорлық, әлеуметтік кәсіпкерлердің бастамаларын қоғам тарапынан қолдауының болмауы, осы бағыттағы жарияланған және нақты саясаттың арасындағы алшақтық сияқты бірнеше негативті факторлар әсер етеді.

Мақала республикадағы әлеуметтік кәсіпкерлікті дамыту ерекшеліктерін зерттеу үшін ғылыми қызметкерлер мен мемлекеттік органдарға арналған.

Түйін сөздер: әлеуметтік кәсіпкерлік, үкіметтік емес ұйымдар, мемлекет, азаматтық қоғам.

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LEGAL POSITIONS OF THE CONSTITUTIONAL COURT OF THE RUSSIAN FEDERATION IN RUSSIAN LEGAL SYSTEM

Abstract. Analyzed the relationship of the Constitution of the Russian Federation and the legal positions of the Constitutional Court of the Russian Federation, as sources of law, their place in legal system.

The content of the institutes of the theory of law (Constitution, constitutionalism, legal position, source of law, judicial precedent), provisions of the Constitution of the Russian Federation, acts of the Constitutional Court of the Russian Federation, Russian legislation and the works of legal scientists using the method of comparison and synthesis are studied.

The idea that judgements of the Constitutional Court of the Russian Federation are sources of law has been criticized. An example is given of when the Constitutional Court of the Russian Federation has gone beyond the interpretation of the Constitution of the Russian Federation, creating a new legal norm.

It is concluded that the legal positions of constitutional courts as sources of law can exist without the Constitution. It is noted that the legal positions of constitutional courts is a place in which where opinions of scientists becomes obligatory.

As evidence the Constitution of the Russian Federation and the legal positions of the Constitutional Court of the Russian Federation represent an inseparable unity, it is pointed out legal positions of the Court also have certain features of the Constitution as a source of law, which allows to consider them together with the Basic Law as a single source of law.

Keywords: constitution, constitutionalism, the Constitution of the Russian Federation, constitutional courts, the Constitutional Court of the Russian Federation, legal position, legal position of the Constitutional Court of the Russian Federation, source of law, judicial precedent, legal norm.

Introduction. Appearance in the 1990s of constitutional justice bodies in Russia gave the new strength to discussions on the recognition of acts of courts as sources of law. For such recognition, these acts should have the appropriate features, such as certainty, general obligation, common knowledge, and internal structuring.

Methods. The content of the constructs of the theory of law (Constitution, constitutionalism, legal position, source of law, judicial precedent), provisions of the Constitution of the Russian Federation, acts of the Constitutional Court of the Russian Federation, Russian legislation and the works of legal scientists using the method of comparison and synthesis are studied.

Results. Discussion on the role of court decisions, including interpreting the Constitution, is conducted not only in Russia. Abroad traditionally the law is viewed as an institutional normative order in which a separation is made between those who create rules of law (the legislator) and those who apply the rules of law (the courts) [1]. However, it is being noted that the text of the Constitution is important but that precedent also matters in interpreting the Constitution – and on specific points of law [2].

Turning to the Russian discussion on this issue, it should be said that the following evidences are presented as arguments in favor of recognizing acts of constitutional (statutory) courts as sources of law.

Decisions of the Constitutional Court of the Russian Federation on the recognition of the legal status as unconstitutional quite fall within the formal definition of a regulatory legal act and were included in the number of these acts in the draft of the Federal law "On regulatory legal acts of the Russian Federation"; the term "quasi-norms" applies to the legal positions of the court, its decisions fulfill the law-making function and establish rules that actually govern the relations in society [3].

Acts of the Constitutional Court of the Russian Federation have state obligation, have a volitional nature, a strictly defined form of expression, are issued by the body of constitutional control within its competence, contain explanations of the law, as well as provisions designed to eliminate gaps in the law, and are addressed to a wide range of subjects, their role and value are not limited to one-time execution [4].

Decisions of constitutional (statutory) courts, being a special kind of sources of constitutional law of Russia, combine the properties of various sources of law and cannot be fully attributed to any of them; contain legal regulations, being at the same time individual legal acts [5].

Abroad, especially, in the USA there are other approaches, for example, J. Harrison considers, that the norms of precedent as the federal courts consist mainly of unwritten principles that are characterized as binding law but that reflect substantial judicial input, custom, and practice. Those are the hallmarks of general law [6].

Not putting in question the arguments described above, we note that scholars who recognize the decision of the constitutional court as a source of law do not take into account that it is a judicial decision, to which, in terms of design, there are special requirements. For example, according to art. 75 of the Law "On the Constitutional Court of the Russian Federation" [7] in the decision set out as a separate document, depending on the nature of the issue under consideration, contains: the name of the decision, the date and place of its adoption; the personal composition of the Court, which made the decision; necessary data about the parties; the wording of the question, the reasons and grounds for its consideration, and others.

In this regard, there are questions: whether all of the above mentioned in art. 75 of the denoted Law can be called legal norms? Is it permissible to regard as a normative part that part of the decision of the constitutional court where the positions of the applicants are disclosed? Should the source of law be the entire decision of the constitutional court as a document or only the wording of the decision?

Analysis of the structure of the decisions of the Constitutional Court of the Russian Federation allows to conclude that only legal positions expressed by it both in the formulation of the decision and outside it can have a normative character.

According to N.V. Vitruk, in legal science, the issue of the notion "legal positions of constitutional (statutory) courts" did not receive a sufficient theoretical substantiation and it is perceived more likely on an intuitive level [8]. The scientist considers legal positions as legal conclusions and representations of the court – the result of interpretation (interpretation) by the court of the spirit and letter of the Constitution and interpretation of the constitutional meaning of the provisions of regulatory acts within its competences, which remove uncertainty and serve as the legal basis for the final acts of the court [9].

From the point of view of G.A. Gadzhiev, the legal position of the court is only a fragment of the motivation part of the final decision of this body, which is connected with the final conclusions of the Court, and represents a legal understanding of the constitutional norm, common to the statutory majority of judges, by its nature close to ratio decidendi, meaning in English case law the essence of decision, the decisive argument [10]. According to L.V. Lazarev, the legal position is a system of legal arguments expressing the legal consciousness of the constitutional principle, norm and proper constitutional content of the contested legal provision [11].

V.O. Luchin, O.N. Doronina and M.G. Moisenko regard that the legal position of the court is not only the final conclusion on the compliance or non-compliance of the norms of the considered law with the Constitution, but also a system of arguments driven by this body in support of the decision [12].

These scholars note that the legal positions of constitutional courts have many features inherent in the sources of law. The most significant is that they reflect the political will, because they arise as an act of constitutional law of a state proxy to express this will in the form and parameters prescribed by law; have an obligatory character and possess the quality of a regulator of public relations certain type; they also possess specific internal properties, since they serve as a regulatory framework in the legal system, and also serve as a guide in law-making and law enforcement [13].

B.A. Strashun divides legal positions into non-norms and containing constitutional norms. He refers to the first category those positions that constitute the interpretation of the Constitution and are contained in the motivation part of the decisions of the Constitutional Court of the Russian Federation, to the second - the legal positions expressed in court decisions on the official interpretation of the Constitution and on the resolution of competence disputes [14].

According to B.S. Ebzeev, decisions of the Constitutional Court of the Russian Federation act as a way of overcoming uncertainty in understanding the provisions of the Constitution, clarifying its objective meaning and identifying the positive legal principles contained in it; therewith, the court is deprived of discretion in the sense that the limits of such discretion are conditioned by the obligation to maintain the Constitution and the inadmissibility of its violation or amendment, except for the silent "transformation" of the Constitution stated by the court, i.e. its adaptation to the objective realities of social development [15].

I.S. Basten considers legal positions as part of the decision of the constitutional justice body, which contains a special type of normalization, serving as a model for resolving issues that arise in the future, in which the conclusions made by the judges of the constitutional (statutory) courts when considering a particular case are supported by certain reasons [5].

Discussion. Some scientists believe that the courts can only interpret the law without creating new legal norms. It is impossible to agree with this statement for the following reasons.

Firstly, in practice, the line between the interpretation of the law and the creation of a new legal norm is very thin. In theory, the interpretation should only clarify the meaning of the norm, but this is not always the case because of the imperfection of the legislation. As an example of the creation of a new legal norm by the Constitutional Court of the Russian Federation, the decision [16] is usually given, in which the Court actually established a new, not stipulated by the Basic Law, version of the regulatory legal act - the Law of the Russian Federation on the Amendment of the Constitution of the Russian Federation.

According to E. Feterisin modern view, the judge is no longer considered as the «mouth of the law» who automatically deduces the decision from the general rule, but he establishes the meaning of the legal rule in the context of the specific case. In this conception, legal rules do not have a context-independent meaning, but the judge must decide in the individual case what the exact meaning of the legal rule is [17]. There is another point of view, for example, N. Katyalargues that Congress, not the Court, is often best situated to make the judgments necessary to create the Constitution of relevance to Americans today [18].

Secondly, legal positions of courts, which usually cite as examples of "judicial precedents" in Russian legal science, as a rule, cannot exist without a corresponding regulatory legal act, explaining its meaning, filling legal lacuna or correcting the content. In the event that the content of act is changed or it is repealed, decision of the judicial authority revokes its force. It should also be noted that the content of normative act, considered without taking into account decisions of judicial authorities, will be inaccurate and incomplete.

For example, in art. 1 of the Constitution of the Russian Federation, it is established that the Russian Federation is a democratic state. This provision is the norm-definition, and its content can be disclosed through an explanation of what is democracy. There are various approaches to the theory of democracy in different states: for example, direct democracy is more diffused in Switzerland and referendums are often held, and in the USA plebiscites are assigned less because they are believed to undermine the authority of the legislative power established in the Constitution.

In some appeals to the Constitutional Court of the Russian Federation, the applicants refer to the fact that, in accordance with the Constitution, Russia is a democratic state, but participants in constitutional legal proceedings often have an understanding of the meaning of democracy. Therefore, the Constitutional Court of the Russian Federation is forced in its decisions to disclose the requirements for legal regulation in a democratic state and indicated the following:

– maintaining the principle of keeping citizens' confidence in the law and actions of the state, which presupposes the preservation of reasonable stability of legal regulation and the inadmissibility of making arbitrary changes to the existing system of norms, as well as providing citizens with the opportunity, if necessary, in particular by establishing temporary regulation, during a reasonable transitional period to adapt to changes [19];

– compliance with the requirement of justice when applying responsibility for violation [20];

– formation of local government bodies through free elections [21];

– proper enforcing obligations made directly to the public [22].

In the Constitution of the Russian Federation and the laws, there are no norms to establish responsibilities of legislators to involve into law the legal positions created by the Court outside of a operative part of decision. In science, there is a discussion about the degree of their commitment [8, 23]. But in any case, the legislator understands that if it ignores legal positions, then there is a high probability that the relevant legal acts will be repealed by the Court.

It should also be noted that the legal positions of constitutional courts are the place where opinions of scientists becomes obligatory. For example, the Constitutional Court of the Russian Federation established application of legal principles is mandatory [24].

In conclusion, it should be noted the Constitution of the Russian Federation and legal positions of the Constitutional Court of the Russian Federation are an inseparable unity. Evidence of this is that legal positions have the hallmarks of the Constitution (consolidation the main principles of the social and state system; the source of the law of all branches of Russian law), which allows considering them together with the Basic Law as a single source of law.

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РЕСЕЙ ҚҰҚЫҚТЫҚ ЖҮЙЕСІНДЕГІ РЕСЕЙ КОНСТИТУЦИЯЛЫҚ СОТЫНЫҢ ҚҰҚЫҚТЫҚ ҰСТАНЫМДАРЫ

Аннотация. Зерттеудің мақсаты – РФ Конституциясы мен Ресей Конституциялық Сотының құқықтық ұстанымдарының құқықтық жүйедегі құқық көздері ретінде арақатынасын талдау болып табылады.

Салыстыру және синтез әдісін қолдана отырып, құқық теориясының конструкторларының мазмұны (конституция, конституционализм, құқықтық ұстаным, құқық көзі, сот прецеденті), РФ Конституциясының ережелері, РФ Конституциялық Сотының актілері, Ресей заңнамасы және ғалым-заңгерлердің еңбектері зерттелді.

РФ Конституциялық сотының шешімдері құқық көзі болып табылатындығы туралы идея сынға алынды. РФ Конституциялық соты РФ Конституциясын түсіндіру шегінен шығып, жаңа құқықтық норманы жасап шыққан мысал келтірілген.

Конституциялық соттардың құқықтық ұстанымдары құқық көзі ретінде Конституциясыз өмір сүре алмайды деген қорытынды жасалды. Конституциялық соттардың құқықтық ұстанымдары – бұл құқық және мемлекет теориясының, конституциялық құқық ғылымының жекелеген ережелері нормативтік, жалпыға міндетті сипатқа ие болатын орын деп көрсетіледі.

РФ Конституциясы мен Ресей Конституциялық Сотының құқықтық ұстанымдары ажырамайтын бірлікті білдіреді деген дәлел ретінде, Конституцияның жекелеген белгілеріне құқық көзі ретінде Конституциялық Соттың құқықтық ұстанымдары да ие екендігі көрсетіледі, бұл оларды негізгі заңмен бірге құқықтың бірыңғай көзі ретінде қарастыруға мүмкіндік береді.

Түйін сөздер: конституция, конституционализм, Ресей Конституциясы, конституциялық соттар, Ресейдің конституциялық соты, құқықтық ұстаным, РФ Конституциялық Сотының құқықтық ұстанымы, құқық көзі, сот прецеденті, құқықтық норма.

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ПРАВОВЫЕ ПОЗИЦИИ КОНСТИТУЦИОННОГО СУДА РОССИЙСКОЙ ФЕДЕРАЦИИ В РОССИЙСКОЙ ПРАВОВОЙ СИСТЕМЕ

Аннотация. Целью исследования является анализ соотношения Конституции РФ и правовых позиций Конституционного Суда России, как источников права, их места в правовой системе.

С применением метода сравнения и синтеза изучены институты теории права (конституция, конституционализм, правовая позиция, источник права, судебный прецедент), положений Конституции РФ, актов Конституционного Суда РФ, российского законодательства и трудов ученых-юристов.

Подвергнута критике идея о том, что решения Конституционного Суда РФ являются источниками права. Приведен пример, когда Конституционный Суд РФ вышел за пределы толкования Конституции РФ, создав новую правовую норму.

Сделан вывод, что правовые позиции конституционных судов как источники права не могут существовать без Конституции. Отмечается, что правовые позиции конституционных судов – это место, в котором отдельные положения теории права и государства, науки конституционного права приобретают нормативный, общеобязательный характер.

В качестве доказательства того, что Конституция РФ и правовые позиции Конституционного Суда России представляют неразрывное единство, указывается на то, что отдельными признаками Конституции как источника права обладают и правовые позиции Конституционного Суда, что позволяет рассматривать их вместе с Основным законом как единый источник права.

Ключевые слова: конституция, конституционализм, Конституция России, конституционные суды, Конституционный Суд России, правовая позиция, правовая позиция Конституционного Суда РФ, источник права, судебный прецедент, правовая норма.

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THE MAIN ASPECTS OF THE DEVELOPMENT OF FOREIGN ECONOMIC ACTIVITY IN THE ERA OF GLOBALIZATION

Abstract. The article deals with the issues of the state's inclusion in the global economic processes, which have become a necessary condition for the national development of each country seeking for the efficiency and competitiveness of its economy. The importance of the position of the Republic of Kazakhstan and the regions as full subjects of international economic relations (IEA), describes the economic relations with many developed and developing countries, expanding the range of partner countries. The article deals with the main factors of development of foreign Economic relations and their impact on the regional economy. The main stages of fruitful state policy in the field of foreign Economic activity (FEA) are characterized, and the basic structure of FEA of the Republic of Kazakhstan is described. There is a deepening of trade and economic relations with them, moving towards integration into the world market.

Key words: globalization, economic processes, foreign economic activity, economic relations.

Introduction. President N. A. Nazarbayev, in the strategy "Kazakhstan-2050: a new political course of the established state" and in his annual address to the people "NURLY ZHOL – the WAY to the FUTURE", noted: "The global system of the world economy is a well-established mechanism that works according to its own rules [1]. According to these rules, we must work. We are not expected in the world markets, but we need to become popular and gain a foothold in them." To do this, it is necessary to create an innovation-oriented national economy, the level of openness of which should promote the attraction of new industrial and information technologies, the development of the export potential of the country and the provision of personnel trained at the level of international standards, etc. [2]. This is possible only if we conduct our foreign economic activity (FEA) efficiently, especially in the context of globalization. The relevance of foreign economic processes that contribute to the sustainability of the national economy (NE) significantly increased in the global economic crisis [3].

Methodology. General methods of research of the study were used In the process: methods of analysis of financial statements: horizontal, vertical, ratio, comparison, and other.

The following methods were used to study the foreign economic activity of the Republic of Kazakhstan and its regions:

- review of the regulatory framework;
- analytical method;
- studying of foreign experience;
- the possibility of application of instruments of state - private partnership;
- collection and processing of statistics;
- economic-mathematical calculations.

Results. Commercial activity in the foreign market, in comparison with similar activity in the country, is characterized by many features which are defined by the General features of the international commercial activity, inherent to the majority of the foreign markets [4].

Forms of foreign trade in the Republic of Kazakhstan

Form	Content
Foreign trade	Export and import of goods in material form. Commodity exchange operations. The provision of various services. Execution of works in cooperation with foreign contractors, etc.
Military-technical cooperation (MTC)	In the law of the Republic of Kazakhstan "on military-technical cooperation", dated December 24, 2013, the MTC is defined as " activities in the field of international relations related to export, including the supply or purchase of military products, as well as the development and production of military products"[7].
Scientific-technical and scientific-production cooperation	Production cooperation. Joint venture. R&D performance. Providing high-tech services (including space services for launching satellites of foreign production into orbit, selling aerial photographs of their territory taken from Russian satellites with high-precision equipment to foreign countries, creating new materials under zero-gravity conditions). Trade in licenses, patents, registration of trademarks.
Construction and design services	Construction of facilities abroad with the assistance of Kazakh organizations and vice-versa. Design and survey work. Modernization and reconstruction of previously constructed facilities. Provision of engineering consulting services (engineering), etc.
Investment cooperation with foreign partners	Attracting foreign investment to our economy and investing abroad.
Cooperation in the monetary, financial and credit sphere	Obtaining and granting of credits, financing of various projects, payment and insurance operations [8].
Leasing	Leasing of various machine-building products, vehicles by Kazakh landlords and other objects to foreign tenants. Kazakh participants of foreign trade activities of technical and other products rent from foreign lessors, including on conditions of financial leasing [9].
Cooperation on a compensatory basis	Simple and complex compensation transactions, processing of raw materials (tolling) and other types of counter trade.
Cooperation in the field of transport	International transportation of export and import cargo. Transit transportation of foreign goods. Transport-forwarding services.
Cooperation in the field of communications and computer science with the use of modern electronic media.	TV. Broadcasting. Newspaper and magazine production. Documentary and cinematographic production.
Social and cultural services	Retailer. Catering. Hotel industry. Education. Health. Physical education and sport. Trade in copyright, etc.
Publishing and polygraphic activity.	Joint writing of scientific works of historical, philosophical, economic, sociological and other fields. Joint writing of General education and popular books. Publication of articles and books by Kazakhstan authors in foreign publishing houses. Publication of articles and books by foreign authors in the Republic of Kazakhstan [10].
Foreign tourism	Export and import of tourist services. The export of tourist services ensures the receipt of income from the stay of foreign tourists in our country, and imports entail expenses for the departure of tourists from Kazakhstan and their stay in foreign countries.
Foreign trade marketing	It is used for promotion of the Kazakhstan production to the foreign markets and realization of foreign production in the territory of our country.
Coastal and border trade	They are of great importance for many regions and subjects in the Republic of Kazakhstan and abroad.

Source: compiled by the author.

World practice knows more than twenty main forms of economic cooperation, which can be combined into five groups: 1) trade, 2) industrial, 3) scientific and technical, 4) financial and 5) cultural. Each form has its own economic and organizational features, the skillful use of which can guarantee the greatest impact in specific situations [5].

The most common forms of foreign trade in the Republic of Kazakhstan, with their brief characteristics, are shown in the table [6].

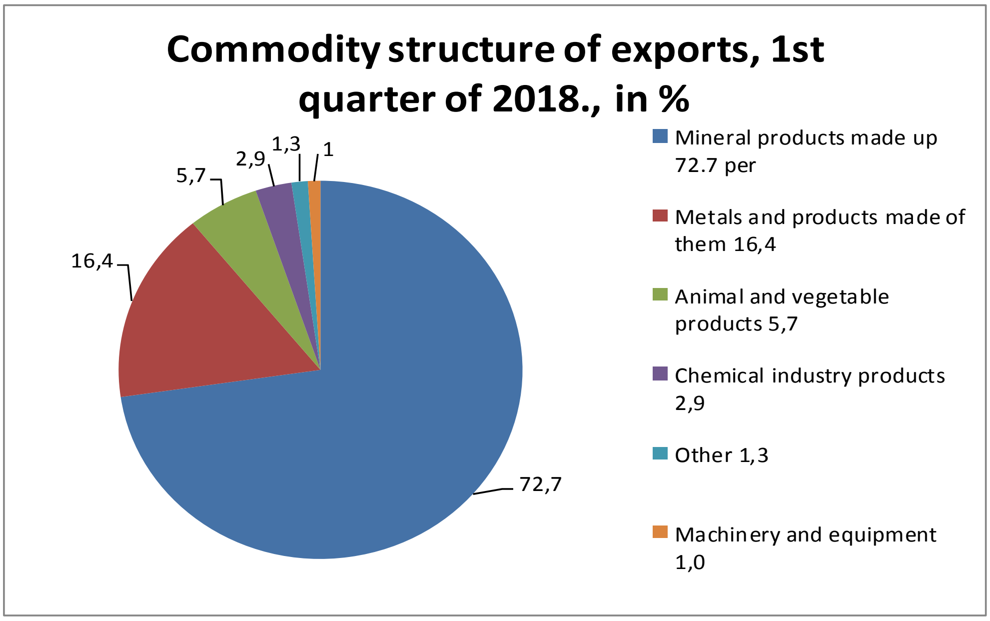

Figure 1 – Commodity structure of exports.

Note: compiled by the author on the basis of The Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan (The Committee on statistics, 2018) [11].

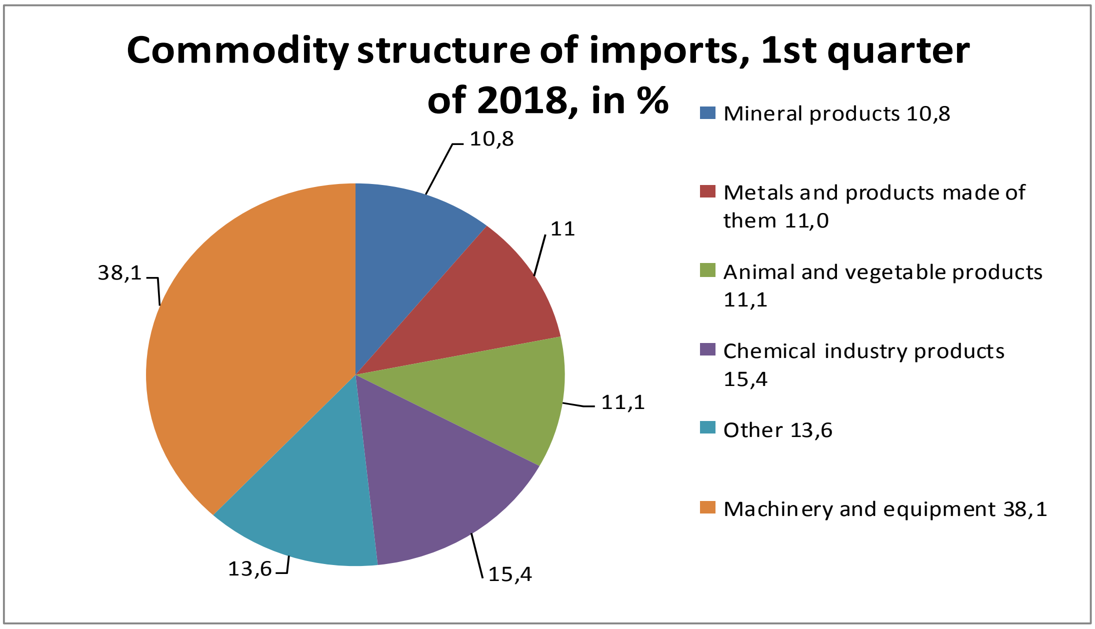

Figure 2 – Commodity structure of imports.

Note: compiled by the author on the basis of The Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan (The Committee on statistics, 2018) [11].

Forms of foreign trade are characterized by a high diversity and mobility. As the world economic ties intensify, new forms of foreign economic activity appear, which may eventually become its independent species, while the essence of the main types of foreign economic activity as a whole remains quite stable (Kaliaskarov B. M., 2010).3.1. In the first quarter of 2018, the analytical aspect of the foreign trade turnover of the Republic of Kazakhstan amounted to 21 026.4 million US dollars and compared to January-March 2017 increased by 24.3%, including exports – 13 779.2 million us dollars (27.0% more), imports – 7 247.2 million us dollars (19.4% more) (The Committee on statistics, 2018) [12].

Mutual trade of the Republic of Kazakhstan with the EAEU (Eurasian economic Union) countries amounted to 4 185.7 million US dollars or 9.1% more than in January-March 2017, including export – 1 328.1 million us dollars (8.5% more), import – 2 857.6 million us dollars (9.3% more) [13].

Exports to the Russian Federation in January-March 2018 amounted to 1 170.9 million US dollars (compared to January-March 2017, more by 7.3%), imports – 2 684.8 million us dollars (8.7% more).

Exports to the Republic of Belarus in January-March 2018 amounted to 23.0 million us dollars (compared to January-March 2017, less by 22.1%), imports – 123.4 million us dollars (32.7% more) [14].

Exports to the Republic of Armenia in January-March 2018 amounted to 2.5 million US dollars (compared to January-March 2017, 8.0 times more), imports – 1.7 million us dollars (compared to January-March 2017, 1.8 times more) (The Committee on statistics, 2018) [15].

Exports to the Kyrgyz Republic in January-March 2018 amounted to 131.7 million us dollars (compared to January-March 2017, an increase of 27.9%), imports – 47.7 million us dollars (6.3% less) [16].

Conclusions. Priorities of the state policy in the sphere of foreign economic activity are defined in accordance with the strategic documents of the concept of development of foreign economic activity of the Republic of Kazakhstan in the context of regions until 2020, presented in the attached List, and include:

- formation (through institutions, mechanisms and instruments of international economic cooperation) of necessary and sufficient conditions for achieving the strategic goals of Kazakhstan in the world economy and increasing the contribution of the foreign economic sphere in solving the problems of innovation-oriented modernization of the national economy and the country's regions;
- development of an integrated Eurasian economic space (common market) member countries of the Eurasian economic Union, ensuring free movement of goods, services, capital and labor;
- establishment of competitive (compared to best international practice) and accessible to the broad masses of entrepreneurs of the national system of institutes and mechanisms of development of foreign economic activity;
- creation of effective for foreign trade participants, ensuring the interests of Kazakhstan and the Customs Union as a whole in the field of economy and security systems of customs administration and crossing the state border of the Republic of Kazakhstan.

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ОСНОВНЫЕ АСПЕКТЫ РАЗВИТИЯ ВНЕШНЕЭКОНОМИЧЕСКОЙ ДЕЯТЕЛЬНОСТИ В ЭПОХУ ГЛОБАЛИЗАЦИИ

Аннотация. В статье рассматриваются вопросы включения государства в глобальные экономические процессы, ставшие необходимым условием национального развития каждой страны, стремящейся к эффективности и конкурентоспособности своей экономики. Важность позиции Республики Казахстан и регионов как полноправных субъектов международных экономических отношений (МЭА), характеризует экономические отношения со многими развитыми и развивающимися странами, расширяет круг стран-партнеров. В статье рассматриваются основные факторы развития внешнеэкономических связей и их влияние на региональную экономику. Охарактеризованы основные этапы плодотворной государственной политики в области внешнеэкономической деятельности (ВЭД), охарактеризована базовая структура ВЭД Республики Казахстан. Происходит углубление торгово-экономических отношений, движение к интеграции в мировой рынок.

Ключевые слова: глобализация, экономические процессы, внешнеэкономическая деятельность, экономические отношения.

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ЖАҺАНДАНУ ДӘУІРІНДЕГІ СЫРТҚЫ ЭКОНОМИКАЛЫҚ ҚЫЗМЕТТІ ДАМЫТУДЫҢ НЕГІЗГІ АСПЕКТІЛЕРІ

Аннотация. Мақалада мемлекеттің жаһандық экономикалық үдерістерге айналған қажетті шартыұлттық даму әрбір елдің, ниеттенгендер тиімділігі мен бәсекеге қабілеттілігін сұрақтар зерттейді. Қазақстан Республикасы мен өңірлердің Халықаралық экономикалық қатынастардың толық құқылы субъектілері (ХЭҚ) ретіндегі ұстанымының маңыздылығы көптеген дамыған және дамушы елдермен экономикалық қатынастарды сипаттайды, әріптес елдер шеңберін кеңейтеді. Мақалада сыртқы экономикалық байланыстарды дамытудың негізгі факторлары және олардың өңірлік экономикаға әсері қарастырылады. Сыртқы экономикалық қызмет (СЭҚ) саласындағы жемісті мемлекеттік саясаттың негізгі кезеңдері сипатталған, Қазақстан Республикасының СЭҚ базалық құрылымы сипатталған. Сауда-экономикалық қарым-қатынастар тереңдетіліп, әлемдік нарыққа интеграциялану жүруде.

Түйін сөздер: жаһандану, экономикалық процестер, сыртқы экономикалық қызмет, экономикалық қатынастар.

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НЕРУШИМОЕ СОТРУДНИЧЕСТВО УЧЕНЫХ БРАТСКИХ СТРАН

Выступление
президента НАН РК, академика М. Журинова
к 75-летию НАН Кыргызской Республики
(13.11.2018 г.)

Национальная академия наук Кыргызской Республики отмечает 75-летие со дня основания.

Создание академии наук в Киргизии, несомненно, сыграло огромную роль в дальнейшем развитии и процветании Республики. За 75 лет своего существования НАН Кыргызстана получила признание не только в республике, но и далеко за ее пределами.

Казахстан и Киргизия имеют богатую историю культурного и научного сотрудничества. Казахстан и Кыргызстан во все времена были братскими и союзническими государствами и стратегическими партнерами.

Нас связывают не только 25 лет отношений новейшей истории – наши связи имеют очень глубокие исторические корни, еще со времен начала цивилизации тюркского мира.

Следует отметить, что помимо четвертьвекового юбилея дипломатических отношений, наши страны в 2017 году отпраздновали еще одну важную для двустороннего сотрудничества дату – 20-летие подписания Договора о вечной дружбе – один из основополагающих для развития партнерства документов.

За прошедшие четверть века мы достигли многих успехов практически во всех областях: экономической, политической, гуманитарной… Для молодых государств в современном мире это уже немало в условиях постоянной и жесткой конкуренции, геополитических трансформаций и технологического прогресса. Важно и то, что мы не растеряли опыт прошлых отношений. Более того, мы постарались его приумножить, что выразилось в современной политике региональной и континентальной интеграции.

У Казахстана и Кыргызстана весьма солидная договорно-правовая база, которая насчитывает более 150 различных документов. Хочу отметить, что в свою очередь между нашими академиями наук был также подписан Договор о сотрудничестве, кроме того, мы тесно взаимодействуем в рамках ШОС, МААН и других организаций.

Следует отметить, между учеными Казахстана и Киргизии развивается сотрудничество в области науки и образования, регулируемое межправительственным Соглашением о сотрудничестве в области образования и науки, подписанным в 2006 году, согласно которому обе стороны осуществляют сотрудничество в таких областях, как:

– обмен информацией о системе образования и реформах, проводимых в образовательной сфере;

– обмен учебными и учебно-методическими материалами;

– обмен обучающимися, педагогическими и научно- педагогическими работниками;

– обмен нормативными правовыми актами по вопросам образования и т.д.

Сегодня в кыргызских вузах обучаются студенты из Казахстана, и осуществляется обмен магистрантами из обеих стран. Сотрудничество между учеными Казахстана и Кыргызстана продолжает развиваться в области гуманитарных наук: истории, политологии, социологии, естественно-технических наук, а также осуществляется в форме совместных научных исследований, конференций, семинаров. Пользуясь случаем, хотел бы поблагодарить наших кыргызских коллег за предоставленное право защищать ученые степени и звания молодым казахстанским ученым.

Дорогие коллеги! Волею судьбы в разные годы многие кыргызы оказались в Казахстане. В Астане в 2006 году была создана Ассоциации кыргызов Казахстана «Манас», которая консолидировала многочисленную кыргызскую диаспору, широко рассредоточенную по всей территории Казахстана, и объединила локальные национально-культурные образования в единую Ассоциацию. Отныне согласно казахстанскому законодательству кыргызы, проживающие в Казахстане, получили возможность выдвигать собственного кандидата в Мажилис на последующих парламентских выборах. Это является свидетельством того, что казахский и кыргызский народ связывает глубокая дружба, общность культуры, языка, традиций, духовных ценностей, которые необходимо сохранить и приумножить для будущих поколений. Мы помним, как в тяжелые времена, наступившие после декабрьского восстания в 1986 году в г.Алматы казахской молодежи против шовинистических решений ЦК КПСС во главе с Горбачевым М.С., киргизская молодежь их поддержала и готова была прийти на помощь своим братьям по крови.

Дорогие коллеги! НАН РК вот уже на протяжении 72-х лет выпускает 8 научных журналов, пропагандирующих достижения казахстанской науки, которые направляются в национальные библиотеки 73-х стран мира, часть из них включены в международную базу «Scopus» и Clarivate Analytics, что подтверждает их высокий международный рейтинг. Многие ученые Кыргызстана являются авторами, членами редколлегий и рецензентами наших журналов, за что мы бесконечно благодарны. Это академик Эркебаев Абдыгани Эркебаевич, доктор физико-математических наук, проф. Джунушалиев В.Д. и многие другие.

12 декабря 2018 года весь мир будет отмечать 90-летие великого кыргызского писателя, академика Чингиза Айтматова. Казахстан принимает активное участие в мероприятиях, посвященных этой дате. Чингиз Айтматов является не только народным писателем Кыргызстана, но и Казахстана, достоянием и гордостью всего тюркского мира. В свою очередь НАН РК, все казахстанцы примут активное участие во всех мероприятиях, посвященных юбилею вашего великого земляка.

Дорогие кыргызские коллеги! В этот торжественный день мы разделяем вместе с Вами радость достигнутых успехов. Несомненно, сотрудничество наших академий открывает новые перспективы в интересах наших государств. Мы уверены, что оно будет крепнуть и развиваться на благо наших народов.

Желаю дальнейшего процветания Национальной академии наук Кыргызской Республики, творческих достижений кыргызским коллегам, счастья и благополучия братскому кыргызскому народу.

Мерейтой – 85 жас

ҚАЗАҚСТАН ҒЫЛЫМЫНЫҢ МАҚТАНЫШЫ

Отандық заң ғылымының дарабозы, біртуар ғалым, Қазақстан Республикасының Ұлттық ғылым академиясының академигі, заң ғылымдарының докторы, профессор **Баймаханов Мұрат Тәжі-Мұратұлы** жақында торқалы 85 жасқа толады.

Дәуірінің дарабозы, талай буынға ұстаз болған академик Мұрат Тәжі-Мұратұлының өнегелі өмірі кімге болса да үлгі. Әділдік пен адалдықтың ақ жолында жүрген заңгер болуды мақсат тұтқан ағамыз сол кездегі ұлы байтақ еліміздің ең таңдаулы жоғары оқу орны Мәскеудің М. В. Ломоносов атындағы мемлекеттік университетінің заң факультетін бітіріп, бүгінгі күнге дейін ғылыми жұмыспен педагогикалық қызметті қатар атқарып, шәкірттерін ғылымға, өздері ұнатқан мамандығына адал қызмет етуге қажымай-талмай баулып келеді.

Қиын да қызықты өмір жолында биік парасат- пайымымен, адамгершілік пен имандылыққа толы асыл қасиеттерімен ерекшелене білген абыройлы азаматтың ғибратқа толы жолы кейінгілерге, жас ұрпаққа үлгі-өнеге бола білген. Академик, мемлекет және қоғам қайраткері М. Т. Баймаханов даналықты, ұлылық пен ірілікті бір басына тоғыстыра білген жан. Оның өмір жолы, ғылым саласындағы жетістіктері, адами асыл бейнесі жан-жақты ашылып, кеңінен насихатталуы тиіс. Өйткені, Мұрат ағамыздың өмір жолы көпке өнеге.

Мұрат ағамыздың елден ерекшеленетін адами қасиеттері жетерлік. Әуелі ағамыздың адалдығы мен тазалығын, әділдігі мен имандылығын, кішіпейілділігі мен зиялылығын, құдай берген салмақтылығын, сабырлы мінезін, айтқан сөзіне тұрақтылығын айтуымыз керек. Жүрегі ұшқыр, ең әуелі қара басына қатал талап қоя білетіндігінің арқасында ол ірі ғалым дәрежесіне көтеріліп, ізденістер мен қиыншылықтарға толы күрделі жолдан сүрінбей өтіп, биік тұлғалы қазақ зиялыларының қатарына қосылды.

Академик М.Т.Баймахановтың есімін отандық ғылым мен жоғарғы мектеп зор мақтанышпен айта алады.

Мұрат Тәжі-Мұратұлының көрнекті ғалым, ұлағатты ұстаз және еліміздің нағыз ұлтжанды азаматы ретіндегі дара болмысы тәуелсіз Қазақстанды құрудың алғашқы жылдарында қылыштай жарқырай көрінді.

Ол еліміздің мемлекеттігін қалыптастыру және оның тәуелсіздігін тұғырлы етуде, мемлекеттік пен заңнаманың отандық жүйесінің негізінде жатқан ғылыми-теориялық идеялар мен ережелер кешенін жасауға өлшеусіз үлес қосты.

Адам баласының өмірінде қол жеткізген жетістіктері оның елге сіңірген еңбегімен өлшенбек. Табысты азаматтың жиған-терген дүниесіне, мал- мүлкіне емес, оның ұзақ жылдар бойы ел алдында абыройы мен адал еңбегіне, осыншама табысқа жету жолында танытқан табандылығы мен шынайы күресіне қарап өлшейміз, түрлі бағасын беріп жатамыз. Өйткені нағыз азаматтың еңбегін, тірлігін өзгелер байқайды, тиісінше айналасындағы жұрт әділ бағасын беріп жатады.

Ел үшін еңбек еткен, туа біткен табандылығымен таңдаған қызметінің тізгінін тік ұстай білген ғалым, академик Мұрат Тәжі-Мұратұлы Баймаханов 1933 жылы 1 қарашада Алматы қаласында туды. Оның әкесі – Зейнолла Сейтжанұлы Төреғожин Атбасар, Ақмола, Петропавл қалаларында Кеңес өкіметін орнатуға белсене араласқан, РКП(б) Х1 съезінің делегаты болады, болыстық, уездік, губеріндік және республикалық органдарда, оның ішінде ВЦИК жанындағы Қазақстанның өкілетті өкілі, КСРО совхоздар наркоматы аппаратында қызмет атқарған. 1937 жылдың ақпанында ҚазССР астық және малшаруашылығы наркомының бірінші орынбасары болып тағайындалады. Бірақ сол жылы, яғни 1937 жылдың маусымында, Жапонияның пайдасына шпиондық контрреволюциялық әрекет етті деген айыппен қамауға алынады.

З.С.Төреғожин КСРО Жоғары Сотының Әскери коллегиясының қаулысымен айыпталып, 1938 жылы 25 ақпанда атылады. Әкелері қамауға алынғаннан кейін оның отбасы қаладағы пәтерінен және мемлкеттік дачаларынан қуылады. Мұраттың анасы үш ұлдарымен Ұзынағаш селосына көшіп келуге мәжбүр болады. Онда Мұратты анасының баласыз сіңлісі өз қамқорына алады, міне, осы жағдай Мұратты келешекте кезедесетін қауіптерден аман алып қалады. Себебі, олар «халық жауы» ретінде репрессияға ұшыраған отбасының басына түскен барлық ауыртпалықтарды, әсіресе, барлық әлеуметтік шектелулерден зардап кешеді.

Мұраттың әкесі З.С.Төреғожин 1957 жылы 30 мамырда толық ақталады. Оның алдында әкесінің тағдыры туралы ізденіп жүрген Мұратқа КСРО Жоғары Сотының Әскери коллегиясының өкілдері әкең айдауда жүрген жерінде қайтыс болды деп жауап береді. Тек 1992 жылы белгілі болғандай, Мұрат Тәжі-Мұратұлының әкесі Алматы түбіндегі Жаңалық селосында атылып, денесінің сонда жерленгеніне көзі жетеді.

Алғырлығы мен зейінділігінің арқасында Мұрат ағамыз Мәскеуге 1952 жылы барып, М.В.Ломоносов атындағы Мәскеу мемлекеттік университетінің заң факультетіне түсіп, әкесі ақталған 1957 жылы оны «құқықтану» мамандығы бойынша бітіріп, заңгер мамандығына ие болады. Оқу үлгеріміндегі озық нәтижелері үшін төртінші курстан бастап студент Мұрат Д. И. Курский атындағы арнаулы стипендия да алып тұрады.

Байтақ еліміздің астанасы Мәскеу Мұрат Тәжі-Мұратұлының өмірінде білім алумен қатар жеке басылық өмірінде де ерекше орын алды. Өйткені әрбір азамат өзінің өмірлік серігін, жарын табу ең басты арманы болатыны айдан анық нәрсе емес пе? Міне, осындай арманына әлі де студент бола жүріп Мұрат Тәжі-Мұратұлы да жетті деуге болады. Ол сол оқу орнында оқып жүрген Рауза Меңліахмедқызы Қонаевамен танысып, отбасын құрады. Қазіргі уақытта алпыс жылдан артық бақытты отбасылық өмір сүріп, балалары мен шөберелерінің арасында қызықты да, бақытты өмірлерін одан әрі жалғастыруда.

Жоғары оқуды бітірген жас жігіт еңбек өмірінің жаңа асуын асуға белін бекем буып, іске кірісіп те кетеді. Атап айтқанда, 1957 жылдан Қазақстанның Әділет министрлігінде екі жыл жұмыс атқарады.

Өмірінің жастық шағынан еңбекпен достасып, талай «халық жауының» отбасының зардаптарынан туған қиындықтарды еңсере білген Мұрат ағамыз ғылымның да қатал талабын абыржымай қарсы ала білді. 1959–1962 жылдары М. Т. Баймаханов КСРО Ғылым Академиясының мемлекет және құқық институтының аспирантурасына түсіп, оны бітіреді.

Мұрат Тәжі-Мұратұлының аспиранттық жылдары жеке адам мәселерін ақтап шығару нәтижесінде қоғам мен адам туралы ғылымдар тарихында жаңа тарау ашқан ғылым үшін берекелі «жылымық» кезеңге дәл келді. Сол жылдардағы Мәскеу мемлекет және құқық институты – жеке адамның өзіндік жеткіліктілігі мен жоғары құндылығы идеясынан туындайтын кез келген шынайы либерализм сияқты, отандық либерализмнің қайта өрлеуінің ғылыми орталықтарының бірі болды. Ғылымда сақталған тексеріп қарау тәртібі ауызша жанрлардың көптігімен және айқындылығымен өтелді: институтта салтанатты жетістіктер кезінен ширек ғасыр бөлген идеялар, тұжырымдамалар, жобалар талқыға түсті.

Көпшілік жағдайда идеологиялық қызмет атқарған кеңестік мемлекеттік құқықтың жеке басқа табынудың мемлекеттік құрылысына көнгіш, сіресіп қалған соқыр сенімдегі ғылымға қарама-қайшы бір өзіне теориялық және қолданбалы қызметтерді табиғи түрде сиғызған «ымырашыл» мемлекеттану дами бастады да, ғалым мен азамат парызын адал маманның өз күшін толық пайдалануына тамаша жол ашты. Бұл жаңа бағыттың бастауында М. Т. Баймахановтың ғылыми жетекшісі, Мәскеу мемлекет және құқық институтының кеңестік мемлекеттік құқық секторының меңгерушісі, заң ғылымының кандидаты, нағыз ғалым, ерекше талант иесі В. Ф. Коток, осы секторда жұмыс істейтін айрықша демократиялық бағыттағы мемлекеттанушы ірі ғалымдар, профессорлар Н. П. Фарберов пен Ц. А. Ямпольская болды. Ұстаз-тәлімгерлер Қазақстаннан келген жас ғалымның талантын байқап, оның сирек кездесетін қабілетін кеңірек ашты.

Міне, осындай алдына үлгі болар ұлаты мол ұстаз ағалары болған Мұрат Тәжі-Мұратұлы Баймахановтың құқықтану әлемінің сыр-сипатын зерттеуде үлкен табандылық көрсетіп келеді.

Осындай ғылымға талғампаздық пен тілектестік жағдайында М. Т. Баймаханов шығармашылығының ойшылдық, теориялық басым жақтары – қоғамды адамгершілік, құқық пен демократия бастауында қайта құрудың ұтымды мемлекеттік құқықтық жолдарын іздестіру қалыптасады. Ғалым ізденістерінің ерекшелігі – әр мәселені кешенді түрде зерттеуі, ұсақ-түйекке бойын аудармай, проблеманы даму негізі мен өзекті заңдылықтары, одан шығатын ғылымға керек тұжырымдар, концептулды қорытындыларды іздеді.

Мұрат Тәжі-Мұратұлының құқықтанудың түрлі салаларынан хабар берген еңбектерге толы, оның шығармашылығына тұтастық пен құрылымдық ой қисындылығын берген жұлдызды жолы осындай.

Бүгінгі академик М. Т. Баймахановтың сол кезде көпшіліктің назары ерекше ауған және де қоғамдық өмірді демократияландыру мен жақсартудан үміт диссертациясына «Еңбекшілердің қоғамдық ұйымдарының мемлекеттік органдары қызметін жүзеге асыру тәжірибесі» деген тақырыпты таңдап алды. 1963 жылы диссертациясын ойдағыдай қорғап, республика Ғылым академиясының философия және құқық институтына қызметке кіріседі.

1973 жылы Алматыда қазақ жоғары оқу орындарының бірден-бір шаңырағы Қазақ мемлекеттік университетінде «Противоречия в развитии правовой надстройки социального общества и пути их преодоления» тақырыбында Мұрат Тәжі-Мұратұлының кандидаттық диссертациясына жетекшілік жасаған мәскеулік ірі, танымал ғалым В.Ф.Котоктың тағы да жетекшілігімен докторлық диссерациясын қорғады. Одан әрі М.Т.Баймахановқа ғылымға даңғыл жол ашылды: 1975 жылы ҚазССР Ғылым Академиясының корреспондент-мүшесі, ал 1983 жылы – академигі болып сайланды. 1993 жылы профессор атағын алды. 1996 жылдан Қазақстан Республикасы жаратылыстану ғылымының академигі, 2000 – еуропалық құқық Академиясының мүшесі (Будапешт, Венгрия).

М. Т. Баймахановтың 1957 жылдан бергі еңбек жолы Ұлттық Ғылым Академиясының философия және құқық институтымен байланысты: кіші және аға ғылыми қызметкер, ғалым хатшы, бөлім бастығы, ғылыми жұмыс бойынша директордың орынбасары, институт директоры қызметтерін атқарды.

1992–1995 жылдары Қазақстан Республикасының Конституциялық Сотының төрағасы, кейінгі жылдары «Қайнар» университетінің проректоры және «Әділет» АЗ ЖҚМ ғылыми жұмыс жөніндегі проректоры, ҚазГЗУ ғылыми сараптама және талдау институтының директоры, «Қазақстандағы құқықтық реформа» журналының редакторы қызметтерін атқарған.

Академик М. Т. Баймахановтың ғылыми ізденістері негізгі екі бағытта дамып келеді: біріншісі – мемлекттік құқық пен кеңестік құрылыс, конституциялық құқық, екіншісі – құқықтың жалпы теориясы, 70-жылдардың соңынан бері белсенді түрде саясаттану мәселелерімен айналысып келеді. Ғылыми қызметтің өзі таңдаған негізгі екі саласында М. Т. Баймаханов бұрынғы Одақ көлемінде жетекші ғалымдарының қатарына көтерілді.

М. Т. Баймахановтың ғылыми қызметінің екі негізгі бағыты бар: номенклатуралық аз топ үстемдігінің жаппай билігіне қарсы тұрған кеңестік құқықтанудың демократиялық қанатының екі негізгі бастауының нәр алған ортасы мен қалыптасу жайы – ымырышалдық пен конституционализм. М. Т. Баймахановтың құқықтың жалпы теориясы, мемлекеттік және конституциялық құқық жөніндегі еңбектері бұған айқын дәлел бола алады.

Азаматтық қоғамның қалыптасуы, құқықтық мемлекет құру өз бетінше да дамуға қабілетті жеке, бірлескен қатынастар мен шындық көріністерінен мемлекетті азат етуге және азаматтық қоғам тұтастығының жалпыға бірдей негізін мемлекеттің өз табиғатына тең келетіндей етіп айналдыруға байланысты. Түп негізінде кандидаттық жұмысынан алынған М. Т. Баймахановтың «Мемлекеттік органдар қызметінің қоғамдық ұйымдарға ауысуы туралы» деген алғашқы монографиясы (1965) шексіз билеушілік бастауларын қозғаған айтарлықтай маңызды зерттеу ғана емес, кеңестік тоталитарлық қоғамды ашуға арналған алғашқы еңбектердің бірі болды.

Кітапта авторға тән тыңғылықтылықпен ауқымды тәжірибе мен мөлшерлі материалға негізделген деректер бойынша сол жылдары талқыға көп түскен негізгі мәселелер: демократияландыру жағдайындағы мемлекеттік қызметтердің өзгеріске ұшырауы, өтпелі кез барысындағы мемлекеттік қызметтердегі басшылықты ауыстыру реті, қоғамдық ұйымдардың тапсырылған қызметтерді іске асыру тәсілдері қарастырылып, сол кезде көптеген теоретиктер мен практиктер қуаттаған шешімдер ұсынылды.

Автор Кеңестердің өкіметтің өкілетті органдары ретіндегі үлкен ролін қорғап, өздеріне тән емес қызметтерді іске асырған партия органдарының Кеңестер қызметіне араласуына, атқарушы биліктегі өкілетті мекемелердің жаппай қысымы мен жаншуына қарсы шығады. Кеңестер қызметіндегі халықтың өзін-өзі басқаруы мен бірлесіп басшылық жасау бастаулары, тікелей демократияның формалары ешқандай да дәріптеушіліксіз зерттеледі. Орталық және жергілікті мекемелердің өзара қарым-қатынасының мәселесіне байланысты жергілікті өзін-өзі басқарудың көптеген органдарының шын мәніндегі заңсыз әрекеттері аяусыз сынға алынады, жергілікті Кеңестер қарауына шаруашылық және мәдени құрылыстың көптеген мәселелерін тапсыру ұсынылады, төмендегі буындар құзіретіне жататын мәселелерді жоғары тұрған Кеңестердің тікелей қарау практикасын айыптайды. Қисынды айқындылықпен Кеңестердің ерекше құзіретіне конституциялық кепілдіктер енгізу қажеттілігі туралы ұсыныс жасайды.

М. Т. Баймахановтың ірі монографиялық жұмыстарының бірі құқық дамуының қайшылықтарын тұтасымен, сонымен қоса құқықтық санадағы, құқықтағы және оның іске асуы нысандарындағы қайшылықтарын зерттеуге бағытталған. Оның еңбектерінде құқық түсінушіліктің қазіргі проблемаларын ашу, тұлғаның әлеуметтенуінде құқықтың алатын орнын табу және азаматтардың жүріс-тұрыстары мен санасына құқықтық ықпал етуінің рөлін анықтау мәселелеріне көп көңіл бөлінген. М. Т. Баймахановтың бірқатар жұмыстарында тұлғаның өмірлік қызметі үдерісіндегі құқық нормалары мен мораль нормаларының және адамгершілік нормаларымен өзара әрекеттену нысандары қарастырылған. Осындай идеялардың жалғасы М. Т. Баймаха-новтың кеңес дәуірінен кейінгі қоғамда құқықтық мемлекетті құрудың объективті қажеттілігін негіздеуге, оның этатистік мемлекеттен айырмашылықтарын анықтайтын қасиеттерін ашып көрсетуге, оның нарықтық қатынастарға көшудегі бастауы мен қағидаларын бекіту жолдарын іздеуге, сондай-ақ құқықтық мемлекет пен азаматтық қоғамның жүйелі құрастырушы белгісі ретінде – құқықтың үстемдігін көрсетуге арналған еңбектерінде көрініс тапты. Оның юриспруденцияда салыстырмалы әдістерді пайдалану және салыстырмалы құқықтану мен салыстырмалы мемлекеттану сияқты ғылыми пәндермен байланысы туралы мемлекет және құқық теориясының бірқатар түйінді әдістемелік кейбір мәселелерінің нысандарын пайымдау туралы жұмыстары да өзекті болып табылады.

Құқықтың жалпы теориясы жөніндегі ғалым-зерттеушінің қырықтан астам еңбегінде құқық санасының түрлі теориялық жайлары, құқық, мораль мен адамгершілік, құқықтың жеке адамды әлеуметтендіру рөлінің, құқықтық адамгершілік ағарту мен тәрбиенің және т.б. өзара әрекет ету мәселелері қарастырылады.

Құқықтың жалпы теориясы жөніндегі еңбектерде М. Т. Баймахановтың зерттелінетін объектілерге философиялық тұрғыдан ғалым ретінде байыпты келуі ерекше айқын байқалады. Бұл ретте оның «Әлеуметтік шындық көрінісінің ерекше формасы ретіндегі құқық» деген еңбегінде (1981) құқықтық идеология мен әлеуметтік-құқықтық психологияның қамтушы қызметі теориялық жағынан зерттеледі, шынайлық пен жалғандық категоряларының құқықтық нормаларға жарайтындығы туралы мәселені өзіндік шешу ұсынылады.

Бірнеше жылдар бойы М. Т. Баймаханов конституционализм проблемаларымен айналысады. Оның зерттеулерінде конституциялық нормалардың тікелей және жанама қатысты әрекет етуі, мемлекеттің Ата заңның құрылтайшы сипаты және жоғары заң күші, конституциялық және ағымдағы реттеудің өзара қатынасы сияқты сұрақтар қарастырылған.

М. Т. Баймахановтың бірқатар еңбектері заң жобаларын ғылыми сараптамалық зерттеуге арналған: құқықшығармашылық үдерісіне ықпал ету нысаны, заң нормаларындағы кемшіліктерді табу және олардың жою жолдарын табу, сараптаманың құқық шығармашылықпен кері байланысының ерекшеліктері, енгізілген өзгерістің дұрыстығын тексеру жолдары.

М. Т. Баймахановтың басылымдарының ішіндегі ең ірі және мемлекет және құқық теориясы бойынша таңдаулыларын атасақ: «Избранные труды по теории государства и права» (2003), «Взаимодействие правового сознания с моралью и нравственностью в обществе переходного периода» (1995), «Противоречия в развитии правовой надстройки при социализме»(1972).

Осы кітаптардың біріншісінде мерейтой иегерінің ғылыми қызметі кезеңіндегі заң ғылымының әдістемесі, Қазақстанның мемлекеттілігі және құқықтың даму кезеңдері, мемлекет функциялары және мемлекеттік органдардың функциялары, құқықтық мемлекет және азаматтық қоғам, конституция кеңестік дәуірден кейінгі Қазақстандағы құқықтың негізгі қайнар көзі ретінде, тұлғаның санасына құқықтың әсер етуі, қазіргі кезеңдегі ұлттық құқық және халықаралық құқық нормаларының үйлесуі туралы негізгі тұжырымдар түйінделіп және бөлімдерде біріктіріліп, біртұтас шоғырланып баяндалады.

М. Т. Баймахановтың еңбектерінде құқық шығармашылықтың ғылыми тәжірибелік аспектіліріне көп көңіл бөлінген. Аталған маңызды қызмет түріне концептуальды тұрғыдан қарау туралы баяндамалар жасау барысында, норма шаруашылықтың сапасын көтеру құралы ретінде құқықтық мониторинг туралы жеке пікірін айту арқылы, Қазақстанның қоғамдық құрылымдары туралы заңнамасының дамуы өзінің жасаған концепциясының ерекшелігін тыңғылықты негіздеді.

Мерей той иегерінің бірқатар жарияланымдары кінәсіз азаматтарға қатысты қолданылған жаппай саяси қуғын-сүргінге ұшыратқан кеңес өкіметі саясатының сазайын тарттыруға, бұл шараның халыққа қарсы сипатын көрсетуге арналған. 2008 жылдың маусым айына дейін ол қазақстандық тарихи ағартушылық және құқық қорғаушы «Әділет» қоғамының президенті болған: оның жетекшілігімен бірнеше «Азалы кітаптар» («Скорби книги»), Қазақстандағы 1930-1950 жылдардағы жүргізілген саяси қуғын-сүргіндер сабақтарын қазіргі заманауи тұрғысынан қайта зерделеу туралы өткізілген бірқатр конференциялар материалдары жинақтары, сол кездегі уақытты көрген адамдардың естелік жинақтары жарыққа шыққан.

М. Т. Баймаханов ақталғандардың қиын-қыстау кезеңіндегі жағдайын жеңілдетуге байланысты тәрбиелік – насихаттаушы және өзге де іс-шараларды ұйымдастыруға бастамашы болып, белсене ат салысқан азаматтардың бірі болып табылады.

Ерекше шығармашылық дарынын әкімшілік қабілеттерімен үйлесімді түрде ұштастыра білуінің өзі М. Т. Баймахановты ғылымның тамаша ұйымдастырушысы екенін хабардар етеді. Ол басшылық еткен бөлімдерде тәжірибелі және жас қызметкерлер біріккен тату шығармашылық ұжымдар қалыптасты, олардың көбі Мұрат Тәжі-Мұратұлының шәкірттері болды. Сол ұжымдардың қызмет тәсілінде басшының сирек кезедесетін жеке тұлғасының белгілері байқалып, қызметкерлердің әрқайсысына ең жақсы адамгершілік және кәсіби қасиет еріксіз талап етілді. Ол мемлекеттік, конституциялық құқық, кеңестік құрылыс мәселелерін зерттеген кезде институтта әр жылдары Н. И. Акуевпен, С. Қ. Амандықовпен, А. К. Котовпен, М. А. Биндермен, Л. Т. Жанузақовамен, И. Қ. Қожабаевпен, Т. Ж. Құсманғалиевамен, Г. В. Нечи-тайломен, А. В. Розенцвайгпен, Р. С. Сәкиевамен бірге жұмыс істеп, құқықтың жалпы теориясы саласында М. М. Атановпен, А. У. Бейсеновамен, К. С. Біржановамен, Д. А. Булгаковамен, Л. М. Вайсбергпен, М. А. Ибрагимовпен, Е. К. Нупейісовпен бірге қызмет атқарды.

Енді Мұрат Тәжі-Мұратұлы Баймахановтың қайраткерлік қырларын айтатын болсақ, сөздің тура мағынасында қазақтарға тәуелсіздікті әкелердегі Ұлт көшбасшысы Нұрсұлтан Әбішұлы Назарбаев төңірегіне тығыз топтасқан санаулы сардарлардың бірі болды. Ол тәуелсіздікке дейін және тәуелсіздікті ақиқатқа айналдыру жолында аянбай күрескен азаматтардың бірі және бірегейі. Кейіннен еліміздің егемендігі жарияланған соң тәуелсіз елдің заңнамалық тұғырнамасын жасауда ерекше еңбек сіңірді.

Танымал ғалымның еліміз тәуелсіздік алған тұста мемлекттанушы – заңгерлік, ғалым-қайраткерлік қыры мен таланты, шынай елжандылық сезімі, ерекше патриоттық рухының биіктігі жарқырап көрінді. Оған айғақ оның 1992 жылы Қазақстан Республикасы Конституциялық Сот төрағасы болып сайлануы оның тамаша қасиеттері мен еңбектерін танудың жоғары белгісі болып қана қоймай, адам мен әлеуметтік рөлдің сәйкес келуінің, Конституциялық Сотта республиканың абыройы мен намысын қорғай білудегі ерекше білімділігі мен қабілітінің айқын мысалы болып табылады. Осындай бірден-бір ең жоғары мемлекеттік қызметте ол елімізде конституциялық заңдылықты бекітуде, жалпы сот билігінің рөлі мен құзыретін көтеруде, ҚР Конституциялық Сотының қызметін ұйымдастыру мен бағыттарын анықтауда көп жұмыстар атқарды. Бұл орган, шын мәнінде, Қазақстан тарихында бірінші рет нормативтік құқықтық актілер жүйесінде Ата заңның басымдылығын және үстемдігі мен басымдылығын іс жүзінде қамтамасыз етті.

Конституциялық Соттың төрағасы бола жүріп, М. Т. Баймаханов ғалым болып қала берді. Өзі ғылыми жұмыспен айналыса жүріп, ол атаулы жоғары органда заңнамаларды талдауда еңбектің ғылыми түрде ұйымдастырылуы мен ғылыми әдістерді енгізуге тырысып бақты. Соттың жанында теоретикалық семинар ұйымдастырылып, жылына бірнеше рет онда өзекті конституциялық теоретикалық және практикалық мәселелер бойынша әртүрлі хабарламалар тыңдалып отырылды. Теоретикалық семинар судьялардың және аппарат қызметкерлерінің кәсіби білімділігін арттыруда, кейбір өзекті ғылыми-практикалық мәселелерді ұжым болып талдауда көп жұмыстар атқарды.

ҚР Конституциялық Соты төрағасы ретінде М. Т. Баймаханов өзін басқарудың демократиялық стильдегі басшысы, парасатты саясаткер, конституциялық құқық саласында сезімтал және беделді маман ретінде көрсетіп, Ата заңды, адамдардың құқығы мен еркіндігін сақтауда адал және дәйекті қорғаушы екендігін танытты.

М. Т. Баймаханов әрдайым республикамыздағы заң шығарушы және нормативтік құқықтық актілерді дайындау қызметіне белсенді қатысады. ҚазССР 1978 жылғы, Қазақстан Республикасының 1993 жылғы Конституцияларының жобасын дайындаған жұмысшы және сараптамашы топтарының құрамына кірген, халық депуттары аудандық Кеңестері туралы, қаладағы халық депуттары аудандық және қалалық Кеңестері туралы Заңдардың жобаларын жасау жөніндегі комиссияларды басқарды, республика Жоғарғы Кеңесіне сайлау туралы және республика Министрлер Кабинеті туралы Заңдардың жобалы жөніндегі үкімет комиссиясының құрамына енді, «Жаппай саяси қуғын-сүргіндер құрбандарын ақтау туралы» заңның жобасын дайындау бойынша жұмысшы тобының жетекшісі болды. 2008 жылы ҚазГЗУ профессорлары тобы бастамасымен әзірленген «Қазақстан Республикасының мемлекеттік тіл туралы» заңның жобасын дайындауға қатысты.

Азамат ретінде Мұрат Тәжі-Мұратұлы қуғын –сүргін зардабын басынан кешірген отбасының мүшесі бола отырып, осы мәселеге көп көңіл аударды. Ол жаппай саяси қуғын-сүргін құрбандарын ақтауға арналған заңнамаларды дайындауға, оларды есте сақтауға арналған қоғамдық жұмыстарға, Алматы облысы, Іле ауданы, Жаңалық аулында саяси құрбандарды еске қалдыруға арналған мемориалдық кешенді ашуға белсенді қатынасты.

Өзінен-өзі түсінікті, бұл бүкіл қоғамды толғандыратын мәселеге Мұрат Тәжі-Мұратұлы жайбарақат қарамады, өзінің осы тақырыпқа арналған көпсериялы мақалаларында бұл мәселені терең зерттеуге өзінің зор үлесін қосты.

Шығыс халықтарында «Адам дана жүректі және игілікті ақыл иесі болу керек» деген мақал бар. Мұрат Тәжі-Мұратұлы бүтіндей өмір жолында осы мақалдың қағидатын ұстанды.

Мұрат Тәжі-Мұратұлы – биік зиялы адам, оның әрбір жүйке тамыры оны гүлденген ізгілікті өмір жолына бастады, оның бүтіндей болмысын имандылық және рухани құндылықтарымен толықтырып, әділдік, парыз, ар, намыс, абырой, жауапкершілік, тәртіп, сол қасиеттердің өзегі болды. Ол дегеніңіз, өмірдің тынымсыз ағысының, шығармашылық та дарынды тұлғаның тіршілігінің қуатты арқауына айналды.

Білікті басшы, шебер ұйымдастырушы ғылыми кадр дайындауға да ерекше мән берді.

М.Т.Баймаханов Қазақстан Республикасы Ғылым Академиясы философия және құқық институты жанындағы және ҚазГЗУ жанындағы заң ғылымдарының докторы дәрежесін қорғау жөніндегі арнайы диссертациялық кеңесті 12 жылға жуық басқарды.

Мұрат Тәжі-Мұратұлы 9 докторлық жұмыстың ғылыми жетекшісі болды (А.К.Котов, А.А.Матюхин, Р.Х.Макуев, Р.А.Подопригора, Е.М.Абейдил-динов, Ж.Д.Бұсырманов, т.б.). Ол 70-тен аса заң ғылымдарының канди-даттарының жетекшісі болды, оның ішінде Н.И.Акуев, А.У.Бейсенова, Ж.Д. Бұсырманов, Г.С.Жусупова, М.С.Досымбеков, М.А.Ибрагимов, В.А.Калюжный, В.Г.Ким, А.К.Котов, А.Күнтлеуов, Г.П.Лупарев, Р.Х.Макуев, А.А.Мо-чанов, Е.К.Нұрпейсов, А.В.Розенцвайг, Р.С.Сакиева, К.Сәтбаева, Л.А.Сахи-пова, Н.П.Скачкова, Л. В.Сокольская, Н.Х.Чонова, З.Е.Шереметьева, т.б.

М. Т. Баймахонов Қазақстан Республикасы Жоғары аттестациялық комиссиясының (ЖАҚ)заң ғылымдары бойынша эксперттік кеңесінің төрағасы болды. Көп жылдар ҚР білім және ғылым минстрлігі мемлекет және құқық институтының заң ғылымдары бойынша докторлық диссертация қорғайтын кеңестің төрағасы және мүшесі, әл-Фарбаби атындағы Қазақ ұлттық университетінің саясаттану ғылымы бойынша докторлық диссертация кеңесінің мүшесі, Қазақ гуманитарлық-құқық университеті, «Әділет» Жоғары мектебі және Қазақ академиялық университеттердің біріккен докторлық диссертация қорғау кеңесінің төрағасы болды. Қырғыз мемлекттік университеті жанындағы кандидаттық диссертациялар қорғаудың салааралық кеңесінің мүшесі де болды. ҚР Ұлттық Ғылым Академиясының эксперттік кеңесі мүшесі болып қызмет атқарды.

Талантты ғалым, ұстаз ретінде академик М. Т. Баймахановтың білікті ғылыми мектебі қалыптасты. Академиктердің шәкірттері бүгінде беделді үкімет басқару, министрлік, ведомстволық басшылығында, бірқатары жоғары оқу орындарында жетекшілік етуде, ғылыми мекемелерде, ғылым жүйесінде лауазымды, профессор, доценттік дәрежеде қызмет атқаруда.

М. Т. Баймаханов ғылыми зерттеу жұмыстарын жүргізумен ғана шектелген жоқ. Зерттеу жұмыстарын ғылыми-педагогикалық, ұйым-дастырушылық – тәрбие және оқу-әдістемелік қызметтермен ұштастыра білді.

Оның бұл қызметі бір жоғары орнымен шектелмейді, себебі мұндай талант иесінің, орасан зор білімі – жалпыұлттық мәні болуы тиіс.

1995 жылы еліміздің жаңа Конститукциясы қабылданып, күшіне енгеннен кейін, Конституциялық Сот таратылып, оның орнына Конституциялық Кеңес жұмысқа кіріскеннен кейін Мұрат Тәжі-Мұратұлы «Қайнар» университетінің проректоры болып қызмет атқарды және біраз жыл осы университеттің профессоры болады.

1996 жылы ол «Парасат» атты Қазақ академиялық құқық институтының негізін қалаушылардың бірі болы.

Профессор М.Т.Баймахановтың педагогтық қызметінің біраз бөлігі республиканың құқық саласында мамандар дайындаудың орталықтарының бірі болған «Әділет» Жоғары мектебінде болып, оның ғылыми жұмысы жөніндегі проректоры, профессоры болуы. Сонымен бірге бір уақытта Қазақ мемлекеттік құқық университетінің профессоры қызметін де атқарды.

2005 жылдан Мұрат Тәжі-Мұратұлы осы унивеситетке біржолата ауысып, жаңа астанамызға қоныс аударды. Мұнда ол теория және мемлекет тарихы, құқығы кафедрасының меңгерушісі, ал 2008 жылдан осы университеттің ғылыми экспертиза және талдау Ғылыми-зерттеу институтының директоры қызметін атқарды. Ол басқарған институт ҚР Әділет министрлігінің тапсырысы бойынша Парламенттен бастап жергілікті атқарушы органдардың нормативтік актілеріне ғылыми экспертиза жасаумен шұғылданды.

Кафедра меңгерішісі бола жүріп, Мұрат Тәжі-Мұратұлы өз әріптестерімен қашанда жақын қарым-қатынаста болып, ол өз қызметінде жоғары ұйымдастырушылық қабілетін көрсетті, ақ көңіл жайдары мінезімен бірқалыпты қарым-қатынас жасай білуі мен білімділігімен үлгі бола отырып, өзі басқарған кафедра ұжымын заң ғылымының қазіргі өзекті мәселесі бойынша студенттерге, магистрантарға, аспиранттарға, доктoранттарға тереңдете білім беруге қол жеткізді, осы мақсатты ең жоғары талап деңгейінде қалыптастырды. Педагог ретінде студенттер алдында дәріс оқу, олармен азаматтық – ұлттық-мемлекетшілдік тәрбие жүргізу мүмкіншілігін қалт жібермеді. Ол оқу, тәрбие, ғылыми жұмыстар бағытын ұйымдастырушы және іскерліктің тиімді үлгілерін ұсына білетін белсенді басшы ретінде көрінді.

М. Т. Баймаханов көп жылдар қосалқы қызмет ретінде әл-Фараби атындағы Қазақ ұлттық университетінде доцент және профессор қызметтерін атқарды.

М. Т. Баймаханов қоғамдық істердің көш басында жүретін белсенді азамат. Оның қажымас ғылыми-ұйымдастырыушылық және қоғамдық қызметі таң қалдырады. Ол көп жылдан бері осындай өте маңызды қоғамдық қызметтермен айналысады. Оның ғылыми-ұйымдастырушылық және баспагерлік қызметі де сан-салалы. Атап айтсақ, «Правоведение» (Ленинград- Санкт-Петербург) журналы, Ұлттық Ғылым Академиясының «Хабаршы» журналы, «Мысль», «Юридическая газета», «Право и государство», т.б. журналдарының редколлегия мүшесі.

Академик М. Т. Баймаханов 2006-2010 жылдары Қазақ мемлекеттік заң университетінің «Құқық және мемлекет» журналының бас редакторы болды, ол жоғары оқу орындарының ішінде Қазақстандағы заң ғылымдары бойынша белді баспа болды.

Мұрат Тәжі-Мұратұлы бірнеше жыл бойы республика Ғылым академиясының «Мемлекет, демократия және құқық дамуының заңдылықтары» атты проблемалық және үйлестіру Ғылыми кеңесін, республикалық «Білім» қоғамының құқықтық білімдер секциясын, ғылым мен техника саласындағы ҚазССР мемлекеттік сыйлықтары жөніндегі Комитет мүшесі болды.

1976 жылдан бері Қазақтың саяси ғылымдар ассоциясының төрағасы Мұрат Тәжі-Мұратұлы айналасындағыларға шексіз адалдығымен және жұмысқа бар ынта-жігерімен құлай берілгендігімен ерекшелінетін басшылар қатарына жатады, кез-келген ұжымдық істе өзіне ауыр жүкті артуға ұмтылып тұратын қарапайым қасиетінің өзі даңғаза «әкімқұмарлықтың» қарама-қарсы көрінісі екендігін дәлелдесе керек.

Академик М. Т. Баймаханов ғылым мен білімнің халықаралық дәрежеде жаһандануға байланысты Қазақстан заң ғылымының беделді өкілі ретінде әр жылдары ғалымдар, судьялардың, лекторлардың құрамында ГДР, Польша, Ұлыбритания, Мексика, Жапония, Швейцария, АҚШ, Франция, Болгария, Тайланд, т.б елдерде болды.

Мұрат Тәжі-Мұратұлы демократ-заңгерлердің Халықаралық ассоциа-сының (Алжир, 1975), XI (Мәскеу, 1979), XII (Рио-де Жанейро, 1982), XIII (Париж,1985), XIV (Вашингтон, 1989) конгрестеріне саяси ғылымдардың Халықаралық ассоциасының мәслихатына, сондай-ақ, басқа да көптеген бұрынғы Бүкілодақтық және Ынтымақтастық елдерінің ғылыми конференцияларына, соның ішінде қоғамдық ғылымдардың методологиялық мәселелері жөніндегі Бүкілодақтық ғылыми конференцияға (Мәскеу, 1977) қатысып, баяндамалар мен хабарламалар жасады. Осы үлкен мәслихаттарға қатысушылар пікірлеріне қарағанда, бағдармалық сипатта болған М. Т. Баймахановтың сөздеріне ғана емес, оларды хабарлаудың өзі баяндамашының ғылыми атақ-дәрежесінің жоғары болып, есімі кеңінен белгілі болғандығын айқындайды. Ғалымның педагогика майданындағы қызметі де сондайлық сәтті болды, ол көптеген жылдар бойы Қазақ мемлекеттік университетінің заң факультетінде мемлекет және құқық теориясы туралы дәрістер оқыды.

Ғылыми және қоғамдық қызметте сіңірген еңбегі және заң ғылымын дамытудағы үлкен үлесі үшін Мұрат Тәжі-Мұратұлы Баймаханов «Парасат» орденімен, бірнеше медальдермен, Жоғарғы Кеңестің үш құрмет грамо-таларымен марапатталды, Шоқан Уәлиханов және Ахмет Байтұрсынов атындағы сыйлықтарының иегері болып табылады.

Академик Мұрат Тәжі-Мұратұлы Баймаханов Қазақстан тарихында өз орны бар ардагер азамат. Ел өмірінің негізгі саласының бірі – ғылым мен оқу, білімін өркендетуге елеулі үлес қосып келе жатқан білікті маман ретінде ел құрметіне бөленіп келеді. Ол өзінің мерейтойын шығармашылық күш-қуаты кемелденген, әлі де жүзеге асыратын мол ойлар мен идеяларға толы кезінде қарсы алуда.

Бұл күндері Мұрат Тәжі-Мұратұлы 85 жасқа толған мерейтойын салиқалы тірлігі, салмақты болмысымен, шығармашылық күш-қуаты мол ойлар мен идеяларға толы шағында қарсы алуы бәрімізді қуантады.

Раушанбек Әбсаттаров*, ҚР ҰҒА-ның корреспондент-мүшесі,*
философия ғылымдарының докторы, профессор;
Әміржан Шалтыков*, саяси ғылымдарының докторы, профессор*

Доктору юридических наук, профессору,
академику Национальной академии наук РК

БАЙМАХАНОВУ
Мурату Таджи-Муратовичу

85 лет

Уважаемый Мурат Таджи-Муратович!

Президиум Национальной академии наук Республики Казахстан искренне и сердечно поздравляет Вас со славным юбилеем – 85-летием со дня рождения!

Ваше имя как видного ученого, талантливого руководителя, организатора науки, человека высокой эрудиции, много сделавшего для развития юридической науки, широко известно не только в нашей стране.

Где бы Вы ни работали – замдиректором Института философии и права АН КазССР, заведующим отделом государственного права и советского строительства, общей теории и права; директором Института философии и права АН Казахской ССР; председателем Конституционного Суда Республики Казахстан; проректором по научной работе университета "Кайнар"; проректором Высшей школы права "Әділет" – Вы всегда стояли на позиции защиты прав и свобод казахстанцев. Ваши наиболее крупные достижения, а именно комплексная разработка проблем противоречий в развитии правовой надстройки при социализме, а также исследование вопроса о становлении правового государства и конституционном процессе в РК оставят неизгладимый след в истории нашего государства.

Результаты Ваших научных исследований опубликованы в более чем 300 работах, которые являются практическим руководством не только для юристов, но и общественных и государственных деятелей нашей страны.

Уважаемый Мурат Таджи-Муратович! В день Вашего славного юбилея желаем Вам крепкого здоровья и счастья, всего наилучшего Вашим родным и близким, благополучия, энергии и сил на долгие годы!

Президиум НАН РК

Доктору физико-математических наук, профессору,
академику Национальной академии наук РК

ХАРИНУ
Станиславу Николаевичу

80 лет

Уважаемый Станислав Николаевич!

Президиум Национальной академии наук Республики Казахстан искренне и сердечно поздравляет Вас со славным юбилеем – 80-летием со дня рождения!

Ваше имя – видного ученого, талантливого руководителя, организатора науки, человека высокой эрудиции, много сделавшего для развития физико-математической науки, широко известно не только нашей страны.

Где бы Вы ни работали – замдиректора в Институте математики АН Казахстана, академиком-секретарем Отделения физ.-мат. наук и член Президиума Национальной Академии наук Казахстана, сопредседателем Комитета по научно-техническому сотрудничеству между Республикой Казахстан и Исламской Республикой Пакистан, заместителем председателя Отделения физики, математики и информатики НАН РК, профессором Казахстанско-Британского технического университета – Вы отдавали все силы, знания и энергию любимому делу.

Ваши наиболее крупные достижения в области математического моделирования теплофизических и электромагнитных явлений навсегда оставят яркий след в науке.

Результаты Ваших научных исследований опубликованы в более чем 300 работах, к ним обращаются Ваши ученики и последователи, которые трудятся не только в нашей стране.

Уважаемый Станислав Николаевич! В день Вашего славного юбилея желаем Вам крепкого здоровья и счастья, всего наилучшего Вашим родным и близким, благополучия, энергии и сил на долгие годы!

Президиум НАН РК

70 лет члену-корреспонденту Национальной академии наук Республики Казахстан А. М. ОМБАЕВУ

Омбаев Абдирахман Молданазарұлы родился 1 января 1949 года в ауле Кара-Коныр (ныне им. Шамши Калдаякова) Отырарского района Туркестанской области.

Абдирахман Молданазарұлы – доктор сельскохозяйственных наук (1991), профессор (1994), «Қазақстанның еңбек сіңірген қызметкері» (1996), Лауреат Государственной премии Республики Казахстан в области науки, техники и образования (2005), Иностранный член Российской академии наук Отделения сельскохозяйственных наук – Секция зоотехнии и ветеринарии (2007), кавалер ордена «Құрмет» (2008), «Заслуженный работник сельского хозяйства Монголии» (2010), действительный член-академик Монгольской академии сельскохозяйственных наук (2013), «Заслуженный изобретатель Республики Казахстан» (2014), член-корреспондент Национальной академии наук Республики Казахстан (2017).

Международным библиографическим центром (г. Кембридж, Великобритания) его фамилия включена в список выдающихся ученых мира 2008 года с награждением Золотой медалью отличия за вклад в усиление совместной программы Консультативной группы Международных сельскохозяйственных исследований для Центральной Азии и Южного Кавказа, награжден медалью Международного научного центра ИКАРДА (2011), Американским библиографическим центром награжден дипломом Альберта Энштейна.

После окончания Алма-Атинского ордена Трудового Красного знамени зооветеринарного нститута в 1971 году Абдирахман Молданазарұлы Омбаев начал трудовую деятельность с должности старшего лаборанта отдела селекции и генетики черных каракульских овец Казахского НИИ каракулеводства (город Чимкент).

С 1973 года по 1976 год – аспирант Всесоюзного НИИ животноводства (г. Москва). С 1976 года по 1991 год – младший научный сотрудник, старший научный сотрудник, заведующий лабораторией промышленного производства каракульчи – баранины и молока, заместитель директора по науке КазНИИ каракулеводства.

С 1992 года по 1994 год – глава Сузакской районной администрации Южно-Казахстанской области. С 1994 год по 2017 год – директор Казахского НИИ каракулеводства, генеральный директор РГП «Юго-Западный научно-производственный центр сельского хозяйства», генеральный директор ТОО «Юго-Западный НИИ сельского хозяйства», генеральный директор ТОО «Юго-Западный НИИ животноводства и растениеводства», генеральный директор ТОО «Казахский НИИИ животноводства и кормопроизводства».

А. М. Омбаев – автор 422 научных трудов, в том числе 4 монографий. 14 его книг опубликованы в ведущих отечественных и зарубежных научных журналах и изданиях и стали достоянием мировой научной общественности. В этих трудах нашли отражение инновационные и технологически разработки по овцеводству, верблюдоводству, молочному и мясному скотоводству, коневодству. Имеет 57 авторских свидетельства на изобретения и патенты. Является автором Алимтауского заводского типа каракульских овец каракалпакского сура расцветки «шамшырак» (1995), Баиркумского заводского типа каракульских овец окраски сур бухарский серебристой расцветки (1995), Тартугайского заводского типа каракульских овец сурхандарьинского сура бронзовой расцветки (1996), Сузакского заводского типа каракульских овец черной окраски жакетного типа (1997), Отрарского внутрипородного типа каракульских овец белой окраски (2007), Тастинского внутрипородного типа каракульских овец черной окраски каракульчового типа (2011), Кумкентского заводского типа каракульских овец серой окраски, голубой расцветки (2011), Ордабасинской курдючно-мясо-сальной породы овец (2013), Бадамского внутрипородного типа Ордабасинской породы (2017), способа получения белой каракульчи (1988), способа кормления овец (1992), способа откорма овцематок (1992), способа отбора высокопродуктивных верблюдов мясного направления (2005), способа подсчета волосяных фолликулов у ягнят смушкого порода (2009). Принимал участие в создании и распространении новой атырауской породы курдючных овец смушково-мясо-сальной продуктивности (1998).

Большое внимание А.М. Омбаев уделял и уделяет подготовке научных кадров. Под его научным руководством защищены 9 докторских и 28 кандидатских диссертаций.

А.М. Омбаев принадлежит к числу видных научных и общественных деятелей Казахстана, которые внесли весомый вклад в становление продовольственной безопасности Республики Казахстан за более 25 летнюю историю независимости. Следует отметить участие Абдирахмана Омбаева в работе редакционной коллегии журналов «Аграрная наука» (г. Москва), «Зоотехния» (г. Москва), Доклады Национальной академии наук Республики Казахстан (г. Алматы), Известия Национальной академии наук Республики Казахстан: Серия аграрных наук (г. Алматы), «Вестник Киргизского Национального аграрного университета» (г. Бишкек).

Сердечно поздравляем Абдирахман Молданазарұлы с юбилеем, желаем ему крепкого здоровья, бодрости, благополучия и многих лет творческой работы во славу науки.

Президиум НАН РК

Доктору медицинских наук, профессору,
члену-корреспонденту Национальной академии наук РК, Президенту
Казахстанской Ассоциации репродуктивной медицины, директору
Международного центра клинической репродуктологии «PERSONA»,
Отличнику здравоохранения Республики Казахстан,
члену редакционной коллегии журналов
«Известия НАН РК. Серия биологическая и медицинская»,
«Доклады Национальной академии наук Республики Казахстан»

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60 лет

Уважаемый Вячеслав Нотанович!

Президиум Национальной академии наук Республики Казахстан искренне и сердечно поздравляет Вас со славным юбилеем – 60-летием со дня рождения!

Мы хорошо знаем Вас как видного ученого, талантливого руководителя, организатора науки, человека высокой эрудиции, много сделавшего для развития медицинской науки, в том числе и репродуктивной медицины не только нашей страны, но и в мире.

Вы являетесь первым в нашей стране, кто на деле сумел предоставить людям помощь в обретении счастья материнства, семьи, за что Вам бесконечно благодарны Ваши многочисленные пациенты и их дети. Центр клинической репродуктологии «PERSONA», который Вы возглавляете, является центром, где проводятся уникальные операции с удивительными результатами.

При всей Вашей занятости необходимо отметить большую общественную работу, которой Вы занимаетесь как член редколлегии ряда медицинских журналов в России и в Казахстане, Президент Ассоциации представительств фармацевтических фирм в РК; Президент Казахстанской ассоциации репродуктивной медицины; Президент Ежегодного Международного конгресса Казахстанской ассоциации репродуктивной медицины.

Результаты Ваших научных исследований опубликованы в более чем 200 работах, 5 методических рекомендациях, Вам принадлежат более 10 изобретений и патентов в области репродуктивной медицины. Вами подготовлены 4 кандидата и 1 доктор медицинских наук, Вы создали в Казахстане школу практических врачей, работающих в области репродуктивной медицины.

Под Вашим руководством реализовано немало новаторских дел. Ваша высокая внутренняя культура, профессионализм, широта научных интересов, демократизм, гуманное отношение к коллегам будут служить примером для каждого, кто знает Вас.

Уважаемый Вячеслав Нотанович! В день Вашего славного юбилея желаем Вам крепкого здоровья и счастья, всего наилучшего Вашим родным и близким, благополучия и творческого долголетия, энергии и сил на долгие годы!

Президиум НАН РК

КРАТКИЙ ОЧЕРК НАУЧНОЙ, ПЕДАГОГИЧЕСКОЙ И ОБЩЕСТВЕННОЙ ДЕЯТЕЛЬНОСТИ АКАДЕМИКА НАЦИОНАЛЬНОЙ АКАДЕМИИ НАУК РЕСПУБЛИКИ КАЗАХСТАН А. Н. ИЛЯЛЕТДИНОВА

В январе 2019 г. исполняется 90 лет со дня рождения и 55 лет научной и общественной деятельности академика Национальной академии наук РК, доктора биологических наук, профессора, заслуженного деятеля науки РК, крупного ученого-микробиолога Альфарида Низамовича Илялетдинова.

А. Н. Илялетдинов родился 16 января 1929 г. на станции Беш-Арык Яныкурганского района Кзыл-Ординской области в семье учителя.

В 1946 г. после окончания средней школы он поступил на биологический факультет Московского государственного университета им. М.В. Ломоносова, который с отличием закончил в 1951 г. По окончании МГУ А.Н. Илялетдинов был оставлен в аспирантуре при кафедре микробиологии, которую успешно закончил под руководством академика В.Н. Шапошникова в 1954 г. с защитой кандидатской диссертации. В 1954–1958 гг. работал в Институте почвоведения АН КазССР сначала младшим, затем старшим научным сотрудником. В 1958 г. А.Н. Илялетдинов избирался по конкурсу на должность руководителя лаборатории общей микробиологии, затем лаборатории экологии микроорганизмов Института микробиологии и вирусологии АН КазССР. В 1966 г. А.Н. Илялетдинов защитил диссертацию на соискание ученой степени доктора биологических наук, с этого года до 1995 года работал директором Института микробиологии и вирусологии АН КазССР.

Илялетдинов А.Н. успешно совмещал работу в Институте с преподавательской деятельностью в Казахском Национальном Аграрном университете МОН РК.

В 1968 г. А.Н. Илялетдинову было присвоено звание профессора, а в 1970 г. он был избран членом-корреспондентом АН КазССР. В 1971 г. ему было присвоено звание заслуженного деятеля науки КазССР. В 1983 г. А.Н. Илялетдинов был избран академиком АН КазССР, академиком-секретарем Отделения биологических наук и членом президиума АН КазССР. Многолетняя плодотворная научная, педагогическая и общественная деятельность А.Н. Илялетдинова, его заслуги в развитии биологической науки и подготовке кадров, были отмечены наградами – Почетной грамотой Президиума Верховного Совета Казахской ССР (1979), орденом "Знак почета" (1981) и медалью "Астана" (1998).

Основные направления научных исследований А.Н. Илялетдинова были сосредоточены на разработке следующих научных тематик: роль микроорганизмов в круговороте органических и минеральных веществ в природе; использование деятельности микроорганизмов в кормопроизводстве, экология микроорганизмов.

Им опубликовано 220 научных работ, в том числе 4 монографии, получено 28 авторских свидетельств СССР и патентов РК.

Опубликованные в 60-х гг. статьи и монография «Биологическая мобилизация минеральных соединений» (1966) посвящены выяснению роли микроорганизмов в формировании плодородия почв, накоплении растворимого, доступного для растений фосфора в почве. А.Н. Илялетдинов одним из первых советских почвенных микробиологов выступил против идеи использования чистых культур микроорганизмов в качестве основы землеудобрительных препаратов и развил положение о необходимости создания благоприятных условий для жизнедеятельности спонтанной микрофлоры почвы, минерализующей органические вещества и, таким образом, в формировании почвенного плодородия.

В монографии «Микробиологические превращения азотсодержащих соединений в почве» (1976) освещено современное состояние вопроса об основных процессах трансформации азота (аммонификация, нитрификация, иммобилизация, денитрификация) в почве. На основе экспериментальных работ А.Н. Илялетдинов установил, что путем замедления темпов процессов минерализации органического вещества и иммобилизации азота можно сохранить от потерь значительные количества почвенного углерода и азота. Разработанный на основе этого положения способ допосевного затопления рисового поля обеспечил повышение урожая риса в среднем на 20%. В 1988 г. эта книга была переиздана на английском языке в Московском издательстве «Наука».

Под руководством А.Н. Илялетдинова в Казахстане успешное развитие получила геологическая микробиология. А.Н. Илялетдиновым и его учениками были разработаны способы бактериального выщелачивания меди, цинка, свинца из руд и мышьяка из золотосодержащих концентратов. Практическая реализация этих исследований имела важное народнохозяйственное значение.

В 70-е гг. А.Н. Илялетдинов развил новое направление – использование деятельности микроорганизмов для очистки промышленных сточных вод от ионов тяжелых металлов и цианидов, а также от таких органических загрязнителей как α-метилстирол и кротоновый альдегид в стоках предприятий по производству синтетического каучука. В рамках данного направления были разработаны эффективные биотехнологические методы очистки промышленных стоков от различных токсических веществ, которые использовались предприятиями нефтяной и химической промышленности, а также цветной металлургии, в технологическом процессе. Данное направление разрабатывалось в комплексе с исследованиями, проводимыми в странах – членах СЭВ.

А.Н. Илялетдинов с сотрудниками исследовал механизмы окисления переменно-валентных элементов гетеротрофными микроорганизмами. Подробно изучена группа арсенитокисляющих бактерий, установлена решающая роль гидроперекисей ненасыщенных жирных кислот в окислении переменно-валентных элементов. Открыты новые свойства факультативно-анаэробных бактерий, способных последовательно восстанавливать несколько акцепторов электронов (кислород, нитраты, пятивалентный мышьяк, трехвалентное железо, сульфаты). Результаты этих работ, которые представляют большой интерес для фундаментальной микробиологии, обобщены в монографии «Микробиологические превращения металлов» (1984).

Под руководством А.Н. Илялетдинова проводились исследования по созданию и внедрению в практику новых биоконсервантов растительных кормов и технологии их производства, а также способов выращивания кормовых дрожжей в условиях животноводческих хозяйств, что позволило существенно улучшить качество кормов и повысить продуктивность сельскохозяйственных животных. Данные исследования получили признание не только в нашей стране, но и за рубежом (Чехословакия, Монголия, Венгрия, Китай и др.). Производство биоконсерванта «Казахсил» было организовано на предприятиях микробиологической промышленности: Киевский завод бактериальных препаратов, Степногорский завод «Прогресс», Вышневолоцкий завод ферментных препаратов, Бердский химический завод, Туркестанский завод кормовых антибиотиков. Препарат нашел широкое применение в кормопроизводстве Казахстана, России, Киргизии. Была разработана прогрессивная технология производства микробиологического препарата для силосования соломы на основе смеси целлюлозолитических и молочнокислых бактерий, созданы кормовые добавки бентобак и бактоцеолит на основе пропионовокислых и целлюлозолитических бактерий и доказана их высокая эффективность на цыплятах, телятах и поросятах. Сформулированные Илелетдиновым А.Н. направления исследований развиваются и в настоящее время его учениками для создания бактериальных препаратов для сельского хозяйства и охраны окружающей среды.

Много сил и внимания А.Н. Илялетдинов уделял подготовке научных кадров. Долгие годы А.Н. Илялетдинов возглавлял специализированный совет по защите кандидатских и докторских диссертаций, был главным редактором журнала «Известия АН Каз.ССР», сер. биологическая, являлся членом редакционного совета журналов «Вестник НАН РК» и «Микробиология» (Москва).

Под руководством А. Н. Илялетдинова защищено 39 кандидатских диссертаций и 13 докторских диссертаций, подготовлены десятки дипломных работ, его ученики успешно трудятся в ведущих научных и педагогических центрах Казахстана.

Альфарид Низамович всегда оставался человеком высокой интеллигентности и тактичности, который одинаково чутко относился и к лаборанту и к маститому ученому. Как директор института А.Н. Илялетдинов стремился создать творческую атмосферу в коллективе, старался поддержать любое новое направление, помочь каждому специалисту. При этом он оставался требовательным и бескомпромиссным ученым, мнение которого всегда было крайне авторитетным.

Высокая эрудиция, принципиальность, доброжелательное отношение к людям снискали академику НАН РК А.Н. Илялетдинову заслуженное уважение в научном мире.

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