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DIRECTIONS OF EFFECTIVE DEVELOPMENT OF THE INDUSTRY OF CONSTRUCTION MATERIALS OF THE REPUBLIC OF KARAKALPAKSTAN

Abstract: *The building materials industry occupies a key position in the investment and construction process of the Republic of Karakalpakstan. Currently, one of the main directions of the effective development of this industry is to ensure the sustainable development of the industry, which will increase the competitiveness of building materials enterprises and activate the investment process. The article proposes the creation of an industry cluster to ensure the sustainable development of enterprises in the building materials industry.*

Key words: *production of building materials, investment and construction activities, sustainable development, enterprises of the building materials industry, production cluster.*

Language: *English*

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Introduction

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The building materials industry, being an integral part of the material and technical base of capital construction, has achieved significant successes over the years of independence, which have become the basis for the effective implementation of investment and construction programs, which made it possible to solve pressing socio-economic problems.

In the “Strategy of Action on the Five Priority Directions of the Development of the Republic of Uzbekistan in 2017 - 2021”, one of the priority directions is “development and liberalization of the economy aimed at further strengthening macroeconomic stability.” and here the issue under consideration is in line with these priorities.

It should be noted that in the microeconomic context, the sustainable development of enterprises and organizations is expressed in the desire to limit the likelihood of their bankruptcy by improving the internal environment and anticipating and / or adapting to changes in external and internal environmental factors.

The Republic of Karakalpakistan has significant differences and it is distinguished not only by geographic and climatic conditions, but also by development prospects, the current level of social and economic development, and other factors. In this region, ensuring the effectiveness of investment and construction activities, increasing investment attractiveness, ensuring construction with effective building materials is relevant like in no other region of Uzbekistan. In the context of modernization and innovative development of the regional economy, the role of the industry in question from the standpoint of influence on the acceleration of innovative processes in the region is growing. In modern conditions, it should not only be ahead of the dynamics of the development of construction volumes, but also in many respects should be a “locomotive of innovative activity” for capital construction [4]

LITERATURE ANALYSIS: The theoretical foundations, economic essence and scientific aspects of the economic potential of industrial enterprises have been studied by such foreign scientists and economists as Ansoff I., Drucker P.F., Kaplan R.,

Copeland T., Koller T., Murrin J., Norton D., Sun Tzu and others

The problem of increasing economic sustainability and the growth potential of industrial enterprises in the Commonwealth of Independent States was studied by such scientists as Arkhipov V.M., Zhoglina E.V., Kleiner GB, Kovalev VV, Marushkov RV, Raizberg B.A., Sosnenko L.S., Bryantseva I.V., Prykin B.V., Biryukov G.Kh., Damaev D.V., Kolosova T.V. et al.

Problems of increasing the economic efficiency of the investment and construction complex of Uzbekistan and its material and technical base are reflected in the works of such scientists of the republic as Khikmatov A.M., Zainutdinov Sh. N., Nurimbetov R.I., Ziyaev MK, Davletov I .Kh., Kalmetov B.D., Kazimov V.A., Niyazov S.M., Suyunov A., Makhmudov E.Kh.,, Kurbaniyazov Sh.K. and many others.

Nevertheless, in modern conditions, new approaches are needed to intensify investment and construction activities of industries and industries that are part of the construction industry, which is due to the deepening of market relations, acceleration of innovation processes, strengthening of the competitive environment and the need for resource and energy conservation, ensuring the preservation of the environment [5,6 ,8]

RESEARCH METHODS.: The methods used are logical and modeling, statistical and comparative analysis, a systematic approach.

ANALYSIS AND RESEARCH RESULTS: The balanced and effective socio-economic development of Karakalpakstan requires, in modern conditions, the building materials industry to maximize the use of all types of resources and significantly increase production efficiency with a noticeable improvement in product quality. Ensuring these requirements determines the need for a comprehensive consideration of factors affecting the development efficiency of the industry. In the socio-economic development of the region, regional features play a priority role, which clearly distinguish the Republic of Karakalpakstan from other regions of Uzbekistan.

Analyzing the dynamics of construction volumes in the studied region, one can note the presence of a steady growth trend in the volume of construction work (Table 1), when the average annual increase in the volume of work amounted to more than 27% from 2014 to 2018 and there is a fairly wide amplitude of fluctuation.

Table 1. The dynamics of the main investment indicators and construction activities of the Republic of Karakalpakstan for 2014-2018 (actual prices, billion soums)

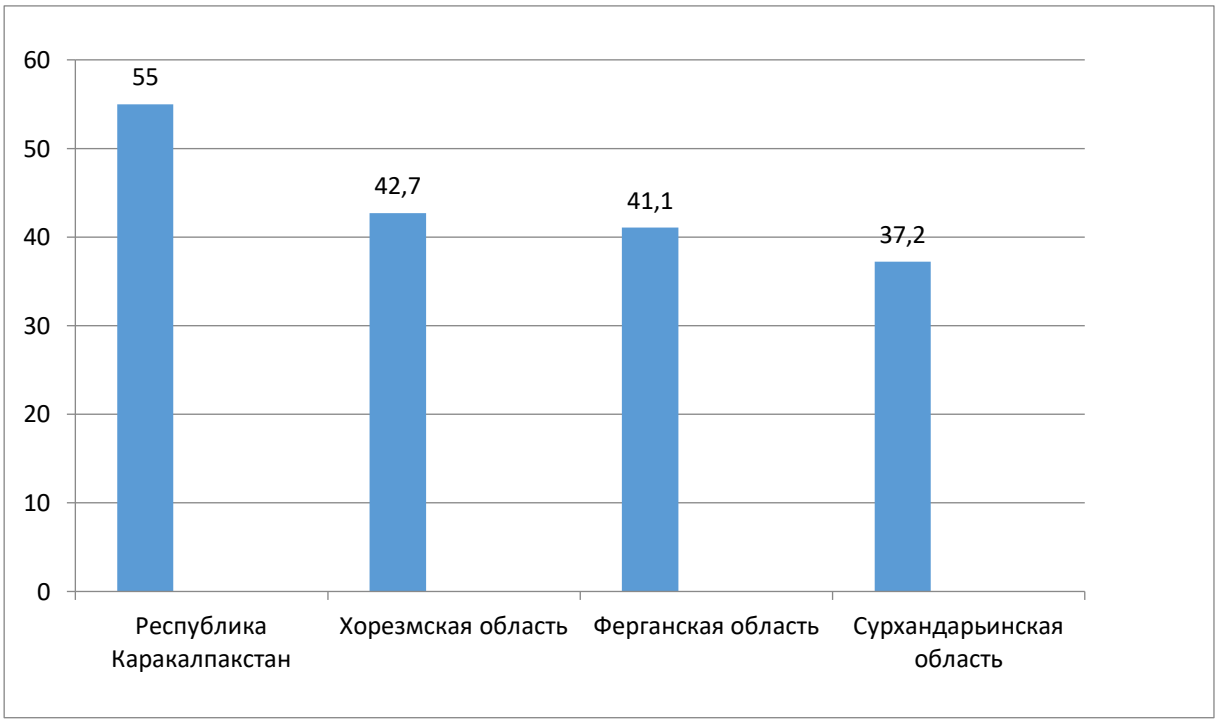
Indicators	***2014y.***	***2015 y.***	***2016 y.***	***2017 y.***	***2018 y.***	***Grow-th for 2014-2018***
1. The introduction of fixed assets	*3 990,6*	*6 021,2*	*3 778,3*	*2 822,0*	*6 757,8*	*1,69*
including production purpose	*2 789,8*	*4 730,4*	*2 389,8*	*1 098,3*	*6 445,8*	*2,30*
2. Construction work	*1 053,5*	*1 219,3*	*1 171,8*	*1 398,8*	*2 193,0*	*2,08*

Note that the studied region in 2018, along with the Navoi and Namangan regions, became one of the "leaders" in the growth of investment in fixed assets in the country: the growth rate of this indicator in Karakalpakstan was 3.38 times higher than the national average (tab. . 2).

Table 2. The growth rate of investment in fixed assets in Uzbekistan and a number of regions in 2018

Regions	***% Growth over the previous year***
Uzbekistan as a whole	*118,4*
Republic of Karakalpakstan	*162,2*
Navoi region	*184,6*
Namangan region	*171,2*

Of course, a positive fact is that the region has a large share of investments allocated for reconstruction and technical re-equipment (Fig. 1). This is an indirect confirmation of the innovative development of the economy of the Republic of Karakalpakstan.



1-Figure. The share of investments allocated for reconstruction and technical re-equipment in 2018 in a number of regions of Uzbekistan (in%)

Such rates of investment and construction activities require adequate development of the region's building materials industry. Analysis of the development of industrial and building materials industries of the Republic of Karakalpakstan for 2014-2018 (Table 3) shows that the industrial production growth rate is unstable, the share of industrial building materials production has significant fluctuations. Over the period under review, the total number of industrial enterprises grew by 43%, and enterprises for the production of building materials at a faster pace and grew by 72.7%. It should be noted that if in 2014 the average number of employees in one enterprise was 16.6 people, then in 2018 it amounted to 14.4 people.

Table 3. The dynamics of a number of key indicators of the industry and industrial industry of building materials of the Republic of Karakalpakstan

Indicators	***2014 y.***	***2015 y.***	***2016 y.***	***2017 y.***	***2018 y.***	***Growth for the entire period***
The growth rate of industrial production (in%)	*101,2*	*103,4*	*89,7*	*88,6*	*142,8*	-
The specific weight of PSM products in the total industry (%)	*9,2*	*7,0*	*3,6*	*1,1*	*4,3*	-
The number of enterprises in industry	*1265*	*1409*	*1201*	*1445*	*1796*	*1,43*
The number of enterprises in PSM	*143*	*172*	*161*	*180*	*247*	*1,73*
The volume of output of the building materials industry (billion soums)	*157,4*	*130,8*	*103,4*	*196,1*	*421,7*	*2,67*
Number of employees (people)	*2379*	*2520*	*2383*	*2825*	*3551*	*1,49*
Profit (billion soums)	*18,7*	*20,5*	*26,2*	*-50,8*	*60,3*	*3,2*

It should also be noted that, based on the growth of production volumes, industry productivity increased over the reporting period from 65.99 million soums to 118.8 million soums per employee per year.

Assessing the output of the main products by industry (Table 4), one can note the presence of a fairly steady increase in the production of wall materials and soft roofing materials. An unconditional achievement for the industry is the start of production of a strategic material for construction - cement: for the first time in Karakalpakstan in 2017-2018 over 190 thousand tons were produced. This is an unconditional achievement.

Table 4. The dynamics of production of building materials industry of the Republic of Karakalpakstan

The name of indicators	***2014 г.***	***2015 г.***	***2016 г.***	***2017 г.***	***2018 г.***
Production of precast concrete products (cubic meters)	*288 654,0*	*129 348,6*	*92 850,7*	*178 256,0*	*224 579,2*
Wall materials (thousand pieces)	*70 491,5*	*67 914,0*	*65 135,9*	*77 601,6*	*101 555,2*
Soft roofing materials (thousand m2)	*215,5*	*210,0*	*411,8*	*328,7*	*434,1*
Cement, thousand tons	-	-	-	*48,0*	*142,5*

Data on the dynamics of the development of fixed assets and investments in the building materials industry (Table 5) show that the industry is given serious attention, but nevertheless, according to experts, the industry in question is not distinguished by the use of high and modern technologies.

Table 5. Dynamics of development of fixed assets and investments in the construction materials industry of the Republic of Kazakhstan (billion soums)

Indicators	*2014 y.*	*2015 y.*	*2016 y.*	*2017 y.*	*2018 y.*
Commissioning of new fixed assets	*37,0*	*16,3*	*18,1*	*92,4*	*265,4*
Investment in fixed assets PSM (total)	*32,4*	*19,4*	*60,1*	*100,2*	*442,3*

One of the features of this industry is that most of its enterprises are located mainly in the southern regions of the republic. This is especially pronounced in the production of reinforced concrete products.

Thus, the analysis shows that the industry is influenced by a number of objective and subjective factors, including:

- ❖ *steady growth in capital construction;*
- ❖ *he presence of significant fluctuations in the annual volume of construction work;*
- ❖ *remoteness from industrial centers of the country;*
- ❖ *insufficiently complete range of types of local raw materials for the production of building materials;*
- ❖ *the availability of local raw materials for the production of building materials;*
- ❖ *insufficient use of industrial and agricultural waste for the production of building materials, which also affects the complication of the environmental situation.*

It should also be noted that the presence in Karakalpakstan of a steady growth in capital construction, which, due to the need to implement the State program to bring the level of urbanization in the country to 60 percent by 2030 [3], as well as with the continuation of development of deposits with a high probability, should save.

We emphasize that in modern conditions in the Republic of Karakalpakstan two challenges are influenced by construction and the industry under study:

-the need for construction in undeveloped territories in connection with the development of new gas and other mineral deposits (a striking example is the Surgilsky gas chemical complex on the Ustyurt plateau). Currently, the share of these facilities in the state construction program reaches up to 24%.

-the need for accelerated urban construction, provided for by the State program on urbanization.

This is certainly reflected and will affect the activities of construction organizations and enterprises of the building materials industry.

It should be noted that under the conditions of Karakalpakstan, the possibility of maneuver during periods of relative decline in demand for both construction companies and enterprises producing construction materials is very difficult due to the remoteness of the region from other areas. In other regions of the country, for example, in areas located in the Ferghana Valley, there is a wide possibility of maneuver due to the proximity of areas, relatively short distances. Under these conditions, sharp changes in the volume of construction are not so negatively reflected in the activities of these enterprises, since it is possible to reduce power losses in adverse periods due to construction projects in the nearest areas.

The region under study has a number of other features that affect both the development of the economy and construction, as well as the building materials industry. It is known that this industry is a service industry in relation to construction and its main task is to provide construction objects with construction materials in sufficient volume and required quality.

Summarizing the analysis, we will conduct a SWOT analysis of the building materials industry of the Republic of Karakalpakstan (Table 6).

Table 6. SWOT analysis of the building materials industry of the Republic of Karakalpakstan from the standpoint of achieving sustainable development in a strategic plan

Strengths	*Weaknesses*
▪ *low cost of labor;* ▪ *the presence of an educational base to strengthen human resources;*	▪ *narrow production line (product range);* ▪ *significant annual fluctuations in capacity utilization* ▪ *lack of financial resources (working capital and basic for the implementation of strategic initiatives)*

▪ *a positive trend in the growth of construction volumes;* ▪ *the ubiquity of a number of types of local raw materials;* ▪ *state support in the intensification of production.*	▪ *low profitability of production activities due to poor organization of supply and maintenance of machines and mechanisms;* ▪ *high production costs due to instability of orders;* ▪ *low competitiveness of products;* ▪ *a high degree of depreciation of fixed assets;* ▪ *in general, a rather limited range of raw materials of the local raw material base;* ▪ *low innovation activity of enterprises*
Opportunities	***Threats***
▪ *increase in volumes* ▪ *production and expansion of the product range;* ▪ *increasing the level of competitiveness of products, including by reducing production costs;* ▪ *strengthening the production and technical base of the enterprise and improving the technical equipment of production;* ▪ *improving the qualifications of employees*	▪ *reducing the investment attractiveness of the region and reducing orders for production;* ▪ *uneven distribution of industry enterprises;* ▪ *phasing out production;* ▪ *the emergence of new competitors;* ▪ *decrease in the level of product quality;* ▪ *creating a negative social position*

A SWOT analysis of the building materials industry in Karakalpakstan indicates that the current state of the organizational and economic potential of the building materials industry enterprises are: a narrow range and low quality of products, underutilization of production capacities, insufficiently high qualification of workers, insufficient use of the local mineral resource base, low innovative activity of enterprises.

All of the above affects the decline in the investment attractiveness of the region. Of course, in solving this problem, a large role belongs to the construction materials industry of the Republic of Karakalpakstan., Whose capabilities are currently quite limited and not fully implemented.

Thus, currently there is an urgent problem of effective provision of the region with building materials. In [10], considering the development paths of the construction industry of Uzbekistan, the need for innovative development of the industry is noted and, along with other activities, it is proposed to pay attention to the enlargement of enterprises in the industry, and the application of a cluster approach.

The development of domestic scientists in the field of the use of local raw materials and production wastes for the production of building materials is noteworthy. For example, studies reflected in [6,7].

World practice shows that to ensure sustainable development in modern conditions, it is necessary to intensify innovation and the creation of industry or regional clusters [12] are effective ways to achieve high end results. Moreover, in innovative activities, we propose to apply progressive project management methods [11].

That is why one of the most important recommendations for ensuring the sustainable development of the industry is the creation of an innovative production multi-level cluster. the structure of the industry innovation cluster and the distribution of the main management functions of the industry cluster are presented in table. 7.

Table 7. The structure of the industry innovation cluster and the distribution of basic management functions

Level	***The composition of formations (elements) and their most important functions,***
highest category	*Ministry of Construction of the Republic of Karakalpakstan* *1. Development of a strategy for innovative development of the industry* *2. Management of the implementation of the strategy for innovative development of the industry*
second category	*Ministry of Construction of the Republic of Kazakhstan and educational institutions* *1. Identification of areas of innovative development of the industry* *2. Improving human capital in the industry*
third category	*Higher education institutions and major design organizations*

	1. Development of domestic innovations *2. Assessment of the acceptability of foreign innovations to local conditions* *3. Formation and maintenance of an industry portfolio of innovations* *4. Development of recommendations for increasing the potential of enterprises and the industry as a whole*
Fourth level	*Industry enterprises* *1. Ensuring an effective process of innovative development in the field*

Unconditionally consolidated joint activity of all cluster members indicated in Table. 7, will ensure the desired synergistic effect and significantly increase the investment attractiveness of such a promising region, which is the Republic of Karakalpakstan.

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PROSPECTS FOR THE INTRODUCTION OF INNOVATIVE CLUSTER METHODS IN TEACHING COMPUTER SCIENCE IN THE GENERAL SECONDARY EDUCATION SYSTEM OF TASHKENT REGION

Abstract: *The article provides that the provision of potential staff related to improving the quality of teaching in the system of general secondary education can be achieved through the formation of partnerships between the relevant facilities in the joint to provide teaching and methodological resources related to the disciplines. Ways to further develop pedagogical cooperation through the introduction of modern innovative models in the system to implement these reforms are described.*

In addition, the Chirchik State Pedagogical Institute of Tashkent region is working to create an innovative cluster of pedagogical education in the regional general secondary education system in order to study and analyze the existing shortcomings in the education system of Tashkent region and to integrate and develop the system to address these problems. The model distributes specialists in general education subjects taught in general secondary schools, including the prospects for the development of the subject "Informatics and Information Technology" in the region.

Prospects for the introduction of innovative cluster methods in teaching computer science in the general secondary education system of Tashkent region

Key words: *education, computer science, Informatics.*

Language: *English*

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Introduction

The general secondary education system is the first link in the chain of training a healthy generation and potential personnel for the society. The development of the system will also directly increase the quality of education. However, the education system depends not only on the material and technical base, but also on the potential of teachers who can use this supply. Today, the need for such personnel remains high. Because there is no link between preschool, secondary education, higher education, master's degree and other academic education. In general, knowledge in the secondary education system should grow from simple to complex, and in higher education, this knowledge should be further updated and strengthened. But no matter what subject you take in secondary education today, you can observe disparities in curriculum, plan, and content. A simple example is that the information in textbooks in the field of computer science is spiritually outdated. Alternatively, general secondary schools lack staff who can fully use the computer provided to computer classes. Because information communications, information technologies are being rapidly updated. For some reason, science lags behind the opinions and practical experiences of members of society. Therefore, textbooks, visual aids, e-textbooks will have a positive effect only if prepared in cooperation with the Ministry of Public Education, the Ministry of

Higher and Secondary Special Education and leading teachers of general secondary schools.

The main part. Chirchik State Pedagogical Institute of Tashkent region is working to study and analyze the existing shortcomings in the system of general secondary education in Tashkent region, to create an innovative cluster of pedagogical education in the regional system of general secondary education.

Through the use of this innovative approach, it is possible to coordinate the directions of pedagogical education in the region, plan for the future, ensure communication and integration between stages of education, eliminate disparities in the activities of educational entities, meet the needs of teachers in the region. Currently, the developing countries are using the "Cluster" model to address shortcomings in various areas. This tested method is being used in agriculture, manufacturing and other industries of the country and giving its results. Therefore, the Chirchik State Pedagogical Institute of Tashkent region has identified the creation of an innovative cluster of pedagogical education as its priority strategic direction.

To increase the effectiveness of the integration of general secondary schools and higher education institutions in the region can be achieved by ensuring the interaction that increases the competitiveness of educational institutions within the cluster .

The education system is one of the areas that is more prone to various reforms. This is due to the fact that the demand for specialists in various fields is constantly growing, the emergence of new professions, which also means the need to improve the quality of education. By quality of education we should mean that not only students but also teachers as participants in the learning process achieve certain results. Different stages of the education system in our country are divided into sections, these stages are inextricably linked with each other. The general secondary education system is the foundation of education from the earliest stages of the system. Therefore, in order to improve the quality of education, it is necessary to pay special attention to this stage, to use the experience of developed countries in order to identify and address shortcomings, to introduce innovative methods as in other areas.

The training of highly qualified, mature specialists who will contribute to the socio-economic development of the country is directly related to the development of the education system.

There are a number of pressing issues in the development of young people in the regions in the development of all-round intellectual, moral, aesthetic and physical abilities in the field of providing educational institutions with qualified teaching staff. As a solution to these issues, the Chirchik State Pedagogical Institute of Tashkent region was established on the basis of the Decree of the President of the Republic of Uzbekistan dated July 27, 2017 No PP-3152. In addition to the establishment of this educational institution, the main tasks are set out in the provisions of the resolution. One of these tasks is to solve the scientific and methodological problems of the development of pedagogical education in the region, to conduct research aimed at the introduction of advanced foreign pedagogical technologies and the wide involvement of talented students in scientific activities.

Various normative documents reflecting the state policy in the field of education have been adopted by our government. Every country needs to start with the development of the education sector for future social and economic development.

At present, the education system of our country is going through a very important transition period, as it is connected to the technologies used in the European education system, which requires the solution of urgent tasks such as the formation of a new type of education. World experience shows that it is impossible to build a national innovation system without establishing and developing cooperation between educational institutions, all institutions operating in the field of education, research centers, public authorities and local governments, institutional investors, the private sector.

The interaction of a new species in the education system, such as social dialogue and social partnership, is now perceived as an education cluster. An education cluster is a teaching based on a chain of science-technology- business innovations on a horizontal link within the education system and the tools of peer-to-peer and self-learning .

As a result of the analysis of integration processes in the secondary education system, the need for an "innovative cluster" in the development of effective methods of teaching a particular subject, the solution of existing problems and the implementation of the necessary measures is highlighted.

At the initial stages of organizing the activity of the innovative cluster of pedagogical education created by the Chirchik State Pedagogical Institute of Tashkent region, the institution was designated as a cluster center and all the disciplines in the system were divided into appropriate departments. The department of "Informatics" of the Institute is working on an innovative cluster on the subject of Informatics and Information Technology, one of the leading disciplines in the system of general secondary education.

In order to improve the quality of education in the system, modern innovative pedagogical technologies are being created, creating a cluster method that requires the integration of resources (science teacher, district, city, regional, national education department, specialists in the relevant ministries) and the formation of educational clusters that act as regional structures.

An innovative education cluster is a flexible system that includes interconnected objects (educational institutions, organizations, scientific schools, higher education institutions, research institutes, private sector, etc.) in the field of innovative educational activities in order to solve specific problems and achieve tangible results.

The purpose, content and need to improve the teaching methods, of computer science and information technology imposes a huge responsibility on specialists and officials in this field. The main purpose of teaching this subject at school is to pay more attention to the initial level of the field of information technology, which makes a significant contribution to the economic development of the fastest growing country in the world.

The peculiarity of the innovative cluster model in teaching the subject "Informatics and Information Technology" is the formation of an integrated system within the science in the region.

The main process in the application of the cluster model in science teaching is planned to be as follows.

• Identification of innovative cluster participants in teaching the subject "Informatics and Information Technology";

• Develop a road map

• study and analysis of existing shortcomings in the teaching of science by participants;

• Defining the integrity and sustainability of the development of science teaching as the most important priorities;

• Transformation of the integrated scheme of development of science teaching in the system into a unified system;

• implementation of cluster projects;

• organization of a source of information;

The applied method is an innovative approach to the organization of interaction between schools and universities, based on the nature of the basic principles of interaction between schools and universities, to describe specific examples of the pedagogical group as a means of cooperation between school and university.

In this way, in order to introduce an integrated system of school and higher education, many factors are set, in particular, new requirements for changes in basic education programs. As a result of the changes, there will be a modernization of the pedagogical mechanism, updated requirements for students studying in the field of "Pedagogical Education".

According to the above plan, the direction of interaction in the science education cluster in the formation of the list of cluster participants in the field of informatics and information technology in the region and the organization of the structure of interaction is to establish mutually beneficial relationships between individual cluster elements.

The participants were specialists of the regional department of public education of the department "Informatics", heads of public education of the district on science and teachers of science of exemplary schools in the districts.

The participants of the organized cluster will analyze the following features in the teaching of computer science and information technology in secondary schools in the region:

- The problem of human resources in science;
- Level of knowledge of science teachers;
- Determining the level of knowledge of students in science (as a result of competitions in the field of science in the districts);
- Preparation of methodical materials and manuals on science;
- Material and technical base. (computer technology and Internet connections)

Based on the experience and new ideas of developed countries in the implementation of cluster projects, a school laboratory on computer science and information technology was established in the region on the basis of a bilateral agreement with the regional secondary schools and the Department of Informatics of Chirchik State Pedagogical Institute. A special room was set aside in the school and the room was equipped with visual aids belonging to the cluster model. A plan has been developed in the established school laboratory to establish an integral link between the school and the higher education institution. Practical work is being carried out on the basis of this plan. As an example, seminars are organized at the school by professors and students of the department.

The innovative cluster model in the teaching of "Computer Science and Information Technology" in the general secondary education system is an important way to work with any structures that have goals and interests in the development of the teaching process of this subject.

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THE REVOLUTIONARY TRIBUNAL AND ITS ROLE IN THE JUDICIAL SYSTEM OF THE TURKESTAN ASSR

Abstract: *After the coup in October 1917, the Bolsheviks announced the abolition of the former imperial courts and the creation of the "most democratic and just" courts in the world. However, the normative documents on the new judiciary were hastily adopted and were full of contradictions. These documents, which did not meet the requirements of international law, served not the establishment of equality and law and order, but the ideas of class and "revolutionary" struggle. In this way, the judiciary was transformed into a punitive body of Soviet power. This article describes the activities of the revolutionary tribunals established by the Soviet authorities in the territory of the Turkestan ASSR in 1918-1922 on the basis of historical documents. The article also reveals the rise of various crimes among workers in the field and the state of anarchy in the system.*

Key words: *People's Commissariat of Justice, Soviet power, decree, emergency court, mobile court session, crime, imprisonment, fine, death penalty*

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Introduction

Judicial and legal reforms in independent Uzbekistan are based on constitutional principles such as the rule of law, equality of citizens before the law, the presumption of humanity, justice and innocence. In this regard, the President of the Republic of Uzbekistan Shavkat Mirziyoyev said: "Ensuring the inevitability of liability for interference in the constitutional norms on the independence of the judiciary and the administration of justice is an important guarantee of achieving our goals" [1, P.11.]. On the implementation of the Action Strategy on the five priority areas of development of the Republic of Uzbekistan for 2017-2021, a number of normative and legal acts aimed at ensuring true independence and freedom of the judiciary, improving the quality and transparency of justice were adopted.

The roots of many problems in the judiciary date back to the Soviet era, when the independence of the judiciary was limited by party-state bodies. Therefore, the analysis of judicial policy during the Soviet era, an objective assessment of the activities of the judiciary, the study of its goals and objectives is one of the urgent tasks of history. Also, the study of the history of the formation of the Soviet legal system and the activities of the judiciary allows to objectively reveal the authoritarian nature of Soviet statehood, the stages of its formation and decision-making.

Thoughts on the history of the formation of the Soviet judicial system in TASSR are expressed in scientific publications on various issues of the history of Turkestan. From the scientific and conceptual point of view, the literature on the research topic can be divided into the following groups:

- Soviet research;

- Research conducted during the years of independence;

-Works published by foreign authors.

Soviet-era research can be divided into two categories:

- Works written by representatives of the party-state apparatus in the 1920s;

- Works published during 1930-1991.

It should be noted that the peculiarities of the judicial system of TASSR are reflected in the works of statesmen and public figures of the 1920s. In particular, the works of such authors as G.Safarov, N.Turakulov, T.Risqulov contain valuable factual materials about the Soviet judiciary [2]. In the early years of Soviet rule, there was no strict censorship, so the published cases provided an objective assessment and open criticism of the existing judicial system. For example, the chairman of the Turkestan Central Election Commission, Turor Ryskulov, has sharply criticized the work of the revolutionary tribunal and the emergency commission. As the author points out, these agencies abused their power under the pretext of fighting the enemies of the Soviet government and engaged in looting and illegal arms trade [3, p. 95.].

However, since the second half of the 1920s, the possibility of an objective assessment of the problem has been limited by higher authorities due to increased censorship. From that time on, the official concept aimed at falsifying and ideologicalizing the processes that took place in Turkestan in 1917-1924 in favor of the ruling class began to take shape. This is evidenced by the research of Soviet publications in the 40-80s of the XX century, in particular, M. Kozhevnikov, L. Krakhmalnik, I. Sadovnikov, K. Gorshenin, S. Bordonov [4-8]. The idea that Soviet courts are the fairest institutions in the world to protect the interests of workers is central to them. This idea was reflected in all research on the history of the judiciary.

The first special study directly related to the history of the formation of Soviet courts in Turkestan was conducted by H. Suleymanova [9]. In his doctoral dissertation, the author studied the formation and development of judicial bodies in TASSR. In this study, for the first time, the activities of the courts were systematically analyzed. However, under the influence of the dominant ideology, many aspects of the problem are not covered objectively. In particular, the role of the revolutionary tribunals in suppressing the armed resistance against the Soviet government was assessed as heroic, and there was no mention of any mistakes or problems.

Some aspects of the activity of the courts of the Turkestan ASSR are devoted to the history of the judicial system of the Central Asian republics A.Rasulov, Sh.Rozikov, B.Durdiev, M.Sapargaliev [10-13] or A.Gordienko, Sh.Urazaev, T.Inoyatov, B. Manelis, F. Bakirov, A. Azamkhodjaev in their research [14-19].

Nevertheless, these authors, thinking within the existing ideology, took a one-sided approach to the problem and sought to capture the conflicting and negative processes in the formation of the judiciary.

In general, an analysis of Soviet-era research on the formation of Soviet courts in Turkestan shows that although they have a rich factual source base, they are based on a one-sided approach, with the exception of the first published works of the 1920s due to repressive ideological pressure.

The first objective views on the history of the formation of the Soviet judicial system were put forward during the years of independence, in conditions of transparency. During the same period, historians published a number of works on the history of Turkestan in 1917-1924 on the basis of a new theoretical concept. A new concept of the history of this period has been developed by a number of authors. It is reflected in the monograph "Turkistan in the early twentieth century", edited by Rajabova[20]. It provided an in-depth and comprehensive analysis for the first time of the process of establishing Soviet power in the country, its policy in the socio-political, economic and cultural spheres, and introduced a large number of new sources into scientific circulation. Following this study, a number of works were published to shed light on the socio-political and economic processes that took place in Turkestan in 1917-1924. For example, D. Ziyaeva's monograph on the formation of the Bolshevik concept in the history of Turkestan, including the history of the national liberation struggle [21], K. Rajabov - the history of armed action against the Soviet regime [22], M. Haydarov - the policy of centralization of Soviet power [23], A. Ermetov - studied the activities of TASSR control bodies [24].

Some aspects of this problem have been highlighted and objectively evaluated in studies conducted by lawyer scholars. In particular, issues such as the activities of the Supreme Court[25] and the history of the establishment of the judiciary in Uzbekistan were studied[26]. These studies are distinguished by the fact that they are based on a conceptual-theoretical approach, based on conclusions. However, in them the issue was considered only from a legal point of view and was not connected with socio-political processes. However, the urgency of the problem requires its study in close connection with socio-political and economic reforms, a comprehensive coverage of the gradual development of the judicial system, noting the consequences and causes.

The history of the Turkestan ASSR has also been studied by foreign researchers, whose works have been described as a “falsification of history” during the Soviet era. For the first time in the works of such authors as O. Kerou[27], A. Park[28], B. Hayit[29], the socio-economic life of Turkestan was fully covered, the authoritarian nature of the Soviet

government was revealed, but the activities of the judiciary were left out of their attention.

2.METHODS.

The article used comparative analysis and a systematic approach. This allowed the generalization and analysis of a large number of sources. Adherence to the principles of historicity and objectivity served to reveal complex, contradictory processes, one-sided, ideological conclusions of the authors of the published works of the Soviet era, an objective assessment of events and happenings in the conditions of confrontation of various political and ideological forces. The problem under consideration has been studied in close connection with the historical situation on the basis of the above-mentioned principles, the causes, purposes and consequences of this or that change have been revealed.

Modern views on building a democratic state based on civil society, the rules for creating a fair judiciary in the republic served as a theoretical basis for the study. At the same time, the scientific-theoretical, conceptual recommendations on the reform of the judicial system in the works of the President of the Republic of Uzbekistan Sh.M.Mirziyoev were of special value.

3. RESULTS AND DISCUSSIONS.

The colonial policy pursued by the Bolshevik government in Turkestan led to the emergence of an armed movement against the Soviet regime. Soviet people's courts were powerless to ensure the security of the dictatorial regime in such conditions. Therefore, the Soviet government saw the establishment of extraordinarily broad courts, which would ruthlessly punish any resistance movement, as the only way to achieve its goal. It was on this basis that revolutionary tribunals were formed.

On November 24, 1917, the first decree on the court, adopted by the Council of People's Commissars of the RSFSR, provided for the establishment of revolutionary tribunals. The trial of the revolutionary tribunal included crimes against the Soviet government, disobedience to the authorities, disobedience to orders, abuse of office by public servants, espionage, and the activities of traders and industrialists[30].

Although the order issued by the Council of People's Commissars of the Turkestan ASSR on December 12, 1917 was based on the first decree on the court, it did not provide for the establishment of revolutionary tribunals. However, the subsequent escalation of relations between the Turkestan Autonomy in Kokand and the Soviet government and the brutal bloodshed of the autonomists intensified the struggle against the Soviet government. Given the tense situation in Turkestan, the chairman of the All-Russian Emergency Commission (VChK) F. Dzerzhinsky sent a telegram to Tashkent on January 16, 1918, ordering the establishment of a body to combat counter-revolutionary movements. This issue was considered by the Tashkent Soviet, which adopted the Regulations on the Tashkent Revolutionary Tribunal. According to this charter, on February 21, 1918, the first tribunal was established in Turkestan[31]. Bolshevik V. Votintsev was elected to be its chairman. Tashkent-style tribunals were set up by all regional and city councils of Turkestan. In particular, on March 5, 1918, a revolutionary tribunal began its work in Ashgabat[32].

In 1918, the revolutionary tribunal operated without division into branches. The policy of repression became even more brutal as the struggle against Soviet power intensified. This is reflected in the establishment of specialized tribunals. In 1919 military and in 1920 railway tribunals were established. The military tribunal saw representatives of the military, while the railway tribunal saw crimes related to rail transport. In general, tribunals of all kinds served to strengthen the dictatorship of the ruling party and brutally punished its enemies.

In Turkestan, the Soviet authorities considered it necessary to establish a Supreme Revolutionary Tribunal to hear serious political crimes of republican significance. As a result, on September 14, 1918, the Central Executive Committee of the Turkestan ASSR adopted a decree approving the Statute of the Supreme Revolutionary Tribunal.

The charter stipulated that the chairman, two vice-chairmen and three members of the Supreme Revolutionary Tribunal should be elected by the Central Executive Committee of the Turkestan ASSR and that the candidates should be members of the Turkestan Communist Party. Communist K.E. Sorokin was elected as the first chairman of the Supreme Revolutionary Tribunal.

The first trial of the Supreme Revolutionary Tribunal was held from October 28 to November 2, 1918. There were 19 cases, 6 of which involved arms trafficking, 5 speculation, 2 counter-revolutionary movements, and the remaining 6 cases of misappropriation of public funds [33].

In any case, the revolutionary tribunals decided the case in favor of the Soviet government. The verdict of the revolutionary tribunals, which also had unlimited powers in the application of punishment, could not be appealed or cassated. The verdict was final and executed quickly. This fact alone shows that the tribunals aimed to protect the interests of the state, not the people.

Although the revolutionary tribunal was to hear crimes against the Soviet government and system of government, in practice it also accepted cases involving the people's courts. Moreover, the judgments rendered by these courts were unjust, and the establishment of a court of cassation to suspend, annul, or reconsider them was not specified in the statute of tribunals [34, p. 128.].

Anarchy and abuse abounded in the activities of the revolutionary tribunals. The lack of a mechanism to control them paved the way for this. In one of his reports to the government, the People's Commissar for Justice, H. Ibragimov, stated that the number of erroneous verdicts of the revolutionary tribunals was extremely high [35].

Finally, on December 13, 1918, the Central Executive Committee of the Turkestan ASSR adopted a directive on the conduct of proceedings in revolutionary tribunals[36]. This document set out the powers of the tribunal judge, the procedure for conducting the preliminary investigation and other similar procedures. The instructions also set out the procedure for reviewing the verdict of the revolutionary tribunal in cassation. A special commission has been set up under the Central Executive Committee of the Turkestan ASSR to deal with this issue. If the People's Commissariat of Justice finds the tribunal's verdict to be unfair or unlawful, it submits it to a special panel for cassation, and it reviews the verdict and makes a decision[37]. But here another democratic principle is violated, the verdict is considered and decided by the administrative body of the state, not by a higher court. Eventually, the interests of the ruling party took precedence, leading to a decision as the Soviet government wanted.

In fact, not all of the verdicts handed down by the revolutionary tribunals were reported to the People's Commissariat of Justice, and it was not possible to control them at all. Thus, the activities of the emergency courts were characterized by lawlessness and chaos.

Every normative document adopted by the government of the RSFSR during this period required the Turkestan ASSR to harmonize its legislation. In particular, in accordance with the regulations adopted by the All-Russian Central Executive Committee on April 12, 1919, on May 6, 1919 the Central Executive Committee of the Turkestan ASSR adopted two new regulations entitled "On the Supreme Revolutionary Tribunal of Turkestan" and "On Regional Revolutionary Tribunals and its Departments"[38].

The new charter stipulated that the Supreme Revolutionary Tribunal, as the supreme judicial body, should consider official and political crimes committed by government officials serving in the Central Executive Committee of the Turkestan ASSR, the Council of People's Commissars of the Turkestan ASSR, as well as people's judges, investigators, and judges of regional tribunals.

The Supreme Revolutionary Tribunal could, by decision of the republican government, take any case from the people's courts, the provincial revolutionary tribunals, and its branches, and consider them as a court of first instance. The verdict of the Supreme Revolutionary Tribunal was decisive and could not be appealed.

An important innovation in the charter was that the Supreme Revolutionary Tribunal was given the right to review the judgments of the lower tribunals in cassation. For the first time since the revolutionary tribunals began their work in Turkestan, their verdicts were officially allowed to be appealed by a higher court.

A party dissatisfied with the verdict handed down by the provincial revolutionary tribunals and its divisions could appeal to the Supreme Revolutionary tribunal within a month. The Supreme Revolutionary Tribunal reviewed the appeal within two weeks and had the power to uphold or overturn the verdict.

In accordance with the Second Regulation on the Regional Revolutionary Tribunal and its Departments, local tribunals were abolished and regional tribunals were established in each region. A regional tribunal was set up in New Bukhara and Petro-Alexandrovsk, tasked with overseeing the counter-revolutionary movements of the Russian population in the Bukhara Emirate and the Khiva Khanate. In cities with a population of more than 200,000, the People's Commissariat of Justice, in agreement with the Supreme Revolutionary Tribunal, was to establish branches of the regional revolutionary tribunal[39].

The composition of the Provincial Revolutionary Tribunal consists of a Chairman, a Deputy Chairman and three members, elected by the Provincial Executive Committee for a term of three months. The regional tribunal heard cases against the Soviet power and administration system in the relevant territory and issued a verdict on behalf of the RSFSR.

The procedure in the revolutionary tribunals provided for the restriction of human rights. In particular, the judge had the power to hear the case without the accuser and defense counsel. A tribunal judge, who was supposed to represent the interests of the dictatorial regime, was able to use such authority to pass a guilty verdict on a person in any case. That is why in the archival documents of this period the tribunals are mentioned not as a judicial body, but as a revolutionary punitive body.

In particular, at the VII Congress of Turkestan Soviets in March 1919, the chairman of the presidium PA Kobozev said: “Justice and revolution are completely opposite concepts. Justice is the norm of a peaceful life. This only applies when there are no struggle processes. Well, that’s what emergency courts do. They are carrying out mass terror”[40, p.44]. As noted above, the revolutionary tribunals, the emergency judicial body in the territory of the Turkestan ASSR, used the broad powers vested in them to terrorize the people in a brutal manner. Corruption and various abuses were rampant among the staff of the revolutionary tribunal. S. Dorojkin, a member of the Central Executive Committee of the Turkestan ASSR, stated this on March 17, 1919: "The Revolutionary Tribunal and the Emergency

Commission are not functioning normally, and their employees are taking bribes"[41].

On February 2, 1920, the Turkestan ASSR Central Exacutive Committee adopted a new regulation on the revolutionary tribunal[42]. This statute differed from the previous ones in a number of features. First, the Court of Cassation was established under the Central Exacutive Committee of the Turkestan ASSR. Previously, cassation appeals were considered by the Supreme Revolutionary Tribunal, but now this authority has been transferred to the Court of Cassation. The escalation of violations in the revolutionary tribunals of the region and the growing number of public protests against the verdicts they passed led to the establishment of the Court of Cassation. Second, the time limit for filing a cassation appeal was reduced from 30 days to 48 hours, i.e., 2 days. The aim was to prevent and repress politically charged individuals. During this period, due to the improper organization of the exchange of information between the judicial authorities, citizens' cassation appeals did not reach the higher court in a timely manner and were not resolved positively. As a result, the convict's complaint went unanswered and he was punished. It can be concluded from this that although the Soviet government formally established a cassation instance to remedy the violations, it shortened the time limit for filing an appeal and in practice did not allow this institution to operate at full capacity.

Judges of the Court of Cassation were elected by the Central Exacutive Committee of the Turkestan ASSR. The regional tribunals were required to refer the case to the Cassation Tribunal within 24 hours of receiving the complaint, and the case was to be heard within a week[43].

The above was a theoretical analysis of the normative documents adopted by the Soviet government concerning revolutionary tribunals. An analysis of the case law shows that a more brutal picture emerged. In fact, the revolutionary tribunals pursued a policy of mass terror and repression.

Military tribunals were established in Fergana and Yettisuv in response to the escalation of the armed struggle against Soviet rule[44].

In May-June 1921, the Caspian Regional Tribunal heard 62 cases. Due to the predominantly semi-nomadic nature of the Turkmen tribes, mobile meetings of the regional revolutionary tribunal were organized in Tajan, Merv, Takhtabazar, and Kushka[45].

An investigation by the Syrdarya Regional Revolutionary Tribunal in July-August 1921 by Rachinsky, Kornevsky, and Bykov, investigators of the People's Commissariat of Justice, revealed that the investigation was erratic and resulted in incomplete and unfounded accusations[46].

On July 31, 1921, the chairman of the Yettisuv Provincial Revolutionary Tribunal addressed the Supreme Revolutionary Tribunal stating that most of the tribunal's judges were incompetent or even illiterate[47]. The People's Commissariat of Justice had complained to the provincial revolutionary tribunal that it was limited to sending orders, receiving reports, and failing to provide practical assistance to remedy the problems.

The situation in Samarkand region was even worse. On May 30, 1922, the chairman of the regional revolutionary tribunal, T. Ibragimov, informed the chairman of the Turkestan Cassation Tribunal, Vanag,: “You have asked for an explanation of the reasons for the delay in the reports for the first quarter of 1922. We don't even send urgent correspondence due to lack of funds” [48].

Revolutionary tribunals served as an important weapon in the violent execution of any order of the Soviet government. For example, in the process of suppressing the armed resistance movement, the looting of the rural population by the Red Army, the devastation of arable lands led to a terrible famine, the government ordered to seize the last food stocks from the hands of farmers. On August 15, 1921, the All-Russian Central Exacutive Committee equated cases of non-payment of food and other product taxes with a counter-revolutionary movement and issued a decree establishing a tax department under revolutionary tribunals to punish such actions[49].

In Turkestan, the tax departments of the regional revolutionary tribunals were also established. In the event of mass tax evasion, mobile court hearings were organized to see such actions in the short term. The tax tribunals of the revolutionary tribunal could impose fines, confiscation of property at the expense of the state, or imprisonment on the offender[50].

It is known that before the October coup, cotton was the main agricultural crop in colonial Turkestan, and grain for consumption was imported from Russia. The famine began as a result of the cessation of grain imports in Russia due to the escalation of the civil war and the withdrawal of the latest supplies from Turkestan. Even in this situation, the government of the RSFSR continued to plunder Turkestan.

On August 15, 1921, the All-Russian Central Executive Committee equated cases of non-payment of food and other product taxes with a counter-revolutionary movement and issued a decree establishing a tax department under revolutionary tribunals to punish such actions[51]. H. Burnashev, one of the Soviet leaders of that time, described the situation as follows: “The main part of the population of Fergana is suffering from famine. In the old city of Kokand, the bodies of dozens and even hundreds of starving people are collected every day. These are all farmers. These poor people are killed like flies in the winter days. Anyone who wants to get acquainted with the disasters in Fergana should visit Shahrikhan. There are only 9,000 people left in the city, which once had a population of 75,000. ” [52].

On January 4, 1922, the People's Commissariat of Justice instructed the revolutionary tribunals to pass a verdict, accusing the citizens of not paying the food tax without a preliminary investigation[53]. On this basis, in January-March 1922, a number of mobile court hearings were held in the regions of the Turkestan ASSR, where those who did not pay the food tax were punished. Syrdarya Regional Revolutionary Tribunal in Avliyota, Shymkent, Perovsky and Tashkent districts; Samarkand Regional Revolutionary Tribunal in Kattakurgan and Jizzakh districts; Fergana Regional Revolutionary Tribunal in Fergana, Andijan and Namangan districts; The Yettisuv Regional Revolutionary Tribunal organized mobile court hearings in Pishpak, Jarkent and Lepsinsk districts. In particular, a mobile session of the Syrdarya Regional Revolutionary Tribunal, headed by Stupin, on March 14, 1922, considered the cases of 33 people who did not pay food tax in Tolkiboy volost and fined 8 people twice, 20 people three times and 5 people 5 times[54]. The court sentenced them to one year in prison and confiscated all their property if they did not pay the fine on time.

In the first quarter of 1922, the mobile session of the Syrdarya Regional Revolutionary Tribunal found 448 people guilty in 76 cases, fined 315 of them twice the tax, and confiscated the property of 20 [55, p. 11.].

In a situation where farmers are unable to pay taxes due to famine and drought, it is illogical for a court to pay 3-5 times the existing tax to a peasant family in need of a loaf of bread. As a result, their farms were confiscated at the expense of the state, and they were imprisoned. This led to the destruction of entire families. For example, Ulbozor Bekmurodova, a resident of the Polvonarik volost of Samarkand region, appealed to the regional revolutionary tribunal: “I ask you to release my husband from punishment. There is no other man in our family. My minor children were suffering from infectious sweating. I am inexperienced as a Muslim woman. With this help, you will save the whole family from an open catastrophe”[56].

Measures taken by the government to forcibly confiscate food from the population result in the punishment of innocent people and the destruction of helpless families.

Revolutionary tribunals had broad powers in the application of punishment. Originally approved by the Tashkent Revolutionary Tribunal in January 1918, the tribunal could impose fines, imprisonment, expulsion from Tashkent, declaration of an enemy of the people, deprivation of political rights, and confiscation of property in favor of the state. [57]. Another document, adopted on May 14, 1919, increased the penalties imposed by revolutionary tribunals to nine. Tribunals could sentence the convict to the maximum penalty - death [58, p. 30.].

As stated in the first set of laws entitled "Priorities of the criminal legislation of the Turkestan ASSR", the death penalty could be sentenced to death only by revolutionary tribunals, and the people's courts were not given such authority [59].

The number of cases heard by revolutionary tribunals also increased as the struggle against Soviet power intensified. This is confirmed by the following statistics. For example, in the first three months of 1922, the Turkestan ASSR regional revolutionary tribunals received 776 cases, while in the next quarter their number increased to 1,055. During the year, 2772 out of 3404 cases were considered. Of those convicted, 68 were sentenced to the maximum penalty [60, p. 7-8.].

During this period, in the Soviet state, in addition to the Supreme Revolutionary Tribunal, there were cassation, military and railway tribunals, in most cases there were contradictions and confusion between them. Therefore, according to the decree adopted by the All-Russian Central Exacutive Committee on June 23, 1921, the Republican Military Tribunal, the General Railway Tribunal and the Cassation Tribunal under the All-Russian Central Exacutive Committee were abolished and transformed into military, military transport and cassation commissions subordinated to the Supreme Revolutionary Tribunal [61, p.168-171]. In this way, all tribunals operating in Russia are managed from a single center.

On July 27, 1922, the All-Russian Central Executive Committee issued a decree on the establishment of judicial offices in Turkestan[62]. According to this document, the Supreme Revolutionary Tribunal, consisting of the Plenum, the Judiciary and the Cassation Committees, was retained in Turkestan. The control of military and railway tribunals in the territory of the Turkestan ASSR remained under the control of the RSFSR.

After the end of the civil war in Russia, there were changes in the system of public administration. During the Civil War, the emergency services were abolished and a permanent state apparatus was formed. This policy has also been applied to the judiciary. In particular, the dual diversity of the judiciary, consisting of people's courts and revolutionary tribunals, was abolished and a single system was introduced. This was reflected in the Regulations on the Judicial Structure of the RSFSR, adopted by the All-Russian Central Executive Committee on October 31, 1922. This charter provided for the introduction of a new system in the RSFSR on January 1, 1923, consisting of the Supreme Court, the provincial court and the people's courts [63, p. 237-247].

The Supreme Revolutionary Tribunal was abolished and replaced by the Supreme Court of the RSFSR and branches of the Supreme Court in the autonomous republics. As the Turkestan ASSR was an autonomous republic within the RSFSR, the Turkestan branch of the Supreme Court was

established here. Subsequent subdivisions of the judiciary consisted of regional and people's courts.

On January 18, 1923, the All-Russian Central Executive Committee decided to open the Turkestan branch of the Supreme Court[64]. On March 17, a regulation was drafted. Decisions and theses of the Presidium of the Supreme Court of the RSFSR were published, staff and cost estimates were developed [65]. Thus, on April 14, 1923, the Turkestan Supreme Revolutionary Tribunal and its subordinates were abolished and replaced by the Turkestan branch of the Supreme Court of the RSFSR[66].

4.CONCLUSION.

In short, the Soviet government, in order to establish its control over all spheres of society, set up revolutionary, military and railway tribunals, which were extraordinary judicial bodies, and brutally repressed members of the armed movement against the Soviet regime and any dissidents in the country. As the political struggle intensified, the powers of the emergency courts expanded and the sanctions they imposed became more brutal. They resorted to mass repression and terror against opposition forces, as well as arrests and physical extermination. The procedure in the tribunals would have been a violation of human rights and far removed from justice.

The Soviet authorities presented not only political crimes, but also revolutionary tribunals to hear any case they found to be more severe. The impossibility of appealing the verdict handed down by the tribunals in the early years, or the shortness of such a period, indicates that these courts were aimed at protecting the interests of the Soviet government rather than human rights.

The Revolutionary Tribunal carried out brutal terror during its short tenure. Such an action led to an intensification of the struggle against Soviet power. Thus, the tribunals, as a punitive body, served to ensure the dominance of the Soviet government in these areas, mainly through the implementation of political, military and economic terror.

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QR – Issue QR – Article

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SOCIAL AND PHILOSOPHICAL FUNDAMENTALS OF NATIONAL DEVELOPMENT

Abstract: *This article examines the essence, characteristics, relevance and dialectical interdependence of the process of national development and spiritual growth from a socio-philosophical point of view. This philosophical study analyzes the independent approaches and views on the essence, formation, study and importance of national development and spiritual growth, based on the concept of further deepening democratic reforms and development of civil society in the country.*

Key words: *National development, spiritual growth, independence, social development, democratic reforms, civil society, national idea, public organizations.*

Language: *English*

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Introduction

The study of the relationship between national development and spiritual growth in the period before the independence of the Republic of Uzbekistan, in particular, the scientific analysis of its role in the development of civil society, has escaped public attention. It is safe to say that independence has brought about radical changes in the spiritual thinking and way of life of our people. The President of the Republic of Uzbekistan Shavkat Mirziyoyev, in his speech at the solemn ceremony dedicated to the twenty-seventh anniversary of state independence of the Republic of Uzbekistan, said: “Thanks to independence, we are equal members of the world community and build our bright future. Based on the achievements of the years of independence, we are taking a bold step from national revival to national progress. ” In the current context of globalization, a philosophical analysis of the correlation between national development and the processes of spiritual growth is becoming a social necessity. In this sense, the analysis of the interrelationship of national development and spiritual progress can be justified by a number of scientific-theoretical and socio-political factors. Spiritual growth is an important criterion of national development, which allows to analyze the features of its manifestation in socio-economic, political, cultural and ideological processes, to fully understand its impact on national thinking, statehood, society and state governance.

In addition, the disclosure of the internal relations of national development as a system that embodies the socio-cultural life of society and in the form of a system associated with spiritual growth is an important scientific task today theoretical, socio-practical significance. It should be noted that the ongoing social processes in society and its features related to the development of civil society in Uzbekistan are showing their universal significance. Indeed, according to the experiences of historical reality, no nation has been able to preserve its identity without spirituality. In particular, the study of its fundamental connection with the national idea, the issue of spiritual enrichment of the level of human and social development is a topical scientific problem for the ongoing democratic reforms and socio-political processes in our country. The issue of "spiritual growth" and "national development" is reflected in the research of many scholars. In particular, his: philosophical and moral analysis - in the works of R.

Descartes, J. Locke, S. Montesquieu, D. Hume, B. Spinoza, I. Kant, I. Fixte, G. Gegel; epistemological essence of the human mind, aimed at understanding the spiritual identity - N.Berdyaev, B.Russel, V.Bexterev, I.Sechenov, S.Frank, V.Vundt, E.Durkheim, G.Lebon, V.Poreto, T.Parsons , In the studies of U. James, Z. Freud, V. Frank, E. From; Psychological and pedagogical bases - A.G.Spirkin, B.G.Ananev, A.N.Leontev, V.Myasishchev, In the theoretical and experimental researches of B.D.Parigin, E.Shorokhova; social philosophical essence - A.F.Losev, M.S.Kogan, I.S.Kon, R.G.Apresyan, A.Uledov, A.Butenko, B.Grushin, V.Yadov, V.A.Lektorsky, In the works of K.N.Lyubutin, P.T.Gaydenko, L.P.Bueva, S.A.Arutyunyan, V.N.Sagatovskiy, G.S.Arefeva, L.N.Kogan, L.V.Skvortsov; The role of the individual in the system of functional relations, issues of political activity - S. Andreev, A. Belyaev, N. Ivanchuk, G. Ashin, N. Keyzerov, F. Burlatsky, A. Galkin, A. Arnoldov, V. Mejuev, A. Gurevich, Researched in the works of A. Zdravomislov, Yu. Levada. The conceptual ideas, conclusions and opinions put forward by these philosophers have influenced not only the human, individual life, existence, but also the social process of national development and spiritual uplift. M.G.Djunusov, S.L.Rubinshteyn, G.M.Andreeva, B.F.Porshnev relations show that it is one of the most complex, comprehensive problems related to the development of society.

However, the philosophical theory that dominated scientific research in the former Soviet Union did not allow the problem to be studied objectively and scientifically, and even the concepts of “national development” and “spiritual progress” were not allowed to be applied in science. However, by the end of the twentieth century, there was a growing interest in the study of national and social problems. As a result, the translation of the works of foreign researchers on the problem began to publish the results of research devoted to the study of ethnic processes, spiritual growth and the process of national development. After the independence of our country, the concepts of "spiritual growth" and "national development" began to be used as a separate socio-historical reality, a philosophical concept that reflects the ethno-social and ethnocultural features of our people, our nation. It should be noted that the universal foundations of national development are vividly expressed in the United Nations Millennium Development Goals, the main goals of which are as follows:

- eradication of extreme poverty and hunger;
- access to general primary education;
- Promoting equality between women and men and expanding women's rights and opportunities;
- reduction of child mortality;
- Improving maternal health;
- Fight against HIV / AIDS, malaria and other diseases;
- Ensuring environmental transparency and environmental sustainability;
- Forming a global partnership for development goals.

Each UN member state has developed its own national development direction by developing development strategies and programs to achieve the Millennium Development Goals.

In particular, the First President of the Republic of Uzbekistan Islam Karimov developed areas of activity that define the prospects of national development. The basis for this is the path of national development that we have chosen - the continuation of large-scale reforms in our country at a new stage; steady economic growth in Uzbekistan in the context of the global financial crisis; practical results achieved in maintaining the living standards of the population; It should be noted that the Uzbek model of development is widely recognized by the world community. It should be noted that national development is gradual. He climbed from the bottom up as a continuous process that goes on and determines the formation and rise of the nation. "National revival", which differs from national development, is a process associated with the reorientation of the potential lost at a certain stage in the history of national development due to certain objective and subjective reasons. Spiritual growth and self-awareness are the perceptions of each nation's place in the existential being, socio-historical and spiritual-cultural development depends on their creative activity, heuristic research, intellectual potential, and therefore the development requirements of life and activity.

From the point of view of rational organization, understanding of the need for management. Unity between the nation and the representatives of the nation for the purposes of social development is the main requirement of spiritual consciousness, ascension and self-awareness. A person cannot be united with the nation without accepting its goals and ideas of social development. Independence and democratic reforms, as a great socio-political reality, have created an opportunity for our nation to realize its identity correctly and fully. Independence has made it possible to form a democratic state governed by the rule of law. Our nation, each of its representatives, has realized that he is the master, the responsible, the creator of his own life and future, that he has a place and a share in universal development. This is the rise of spirituality and the rise of self-awareness to the level of universal consciousness. The recognition of the primacy of universal values shows that the spiritual consciousness has a humanistic essence and purpose.

In conclusion, it can be said that at the current stage of development of society, the further deepening

of democratic reforms in Uzbekistan, the spiritual growth of society in the context of the development of civil society, political,economic, requires the liberalization of the spiritual fronts and the continuous development of this process. Indeed, during the years of building a free, democratic society governed by the rule of law, significant work has been done on the liberalization of political and economic life, based on the legal basis. In the years of further development of independence, it is necessary to make effective use of this land and fulfill the tasks set out in the concept.

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THE IMPORTANCE OF STUDYING THE REGIONAL DICTIONARIES OF ENGLISH LANGUAGE

Abstract: *Essential part of English lexicography is to make comparison between regional dialects of the language and to identify similarities and differences between them. In this article we'll try to analyze this issue and to find out why it is so important. For writing this article, the authors based on the investigations of foreign scientists on this issue.*

Key words: *lexicography, glosses, dictionary, national, regional, historical dimension, compilers, compiling.*

Language: *English*

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Introduction

If we speak about the dictionary as a linguistic term, it is a list of words with their definitions, a list of characters, or a list of words in other languages. Dictionaries are most commonly found in the form of a book. The optimal dictionary is one that contains information directly relevant for the needs of the users relating to one or more functions. It is important that the information is presented in a way that keeps the lexicographic information costs at a minimum. Vocabulary study has a long history, going back in the Western world to Plato's *Cratylus.* The elaborate, large-scale dictionaries of today envolved by stages from simple beginnings. In the seventh and eighth centuries, the practice arose of inserting in Latin manuscripts explanations (or 'glosses') of difficult words, in Latin or in Old English (sometimes in both). Later, the glosses were gathered together into 'glossaries'. It is a matter of convention that the early collections are called glossaries and the later ones dictionaries. Moreover, terminology in the Middle Ages was unstable. One picturesque name or another could be used in any given case.

Two centuries would pass before a variety within English would begin to assert its independence. That revolution began in Scotland with John Jamieson's Etymological Dictionary of the Scottish Language.

The study of English lexicography has a national and regional as well as a historical dimension: it encompasses the distinctive words and meanings used in the United States and in the independent countries of the Commonwealth, and the dictionaries in which they are recorded. By the 1850s in America, lexicography had moved away from its earlier concern with lexical origins. **The Dictionary of American English (DAE)** was the first of these to be produced.

Dictionaries of national usages have appeared in several other countries, including India. But they are most comprehensive and scholarly in countries where there are long-established native-English-speaking populations, such as Australia, Canada, New Zealand, and South Africa. In all those territories, with minor differences, a particular pattern of dictionary

development has come about. First, typically, a single scholar or individual enthusiast will appear and start noting down the vocabulary peculiar to the territory-often complaining as a result that the OED is deficient in covering those usages. A small scholarly dictionary might be the next step, as in South Africa at Rhodes University, where a modest 'dictionary unit' was established, resulting in the production of a **Dictionary of South African English (1978).**

Scottish National Dictionary (SND) is considered as the second major work to be produced by Scottish lexicographers. Much of the collecting and preliminary editing was carried out by volunteers. To gather spoken evidence, the country was divided into dialect areas according to pronunciation. Written quotations, also excerpted by volunteers, came from a considerable number and variety of works.

Regional dictionaries and glossaries were valuable, but many of these source books were descriptions of local dialects. The first serious undertaking, as Jeannette Allsopp explains, was **A Dictionary of Jamaican English on historical principles (1967)**, by Frederic Cassidy and Robert Le Page. This was designed to be a complete inventory of Jamaican Creole as well as a record of more educated Jamaican speech. The bulk of its data was made up of recorded responses to a questionnaire, devised by Cassidy, which focused on theworking lives of farmers, Wshermen, and so on.

The next major title was **The Dictionary of Bahamian English** by J. Holm and A. W. Shilling (1982). It was intended to form 'a link between the Caribbean Creoles such as Jamaican English and the English spoken today by many black people in the United States'. Analysis was restricted to the language of the most accessible islands of the chain. Richard Allsopp, eventually to assume the chief editorship of **the Dictionary of Caribbean English Usage (1996)**, became aware while a student in Europe of differences between his own usage and British Standard English. Then, running in parallel with the expansion of text corpora, and of exceptional importance for the further development of the OED, have been the changes made possible by online editing and publication. One significant aspect has been the editorial revision of the dictionary, now on going, which has resulted in the online publication of large amounts of new and revised dictionaries.

In the heyday of the British Empire, conditions were far from auspicious for the development of an autonomous variety of English in India. Macaulay's policy paper in 1835 had raised English above the classical languages of the region-Sanskrit and Persian-and set as a goal the creation of a new class. In the course of the nineteenth century, this policy was largely successful among Indian elites, and not until the twentieth did Gandhi (among others) point to English used by Indians as a sign of cultural subordination. The first dictionary of Anglo-Indian appeared in 1885 as the result of a decade of work by an official in India, George Clifford Whitworth. He saw it as a "Supplement to the English dictionary': "An Anglo-Indian Dictionary" should contain all those words which English people in their relations with India have found it necessary or convenient to add to their own vernacular, and should give also any special significations which pure English words have acquired in India"

Though not a citation dictionary, it is an excellent work mostly devoted to loan-words from Indian languages like sari or stupa. Distinctive English usages are also treated (e.g. serpent race, settlement, state railway.

Into this cultural mix came a remarkable volume celebrating Indian English: **A Glossary of Colloquial Anglo-Indian Words and Phrases (1886)** by Henry Yule and A. C. Burnell. Here was a work of profound scholarship with precisely identified quotations from a copious bibliography showing the evolution of expressions in the subcontinent. James Murray was an enthusiast of the work and cites it nearly five hundred times in the OED—for instance in the etymology of so English a word as elephant. The compilers were broadly interested in words that had entered English from the region and more particularly concerned with 'the common Anglo-Indian stock' in commercial and administrative use. Many of these were well established in British English: curry, toddy, veranda, cheroot. Others were more specialized and had retained connotations of their origin: pukka, mahout, nautch. The compilers were further interested in new senses of English words acquired in the region: bearer, cot, belly-band, college pheasant, chopper, summer-hand, eagle wood, jackass-copal, bobbery.

Ambivalence about the role of English after independence did not lead to consequential lexicography of distinctive uses of English in the region. Collectors national and regional dictionaries of English still publish lists of borrowings (like loofa for the product of the vegetable sponge vine) and innovative senses (like denting for smoothing of dents in automobile bodies). (For an example of a dictionary of this type, see Hankin 2003.) As the example of Pickering reveals in the American context, recognition of distinctive English may begin with a treatment of differences between the superordinate and the subordinate variety. A rich example of this practice in India was provided in the usage dictionary by Nihalani and his collaborators. Most entries are designed to alert users to differences (for instance, jotter 'ball-point pen').

Beyond south Asia: Malaysia has adopted Bahasa Malayu as the 'national language' and marginalized the use of English for some purposes, so conditions for such work are hardly any better there.

In Singapore, government action has discouraged the recognition of a distinctive Singaporean English. Nonetheless, an edition of the

Chambers Dictionary designed for Malaysia and Singapore contains an appendix of borrowed words in common use (for instance, ang moh, Mat Salleh, orang putih, all three expressions used to designate a Caucasian person). Within the main alphabet there is a category for Singapore-Malaysian English 'informal English', as shown in this entry: (2) lamp post 2. (SME informal) You might be called a lamp post if you are in the company of two people who would rather be alone together. Wei Ming, I don't want a lamp post around whenMei Ling comes afterwards, all right (Seaton 2002, s.v. lamp post). These varieties—known as Manglish and Singlish—are as revealing of their history as any of the other national kinds of English. Thus gostan 'move backwards, go slow' is derived from go astern and zap 'to photocopy' from international English. Only very recently has the power of the Internet allowed word enthusiasts, despite official indifference, to create ambitious citation dictionaries designed on historical principles.

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QR – Issue QR – Article

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PRACTICES OF MANUAL TECHNIQUES IN THE CONDUCTING CLASSES OF FUTURE MUSIC EDUCATION TEACHERS

Abstract: *Development of intellectual potential, spiritual maturity, computer and foreign language skills of the younger generation in the system from pre-school to higher pedagogical education, as well as a responsible approach to the work of teachers and educators working in the field. Updates in the field of science, technology require extensive use of best practices. The article discusses the role of conducting in the preparation of future music teachers for school activities and the specifics of the practice of mastering manual techniques.*

Key words: *Music education, future music teacher, conducting lessons, manual techniques in conducting.*

Language: *English*

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Introduction

The cultural and enlightenment development of any society is closely connected with the level of development of its spiritual and moral foundations. These foundations are loyalty to national values, strengthening and development of spiritual heritage, political and legal, spiritual freedom and patriotism of the individual.

The noble noble endeavors of Uzbekistan to build a truly developed society in the world are, first of all, the harmonious formation of the young generation, which is the future of society. It is impossible to fulfill tasks in the socio-economic and cultural spheres, to fully create a national ideology without enriching a person with moral purity, spiritual maturity, loyalty to national ideals, aesthetic taste, and devotion to national ideas.

The highest goal of our society is to bring up a highly harmoniously developed generation that fully meets the requirements of the times. The highest criterion of perfection is determined by the ability of a person to have a real spirituality and enlightenment. Spirituality and enlightenment cannot be imagined without artistic and aesthetic perfection, and music, musical thinking, musical taste, worldview play an important role in the system of artistic aesthetic education. The world of music, with its extremely diverse tones, rhythms, colors, colors, expresses the events, happenings and human state of mind, imagination, feelings and experiences in an artistic and emotional way. Man knows the world expressed in music through his inner strength and psyche. In this process, the acquisition of musical knowledge is of particular importance.

The great role of the teacher in the upbringing of the person is central in the works of Eastern thinkers Kaykovus, Abu Nasr Farobi, Yusuf Khas Hajib, Alisher Navoi, Abdullah Avloni. The problem of training future teachers in accordance with the requirements of the time, educating them to be professional, knowledgeable, quick to perceive innovations and changes, to approach them creatively and creatively apply them in their work is one of the most important issues in education today. is one of the current issues.

Conducting is one of the least studied and relatively young disciplines in the field of music. However, our music culture today is unimaginable without this art form. Many types of performance, such as modern opera, ballet, symphony, instrumental orchestra, symphonic genres, are directly and perfectly connected with conducting. The study of the role of management and leadership in this art form also plays an important role in the collective

performance of education in secondary schools. In higher pedagogical educational institutions, which are aimed at training future music teachers, this type of art is studied in the curriculum "Conducting" as part of the specialty.

The first musicians and performers who left a bright mark in the art of conducting were Gluck, Mozart, Mendelssohn, Spore, A, Weber, Recheard Strauss, K, Wagner, V, Berlioz, Franz List, G, Janer and others. other specialties, composition, violin, piano, organ, playing were played in parallel at the same time.

The further development of the art of music required musicians who were engaged in conducting to give up the second training and devote themselves to this profession. In the XIX century, the art of conducting was especially strong in Germany and Australia-Hungary.

In the second half of the XIX century, there were conductors who conducted their own musical works. The first such person is Hans von Buylov.

"We should be grateful to this man, who was not only a famous conductor, but also a great composer. Because of this, the attitude to conducting was formed not as a profession, but as an art, wrote the famous conductor G. Weingartner about Hans Buylov.

In Russia in the late nineteenth and early twentieth centuries, M.A. Balakirov, brothers Anton and Nikolai Rubnstein, E.E. Head, S. Rahmaninov, V.I. Safanov and many composers and musicians worked as conductors.

With the emergence of polyphonic music and polyphonic ensembles on the territory of Uzbekistan in the late 20s and 30s of the XX century, with the influx of European musical genres into Uzbekistan, national drama, opera, ballet, folk instruments As a result of the emergence of group performances such as the orchestra of instruments, a number of local conductors emerged. A. Kazlovsky, Naum Goldman, George Doniyakh and their students M. Ashrafiy, B. Inoyatov, Fazliddin Shamsiddinov, Nabi Khalilov, Abdugani Abdukayumov, Dilbar Abdurahmanova, G. Tulaganov, Mardon Nasimov, Said Aliyev, Abdukakhor Sultanov, Ergash Toshmatov, Kuvonch Usmanov, Botir Umidjonov, Fazliddin Yakubjonov, Eldor Azimov should be singled out.

The word conductor is pronounced differently in different languages: the Germans say "Dirident", the Italians say "Dirindenten", the French say "Chef orchestra" and the English say "Sonduktor".

In any language, the word means leader, chief, director, manager. In ancient times, the definition of social life by religious rules was due to the development of music, mainly in the churches, and the predominance of religious themes in the composer's work. The attitude of religious churches, people's behavior, observance of religious rules is also evident in the musical works. According to ancient treatises, literary monuments, legends and myths, the process of creating music is equivalent to a strong emotional impact. The purpose of music is to have a positive effect on humanity and animals, as well as to please the divine world. The law of beauty and harmony came into music from space and became the basis of artistic style. The artistic style itself combines mental and emotional being in equal proportions. Artistic style plays an important role in a positive style. The inextricable link between malice and creative style is evident in the makom culture of Central Asia.

The achievements of the art of music, acquired by all ancient civilizations, laid the foundation for the development of medieval European music, as a result of which the author's creativity was fully formed in this region.

The art of music is a kind of activity through which a person conveys his feelings to others through external signs, and they transfer the feelings to their hearts, feel them from the heart. This recognition is directly related to the art of conducting. The emotional power of the conductor, the ability to convey emotions to others play an important role in the performance of the work. The conductor captivates the team with his emotions, and then he has to enchant the audience with him. It is the ability to make an emotional impact that in many ways determines the talent of the conductor, his artistic skills, the quality of his work. Conductor, orchestra or choir can be a leader, teacher, instructor. This applies equally to all conductors, young or old, experienced or just starting their careers.

Conductor as the youngest and least studied field of art is constantly evolving in symphonic, stage works, folk instrument orchestra, choir, damli and pop music based on artistic facts and observations. The continuation of the art of conducting continues to create new works of art that accurately and realistically reflect the events of social life, using traditional artistic forms, styles, and some visual aids, in particular, while maintaining the characteristics of the art of music. has been contributing. Therefore, the development of the art of conducting in the XX-XXI centuries is directly characterized by a very important educational significance, with a vivid reflection of the history of society, the realities of the art of music.

Conductor-music teacher The leader of the children's team has a task to work with many performers who are not trained in singing. To lead such a group, first of all, it is necessary to know the nature of the human voice, the possibilities and ways to correct its shortcomings, necessary for the performance of the choir.

Requirements for conducting lessons:

- to reveal the ideological and artistic content of the work on the basis of the analysis of musical means;
- To understand and interpret the opinion of the author (composer) in his musical performance;
- Acquisition of skills of intuition in the vocal-intonational mastery of the score;
- invaluable performance of scores on the piano;

- To know the vocal and choral analysis of works in the correct organization of the rehearsal process;

- to be able to work with choral works of different genres and styles, to have the skills of processing;

- Conducting techniques to reveal the essence of the artistic image of the work;

- Performing at concerts, knowledge of stage culture;

Among the modern requirements of the conductor-teacher at the present time, these tasks are of paramount importance.

In the curriculum of higher education institutions specializing in music education is studied as a specialty "conducting". "Conducting" plays a key role in the professional activity of a music teacher. It is impossible to know it at the level of sufficient theoretical and normative requirements. In the process of higher pedagogical education Future music teachers will learn the art of conducting, its role in the art of music, its importance, emergence, formation, peculiarities in the management of choir and orchestra performance, ie , directing the choir, its management, the most important components of conducting - auftakt, completion of the performance, conducting pastanofka, conducting apparatus, manual techniques, mastering the practice of conducting to different conducting dimensions. In this process, the main focus is on their ability to work with different types of choirs.

What are the functions of choral conducting?

- Musical ability, ie musical-aesthetic, sense of music, sense of rhythm, development of musical memory, in the process of formation of musical thinking, artistry;

- Formation of professional knowledge and skills in the implementation of the main types of vocal choir work in school music education;

- The main types of educational work - mastering the musical melody (polyphony, ensemble, word, pronunciation, intonation);

- Singing voices and chords in choral works, playing scores on the piano, conducting under the accompaniment of a concertmaster;

According to pedagogical conductors with experience in working with the choir, the first task of the conductor, ie children's choir conductors, is to have the knowledge and skills to freely manage the performance of the choir. The purpose of conducting classes in higher pedagogical educational institutions is not only to train literate musicians, choir leaders, but also to train teachers who can work with children, perform vocal and choral methods, and know the psychological and physiological capabilities of children. When it comes to school music practice, it teaches students to evaluate the content of music in the environment around them, while being able to give a decent, effective, moody lesson. He has a great opportunity to cultivate the qualities of teachers, such as attention, observation, thinking, independence. The artistic and technical task of a school teacher as a music educator requires a special approach to teaching materials.

Nowadays, in order to successfully teach students the subject of "conducting" in the process of higher pedagogical education, it is expedient to start with a specialist educator, first of all, based on the specific features of the subject, mastering the simplest rules of teaching conducting. This is because students who have started studying at pedagogical universities come to this school with different levels of musical training. In particular, it is natural for students with a special secondary education (graduates of specialized music schools) to have a basic understanding of “conducting” (except for graduates of choral conducting).

Therefore, nowadays the teaching of conducting as a group, such as instrumental performance, vocal performance, creates many problematic situations for the teacher. Conducting musical works is mainly aimed at learning to manage group (choral) performance. The conductor must give life to the lifeless note. The conductor must direct the choir's performance with the correct interpretation of the music performed by the choir. To do this, first of all, it is necessary to have a good understanding of the instructions of the conductor (schemes) (dynamics, auf tact, start, completion, fermato, staccato, ligato, non ligato, krishendo, diminuendo, and so on.

Manual technique is derived from the Latin word "manos" - "hand". This is the conductor's purpose; convey "important information" about speed, rhythm, meter, character, dynamics; a performance of a particular instrument or group is a set of actions that are a means of expressing a work in its own interpretation. The manual technique allows the conductor to control the orchestra, which is his "instrument", and to produce the music he needs. In this case, the manual technique should not be a surfboard, but should be subordinated to the main goal, as if the music is inspired. He should not be noticeable to the audience, even to the orchestra conducted by the conductor. At the same time, there are conductors who do not have a "bad hand", that is, the "basis of conducting techniques", and at the same time have high performance skills. An example is S. I. Savshinsky's words in The Pianist and His Activities (L. 1961, p. 7). "When the great conductor Otto Klemperer first performed Mozart, Beethoven, Brahms in Leningrad and shook the hearts of the fans, there were those who said that his technique was completely non-existent. They were especially popular among orchestra members and young conductors. However, the orchestra at that time worked as the only instrument that fully realized the intention of the conductor, performing with inspiration. Isn't it a great technique in art to master a technique that is not obvious ?! »Thus, thanks to the

conduction technique, the conductor communicates with and holds the performers, plasticizing the character of the music, his ideas and moods. He infuses his soul with the orchestra and creates the form of the work, providing its sound.

Meaningful manual technique, precise figurative hand movements make the performance more artistic. A conductor who is proficient in the language of hand gestures can perform the work as he wishes at the moment, although this is different from rehearsals. This performance will make a great impression on the listener.

"Amplitude" is derived from the Latin word amplitude, which means latitude or longitude. The strength of the sound of music depends on the breadth and vibration of the vibrations. The wider the vibration, the louder the sound, and vice versa.

The amplitude of the conductor's hand movements is reflected in the dynamics and tempo of the music. The loud sound of music requires wider, faster, larger movements, while the slow sound, on the contrary, requires slower and slower movements. Rapid and slow play of music preserves the agility and activity of hand movements. The range of motion should not be too large, as excessive, large movements can lead to tempo retention and fatigue of the hands. In addition, it is not always permissible to use a large hand movement, even at a slow pace, even for "fortissimo" (ff).

The student has some degree of conducting, in which the teacher has a certain concept and the ability to consciously control their movements (hands, head, shoulders, feet, face, elbows, etc.). can proceed to the next most important actions. One such action is the "Auf Tact." Auf tact is a "warning" hand gesture at the beginning of any song (chorus) performance. It can be compared to the air (breathing) of a singer or wind instruments.

1. From top to bottom along a vertical line;
2. From bottom to top (in binary size)
3. From left to right along the horizontal line, (in triplicate)
4. From right to left (in quadruple measure)

From the bottom to the right (in triplicate) along the curve is the final contribution in most bars. There are types of nometric auf tact fast, short, stopping (auf tact, staccato) or smooth and slow auf tact tenuto or related to the main movement (auf tact, ligato). All this depends on the individual technique of the conductor, to which sound the hand movement of the conductor belongs.

The knowledge gained in the conducting class is given to students:

- To reveal the ideological content of the work under the analysis of musical and expressive means;
- The creator (composer, composer) fully understands and feels the idea and interprets it in his musical performance;
- Acquisition of skills of intuition in the vocal intonation of the score;
- Playing the score on the piano;
- Understanding of choral music in different styles and genres, enriching his personal choral score, processing, arranging, transposing works;
- Conducting techniques, lighting of the artistic image of the work and control of the choir voice;
- Learning to control the process of collective mastering and performance of a piece of music, tuning the sounds, using the tuning fork;
- Teaches to perform at concerts, to behave on stage, to correct sounds during performance.

In school music practice, teachers are required to be in regular contact during the performance of the choir. To do this, the teacher must master all the basics of knowledge, skills, qualifications and skills related to the art of conducting in the educational process.

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QR – Issue QR – Article

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PEDAGOGICAL CONTENT OF THE USE OF MUSICAL ARTS IN THE FORMATION OF NATIONAL PROUDNESS AND PROUDNESS IN STUDENTS

Abstract: *The content of the article is aimed at instilling in young people a sense of national pride through the art of music. The ideas of our great encyclopedic scholars on music, its influence on the human heart, its educational significance, the spiritual nourishment of our national and classical music at all stages of the development of world music culture with its charm and deep philosophical content. As they serve to shape feelings of national pride and pride in them.*

Key words: *students, national pride, educational tools, music, spirituality, national musical heritage.*

Language: *English*

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Introduction

One of the aspects of spiritual and enlightenment perfection is national pride. National pride is national pride. National pride is the unconditional respect for all the material and spiritual riches, historical heritage, customs, traditions, manners, lifestyle, and lessons of its people, created over thousands of years. to deal with zoz is to be careful. Those who do not know the history, national values, language, future interests of their people, forget their national identity, do not care about the future of their nation, there will be no national pride, no pride in the nation, no nationalism. We cannot call such people spiritually mature. No matter how difficult the task of educating a spiritually mature, perfect person, the ultimate goal can be achieved only if we carry it out.

Resolution of the President of the Republic of Uzbekistan Sh.M.Mirziyoyev dated August 14, 2018 No. PQ-3907 "On the spiritual, moral and physical development of youth, raising the system of education to a qualitatively new level" The resolution emphasizes that Uzbekistan pays special attention to the formation of a harmoniously developed generation, educating young people in spiritual, moral and physical health, making them active participants in the ongoing reforms. , the education system in the priorities of cultural and spiritual development, the formation of its content and essence on a new, national basis at the level of public policy.

Today, the focus is on educating young people to become independent-minded, high-minded and spiritual people. As the President said, “Our state and society are committed to the development and happiness of our young people, who are independent-minded, have high intellectual and spiritual potential, and are equal to their peers in any field in the world. We will mobilize all our forces and capabilities ”[1].

The future development and how it goes depends in many ways on the education of its creators. Strengthening the national basis of education and upbringing, improving it based on the latest achievements of world science, the development of science, socially active, spiritually mature, professional, respect for national and universal values and a deep sense of it It is no coincidence that the development of a person who is able to think creatively, freely and independently, with a high level of national pride and pride, has played a key role in the policy of our state.

The implementation of the national model of education, based on the Law on Education and the National Training Program, which embodies the theoretical foundations of education reform, is currently in full swing.

Pedagogical observations and analyzes show that the current state of education and upbringing is based on national values. We can see this in the fact that it is recognized by the international community.

The expression of national pride in the education of students, their upbringing in the spirit of devotion to the motherland is a reflection of the realization of the age-old dreams of our people. That is why today culture and spirituality, education and upbringing are becoming a decisive factor in social development. In the essence of cultivating feelings of national pride and pride, the music of the culture of a certain nation, the national traditions and customs that reflect the feelings of pride, certain periods of people's lives, His psyche and philosophy have a great educational impact. There is no nation whose culture is unimaginable without music.

From this point of view, it is necessary to consistently acquaint the younger generation with the established folk musical heritage of our country, to make students proud of their homeland, classical songs, as well as from there. The life of local artists, the acquaintance with their works, has a very strong influence on the formation of national pride, consciousness, thinking and a sense of self-pride.

Our great encyclopedic scholars have also expressed valuable insights into the art of music and its impact on the human heart, its educational value. The use of universal and national traditions and values in the formation of national pride and pride in the younger generation plays an important role in the spiritual development of young people. In particular, Abu Nasr, who made an invaluable contribution to world civilization, reflected the spirit of his time in mystical and religious tones in his immortal works with musical and poetic forms, strongly influenced the history, science, culture and moral development of the Muslim world. Farobi, Ibn Sino, Abdurahman Jami, Alisher Navoi, Jalaliddin Davani, Jalaliddin Rumi, Abu Hamid al-Ghazali and other great thinkers in their works covered the theoretical and practical issues of music science from the point of view of mysticism [4; 16]. In particular, the great Eastern thinker Abu Nasr al-Farabi, in his treatise Ihsa il-Ulum (The Origin of Sciences), says of the science of music: “This science ... has lost its balance (people). it regulates behavior, it perfects imperfect behavior, it maintains the balance of (people) behavior that is in balance. ” Al-Farobi also emphasized the role, goals and objectives of the art of music in the system of his ideas, in the upbringing of the child's personality. It emphasizes the importance of music in human life and exclaims, "Oh, world of music, it would be better if you went, what would have happened to people without you." Our ancestor Sheikh Saadi said, "Music is the companion of the human soul." For centuries, poetry and music have been inspired by each other, absorbing the great ideas that flow from the depths of the human heart and serving the spiritual development of generations. That is why Hazrat Alisher Navoi is a unique representative of this field in his time; Ustad Kulmuhammad, a master of the ud, gijjak and kobiz instruments, was highly respected:]. In the third article of "Khamsatul-mutahay-yirin" the name of Ustad Kulmuhammad is mentioned with honor. Alisher Navoi, who sincerely felt the impact of music on changes in the socio-emotional environment and personal development, began to study this science: "I am a midwife to the poor, let him know the science of this science ..." [6, 70]. The fact that Hazrat Navoi, a man of encyclopedic knowledge, also excelled in the science of music and rose to the status of one of the founders of this theory of science is an example for the successors of the great nationalist scientist. The book "Aslul-wasl" by Mawlana Alisha, "The ageless in this science" is classified at the suggestion of Navoi. Alisher Navoi carefully read Aslul-Wasl and the theoretical works in the field of music created by famous cultural figures of his time - Mir Murtoz, Abdullah Marvarid and Mavlono Binoi. He said that these books were written in a complex style. realizes that he cannot digest. Nuriddin Abdurahmon Jami, who has always felt the spiritual pain in Alisher Navoi's heart, was the first to realize his dream of becoming a humane poet. There is no such thing as a munaqqah or a useful treatise ”[6, 70].

The art of music is a means of actively developing emotional feelings that quickly affect a person. Music, with its unique nature, has a great impact on the spiritual world of young people, to form their artistic and moral culture, to cultivate a sense of national pride, to develop creative skills, sophistication and artistic taste, to expand the range of ideas. , serves to foster independence and initiative. Therefore, it is the sacred duty of every musician to instill in students a culture of music that is an integral part of human spirituality.

Sources say that spirituality is a person's inner world, a powerful force that strengthens his will, unites his faith, awakens his conscience, and is the criterion of all his views. Spirituality is absorbed into the blood and bones of a person over the years by means of musical influence, which is glorified by mother's milk, mother's goddess, family upbringing, ancestral teachings, and the feeling of homeland. In particular, closeness to nature, people, constant thinking of the good, honest work, creativity, acquaintance with art, enjoying the incomparable blessings and beauties of the world nourish the spirituality.

In this sense, the formation of a sense of national pride, which is one of the most important components of educating young people in all aspects of spirituality,

is important. The art of music, which is one of the most important tools of education, is one of the main tools. Music is an art form that has a large place in our cultural life and plays an important role in the development of human personality. Music education is one of the main and most complex aspects of fine arts education, which teaches to understand and appreciate the beautiful things around us. Therefore, in all times and in society, great attention has been paid to the art of music and its development. A special place in the system of education belongs to education, which reflects the feelings of national pride and pride. The issue of educating a person on the basis of national pride and pedagogy poses special challenges to pedagogy, philosophy, art history, literature, art, especially music education. In the essence of cultivating feelings of national pride and pride, the music of the culture of a certain nation, the national traditions and customs that reflect the feelings of pride, certain periods of people's lives, His psyche and philosophy have a great educational impact. There is no nation whose culture is unimaginable without music. From this point of view, it is necessary to consistently acquaint the younger generation with the established folk musical heritage of our country, to make students proud of their homeland, classical songs, as well as from there. The life of local artists, the acquaintance with their works, has a very strong influence on the formation of national pride, consciousness, thinking and a sense of self-pride. The ideological and artistic concepts reflected in the content of the musical work are of special importance in the formation of feelings of national pride and pride in students through music education. The music reflects a certain image of the people, their past and present, and a sense of pride. This, in turn, plays an invaluable role in instilling in young people a love for their homeland, national values, national pride, pride and a conscious attitude. National pride helps people to grow national consciousness, to develop a sense of appreciation for national values. The national idea is to unite and mobilize people to build a new system, to instill in them the confidence to build a national pride, a free and prosperous, independent society, to find strength and support in this way. serves the purpose and aspiration. There is a growing need and attention to restore the scientific and pedagogical foundations of spiritual education, to strengthen the spiritual basis of national pride, to effectively use national cultural values for this purpose. Because the feelings of national pride and pride are nourished by the immortal heritage of our people, formed over the centuries, which determines the national identity, spiritual image (such as language, customs, history, literature, art). A special place in this national heritage belongs to the folk music heritage, which is one of the sources of national spirituality. The heritage of folk music embodies the socio-historical development, ethno-psychological features, life experience and social views of a particular nation. In this sense, it plays an important role in the education and upbringing of the younger generation, which creates the future of society. In this system, educating the younger generation through music education is important. Music education has a great impact on the national and spiritual, moral upbringing of the younger generation, the formation of feelings of national pride and honor. After all, the subject of music culture serves to form the spiritual, artistic and moral culture of young people, to cultivate national pride and patriotism, to develop creative skills, sophistication and artistic taste, to expand the range of ideas, to foster independence and initiative. [8].

The following tasks should be performed in educating students in the spirit of national pride through music education:

1. Music in inculcating national values in students

extensive use of training opportunities,

2. Introduction of pedagogical-psychological analysis of students' emotional perception of music in each lesson;

3. Formation of spiritual and moral qualities of students in the process of musical and artistic activity;

4. Analysis of the current state of music lessons in the country;

5. Increase the percentage of students involved in clubs and organize a variety of musical activities in order to spend their free time effectively and meaningfully.

6. Development of scientific and practical recommendations for the formation and development of students' feelings of national pride in the process of learning the basics of music, in order to popularize and promote their experience in improving music education,

In addition, music education requires the use of the following optimal methods to instill in students a sense of national pride and pride:

1. In order to form a sense of national pride, spiritual, moral and aesthetic worldview through music lessons, each teacher should teach students to analyze music in depth;

2. The musical works to be taught must be written in the spirit of patriotism, national pride, and the student must feel the content of the work in the performance of this work;

3. Ensuring the accuracy of the main goal of each music lesson;

4. Interdependence of educational and pedagogical means;

5. Sequence of each educational purpose and tasks in lessons;

6. Learning materials for each section of music lessons

and the correct choice of visual aids;

7. Select the methods that give the most effective results;

8. In the process of studying each piece of music, students' emotional

taking into account individual characteristics in the process of emotional perception;

9. Accuracy of the organizational part of the music lesson;

10. Proper organization of individual and group work of music lessons;

11. Identify the variety of styles, content, emotionality and tempo of the work to be done;

12. Develop and gradually implement an individual work plan for students with low musical ability;

As important and significant as national elegance is in the development of the spiritual life of our republic, cultivating a sense of national pride is also perfected as a spiritually mature, morally mature person with a deep sense of national values. is an invaluable tool in finding. Therefore, the effective and appropriate use of spiritually mature traditions, the national musical heritage of the people has become an increasingly important educational problem today [8]. This is due to the fact that today, through various technical means, "dance" (or rather rhythmic movements), shouting, crying, making noisy groans, and the main modern pop art As a result of the "internationalization" of singing (translating the music of other nations into Uzbek, using the melody, imitation, etc.), the Uzbek people have a real, international, unique, unique traditions and style. It is observed that young people are deprived of art, and are replaced by interest in fake art.

We all know that the love of music, art, music culture is formed in our people from childhood in the family. It is no exaggeration to say that in our country it is difficult to find a person who does not have a dutar, doira or other musical instrument at home and does not feel the life-giving effects of music in his life.

Most importantly, the art of music today has a greater and stronger influence than any other art form on the development of our young generation in the spirit of national pride and pride.

In this regard, it is necessary to teach the younger generation their attitude to national spiritual values in accordance with the feelings of national pride, the main tasks in this regard, the analysis of the theoretical basis of the problem and the methods of work that provide a positive solution. One of the most pressing pedagogical problems is the identification of conditions, pedagogical conditions and opportunities, the education of students through the art of music, the development of a scientific and pedagogical system for the formation of national feelings of pride in them through these arts. lib remains.

The art of music has served as a means of educating and enriching people at all stages of social development.

In today's world, with the advancement of science and technology, the educational value of music has increased.

In conclusion, it should be noted that our national music, at all stages of development of world music culture, with its charm and deep philosophical content, serves as a spiritual nourishment to the human mind, giving them a sense of national pride and pride. has given them aesthetic pleasure. Proper organization of music education and upbringing in Uzbekistan, along with our national and modern musical values, has created the conditions for the full and effective use of all the opportunities of world music culture. Therefore, our national music will always be a unique source of education in shaping the spiritual world of our youth, instilling in them a sense of national pride and dignity, as they grow into harmoniously developed people.

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COINS FROM THE TIME OF AMIR TEMUR AND THE TEMURIDS KEPT IN THE FUNDS OF THE TERMEZ ARCHAEOLOGICAL MUSEUM

Abstract: *This article is not only about the monetary policy of Timur and the Timurid dynasty, which has left an important mark on the history of Central Asia, Asia Minor and Europe, but also about 10,000 silver and copper coins of the Timurid and Timurid period. information is given.*

Key words: *monetary reform, coin, amir, miri, Amir Temur, Ulugbek mirzo, Termez Archaeological Museum, numismatics fund, fulus.*

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Introduction

It is known from history that in the medieval Islamic world, the founder of every state was absolutely independent, first by adding his name to the sermon and then by minting coins in his name. The activity of our great ancestor Amir Temur in this regard is also noteworthy. When Amir Temur came to power in the Chigatay ulus in 1370, there was a question of minting coins in his own name

Until that time, as a result of the monetary reform carried out by Kebekkhan in 1321 in the Chigatay nation, the minting of silver dirhams weighing 1.4 grams and silver dinars weighing about 8 grams was introduced according to a single pattern. 1 silver dinar was equal to 6 dirhams [3. 27-p]. Today, a group of scholars claim that Amir Temur did not mint coins in his own name when he came to power, but in any case, the first coins minted in his name date back to 1372 [3. 27-p], other scholars say that Amir Temur minted his first coins in 774 / 1372-1373 according to the model of the Chigatay khans, but by 1380 he carried out a monetary reform and introduced a new type of money states that he tattooed on behalf of [1. 41-p]. This means that for a short period of time, the coins of the Mongol khans, which began to be minted as a result of the Kebekkhan reform, were in circulation in the kingdom. Amir Temur minted gold, silver and copper coins, but rarely minted gold coins. In particular, in 1380 he minted gold coins in Samarkand and Khorezm [1. 41-p]. The coins that Amir Temur began to mint differed from the coins of other periods in a number of features. These include stamps printed on minted coins.

They consisted mainly of round, rectangular, and flower-like (mostly pomegranate) -like patterns, and so on. Along with the name of Amir Temur, the coins are engraved with the names of the Sagti Mongol khans who came to the throne. In 1372-1388, Suyurgatmishkhan was tattooed after his death under the name of his son Sultan Mahmudkhan until 1402, that is, until his death. Amir Temur called silver coins 6 grams of coins and 1.5 grams of "amiri" or "miri" [1. 41-p].

On the coins of Amir Temur we read Arabic, Persian, Turkish and Mongolian words, for example, Arabic خالد تا سلا الله (may God perpetuate his kingdom and sultanate), Persian - عرب (zarb), Turkish - swzm (word), یرلiẖẖی (label) -Ąkmnw, (akmanu-my word), we come across words like kwrką n (groom) [2. 14-2]. During the reign of Amir Temur (1370-1045) not only

in the central cities of Movarounnahr, but also in Khorasan, Iran, Azerbaijan, including Astrabad, Ashpara, Baku, Basra, Baghdad, Bamiyan, Damgan, Darband, Yazd, Isfahan, Kashan, Karshi, Kerman, Qom. , Was minted in about 40 cities such as Mordin, Mahmudabad, Mashhad, Sova, Samarkand, Sultaniya, Tabriz, Khorezm, Shabanka, Sheroz, Shamakhi and Herat [4. 2 tom 136-s]. In addition to the above-mentioned regions, the rulers of India, Turkey, Damascus and Egypt also minted gold and silver coins on behalf of Amir Temur. For example, Ibn Arabshah states: “After the victory of the Turkish sultan over Boyazid, one of his sons ..... Isfandiyar (Amir) came to Timur and obeyed. ..... stabilized Isfandiyar for his position in Rome and ordered him to deliver a sermon in the name of Mahmudkhan and Amir Temur to the emirs around him and mint money. ” [7. 278-p]. Another historian, Sharafuddin Ali Yazdi, wrote in his Zafanoma: provides information [6. 271-p]. Of course, during this period, the state paid special attention to the purity and weight of gold and silver coins. At the same time, these coins retain the originality and elegance of local ornaments, and these features are clearly visible in the coins minted in Herat, Mashhad, Isfahan, Tabriz and Baghdad. Another peculiarity of Amir Temur's coins is that on March 13, 1403, his beloved grandson and Crown Prince Muhammad Sultan died. As a result, Amir Temur, deeply saddened, minted coins in his name to commemorate his deceased grandson. Coins سلطا ن محمد خا ن امیر تیمور کور کان امیر زا د ه محمد ساطا ن ضر ب سمر قند

(Sultan Mahmudkhan Amir Temur Koragon Amirzoda Muhammad Sultan, tattoo Samarkand). That is, of the three men mentioned, Mahmud Khan, Amir Temur, and Muhammad Sultan, only Amir Temur was alive at that time. Despite the fact that Mahmudkhan, the son of the late Suyurgatmishkhan, who was officially considered a khan, had died some time ago, Amir Temur did not want to bring another puppet khan to the throne, and only minted coins in the name of Mahmudkhan. As a result, in connection with the death of his beloved grandson, his name was engraved on coins along with his own name [2. 16-2]. Attention to the coins minted by another grandson, Khalil Sultan, who came to power after the death of Amir Temur. If we give, we will see such names: ساطا ن محمد جها نگـیر اما ن الز ما ن امیر خلیل ساطا ن حلد الله ملکه ۸۰۷(Sultan Muhammad Jahangir, the late Amir Khalil Sultan, may God bless him and grant him peace. 807 / 1404-1405). This means that Khalil Sultan, who conquered Samarkand, did not sit on the throne himself, but brought to the throne Jahangir Mirza, the son of the late grandson of Amir Temur, the heir to the throne Muhammad Sultan [1. 56-b]. When Amir Temur's son Shahrukh Mirza took power, the words of faith on the front of the coins and the names of the 4 caliphs, and on the back ر حلد الله ملکه و سلطا نه ساطا ن ا لاغظم شا هر ح بها د (Sultan az-zamon Shohrh bahodir khaldollah mulikuhu wa sultanahu) [1. 60-p]. Of the Temurids, only the coin of Shahrukh Mirzo's son Mirzo Ulugbek mentions the seal of his grandfather Amir Temur and the name of Sahibkiran. تیمور کور کان همتی د ین الغ بك کور کان سو زم ضر ب سمر قند ۸۵۳ (Timur Koragon Himmatidin Ulugbek sozim: zarb Samarkand 853/1449) [1. 64-p]. Mirzo Ulugbek, like his grandfather, was as attentive to coinage as he was to reform money. 1428 Previous copper coins were banned from commercial use and a decision was made that it could be replaced with new copper coins. In Andijan, Tashkent, Shohkuhiya, Bukhara, Samarkand, Karshi, Termez and Gissar, new coins will be minted in a single copy to make it easier to exchange old coins. Upon completion of the exchange process, all mints except Bukhara will be closed [5. 34-p]. The reason why coins minted in Bukhara in 1428-1429 were widespread not only in Bukhara but in the whole of Central Asia Coins were also minted in [1. 65-p]. Today, the Termez Archaeological Museum has a total of 28,000 exhibits in numismatics, the largest of which are coins from the period of Timur and the Timurids. Most of the numismatic exhibits of Timur and the Timurid period, when the museum was established, consisted of coins received from the numismatics department of the Museum of Local Lore. From this it can be concluded that these exhibits have been enriched as a result of archeological research and random findings conducted in the region since the 1940s. To date, most of these coins not studied at all and no catalogs compiled. Due to the lack of specialists, the coinage is kept under a common name in the income books and fund documents only on the basis of initial data. As an example, when the author examines several coins with the inscription "Silver coins struck by Amir Temur in Samarkand" in the relevant documents kept under the number KK 11999, it is known that these coins were minted by Suyurgatmishkhan and Amir Temur, Mahmudkhan and Amir Temur in Samarkand, Khorezm, Tabriz and Isfahan. Was In conclusion, it can be said that by studying the coins kept in this fund, one can find the answer to many unknown pages of our history related to the period of Amir Temur and the Temurids.

Table 1.

№	KK number	The name of the item	Material of the item	Number of items	Item weight (grams)	Item size (cm)	Color photo of the item	
							Аверс	Реверс
	7586	Ulugbek coins minted in Samarkand and Bukhara	Мис	486	4,29-7,28	2-3,4		
	8030	Ulugbek coins minted in Samarkand and Bukhara	Мис	444	3,20-8,08	2,2-2,8		
	8348	Ulugbek coins minted in Samarkand and Bukhara	Мис	318	4,19-5,9	2,2-2,6		
	9469	Ulugbek coins minted in Samarkand	Мис	152	3,51-5,08	2,1-2,5		
	9713	Ulugbek coins minted in Gissar	Мис	244	9,07-13,87	2,1-2,5		
	10118	Ulugbek coins minted in Samarkand and Bukhara	Мис	273	3,0-5,30	2,2-2,8		
	10215	Coins minted in Bukhara	Мис	97	2,11-3,17	2,4-3,3		
	10355	Timurid coins minted in Gissar	Мис	140	5,0-9,63	2,1-3,0		
	10914	Timurid coins minted in Bukhara and Samarkand	Мис	134	3,24-8,06	2,1-2,8		
	11171	Timurid coins minted in Bukhara and Samarkand	Мис	61	4,56-5,80	2,3-2,8		

	11221	Timurid coins minted in Bukhara	Мис	50	3,67-5,20	2,1-2,5		
	11379	Timurid coins minted in Bukhara	Мис	158	3,31-5,47	2,0-2,5		
	11699	Timurid coins minted in Bukhara and Samarkand	Мис	320	3,17-7,34	2,0-3,0		
	11999	Timurid coins minted in Samarkand	White metal	300	1,30-1,80	1,5-1,8		
	12086	Timurid coins minted in Samarkand	White metal	87	1,22-1,77	1,4-1,9		
	12171	Timurid coins minted in Samarkand	White metal	85	4,97-6,32	2,4-2,8		
	12861	Timurid coins minted in Bukhara and Samarkand	Мис	370	2,13-7,61	2,0-2,8		
	13621	Timurid coins minted in Bukhara and Samarkand	Мис	760	3,39-7,56	1,8-2,9		
	15021	Timurid coins minted in Samarkand, Bukhara and Gissar	Мис	1400	2,83-7,54	2,0-3,0		
	17293	Timurid coins minted in Bukhara and Samarkand	Мис	2272	3,67-8,90	1,5-2,5		
	19729	Timurid coins minted in Bukhara and Samarkand	Мис	2436	2,30-9,17	2,0-2,9		

	24769	Timurid coins minted in Bukhara and Samarkand	Мис	482	3,53-6,30	1,5-2,5		
	25065	Timurid coins minted in Bukhara and Samarkand	Мис	296	3,39-7,30	1,3-2,8		
	25075	Timurid coins minted in Bukhara and Samarkand	Мис	10	4,0-6,72	2,2-2,7		
	25200	Timurid coins minted in Bukhara and Samarkand	Мис	125	3,59-7,33	1,9-3,0		
	25379	Amir Temur coin	White metal	25	4,90-6,11	2,4-2,8		
	26422	Самарқанд, Бухоро ва Хисорда зарб қилинган Темурийлар тан Timurid coins minted in Samarkand, Bukhara and Gissar галари	Мис	668	3,56 – 6,75	2,2-2,8		
	26830	Samarkand, Bukhara and Gissar coins	Мис	239	2.96 – 5.65	2,1-2,7		
	27526	Timurid coin	Мис	440	3,08-5,09	1,8-2,6		
	27538	Bukhara coins	Мис	12	3,28-7,20	2,0-2,8		
	27590	Bukhara coins	Мис	52	3,24-6,77	2,2-2,8		
	27810	Timurid coin	Мис	14	4,11-6,84	2,1-2,8		

	27829	Ulugbek's coin	Мис	19	3,86-8,27	2,3-2,6		
	27851	Abu Said coin	Мис	22	3,93-9,21	2,2-2,6		
	27901	Sultan Ahmad coin	Мис	50	4,22-5,80	2,3-2,5		
	27964	Timurid coin	Мис	22	3,79-8,40	2,3-1,8		
	27982	Timurid coin	Мис	18	4,60-10,50	2,3-3,1		
	34461	Timurid coin	White metal	19	5,16-6,20	2,5-3,0		
	34462	Timurid coin	White metal	34	1,45-1,60	1,5-1,8		
	29784	Timurid coin	Мис	80	3,36-9,92	2,1-3,0		
	29826	Timurid coin	White metal	3	4,32-5,75	2,2-2,4		
	31924	Timurid coin	White metal	2	1,83-1,90	1,6		

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HOUSING CEREMONIES IN SURKHAN OASH

Abstract: *In this article, the author provides information about the rituals and traditions associated with housing in the Surkhandarya oasis, based on field research and scientific sources.*

Key words: *star, tax, tandoor, potter, bibimushkul.*

Language: *English*

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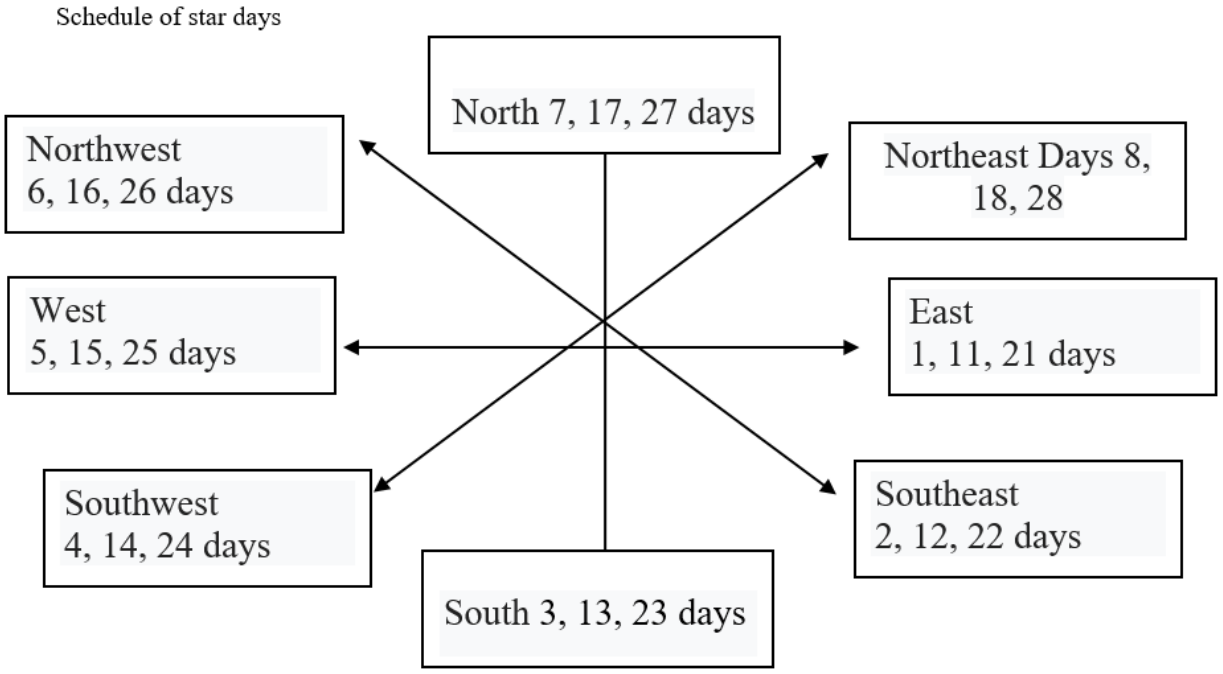
Introduction

When we scientifically study the settlements in the Surkhandarya oasis, we see that our ancient ancestors took into account the environment, which is compatible with nature and climate, protects from various harms, considered housing as a means of protection, upbringing and protection of generations. In particular, our people, who consider the home sacred, sought to live away from cemeteries, shrines, and the like, and did not want to disturb the spirits of the past. They tried not to demolish the old buildings as much as possible. In the course of research conducted in Boysun, Sherabad, Sariosiya, Kumkurgan, Muzrabat districts, demolition of old houses and construction of new ones it became known that during the construction of houses, rituals such as "is" dedicated to the spirit of the ancestors, reciting verses and praying were performed. According to the population, if such ceremonies are not held, accidents can occur during demolition or construction [1]. Until the middle of the twentieth century, if the people of the Surkhandarya oasis were determined to do good deeds, whether they wanted to travel, get married, build a house or move from another place, they would come to a knowledgeable person and ask him where the lucky star was. Knowing the location of the star was a very delicate and complex matter. Because the star cannot be seen with the naked eye. It was determined only by the rising of the moon. According to Hayitkul Bobo Rakhmonov (born in 1938), a resident of Khatak village, Sherabad district, local astrologers have taken into account the 24 days of the rising star. The star is guided by the three-day appearance of the new moon. From these three days the first day of the month is determined. If the moon is three days old, for example, it appears on a Wednesday, then the first day of the month is considered a Monday. Accordingly, the end of the month can be calculated. Three times a month: 1, 11, 21. On these three days the star is in the east. Three times two: 2, 12, 22. On these three days the star will be in the southeast.

There are three. 3, 13, 23. These days the star is in the south. There are three to four: 4, 14, 24. These days the star is in the southwest. There are three to five: 5, 15, 25. These days the star is in the west. There are three sixes: 6, 16, 26. These days the star is in the northwest. There are three sevens: 7, 17, 27; these days the star is in the north. There are three eights: 8, 18, 28. These days the star will be located in the northeast. A total of 24 days were accounted for separately. The star rotates every eight days. And three times a month. During this period, it was considered expedient to walk towards the back of the star, not against it. For example, if you want to move or walk south, the star should be north.

Three to nine - 9, 19, 29 days the star will be on earth. These days, the star is nowhere to be seen. Three ten - 10, 20, 30 days, the star will be in the sky. During these six days, that is, three, nine and three dozen

people could easily travel, move, and get married wherever they wanted. The star will be on the east side on the first day of the month. The second and third rounds will also be on the east side. The Gregorian calendar is not suitable for determining the star. To do this, use only the lunar calendar. In the lunar calendar, the beginning of each month falls on a Wednesday where the three-day moon appears, and from that day the star detection begins. This star, which is associated with human destiny, is called zuhal. He is said to be sharper than a bullet. People who want to move somewhere, such as those who plan to walk south, need to turn their face south and raise both hands to their side if they want to get the star days right. He should look to the right or left with his eyes without moving his body and head. The back of the hand must not be visible. Even if it is not visible or barely visible, the star will be calculated correctly. If the position is visible, then it is necessary not to walk in that direction. If this star doesn't pass through its two wings, what it wants to do will fall right. He thought it could hurt if he walked against the star. Therefore, if the day of the walk of the person who wants to move does not correspond to the star, they put a sign (felt, bed, bed, pillow) from the house as a tax on the destination. After that, although the star days did not coincide with the day of migration, they were able to move freely.



Picture 1.

Adolat momo Kungratova (born in 1932), a resident of Angor district, said residents of Kohitangtog villages had, of course, bled before demolishing any part of their homes, such as walls, shops and even toilets. The ceremony was to be presided over by elderly people - grandparents. They slaughtered a goat, brought the scribes, grandparents, and received blessings from them as guests. He thought that if he did that, my work would go well. If a sheep or a goat is not strong enough, a rooster is slaughtered. Because the rooster was considered equal to a sheep. Before building a house in the Sherabad area, sheep were slaughtered on special days of the week and neighbors were called. The first to stone the wall of the house after the hospitality the rest were left by the rich, the old, and the rest by the young. In the villages of Sherabad district, such as Vandob, Poshkhurt, Maydon, Khatak, Sherjon, Karabakh, Zarabog, Kallamozor, Laylagon, all those invited to build a house brought a stone to the wall of the house on the first day, and then dispersed as guests. The construction of the house was started by the landlord with his family members, the first row of the house foundation was laid by the landlord and the rest was organized by the landlord [5].

In other parts of the Surkhandarya oasis, when the foundation of the house was laid, before entering the house under the concept that "a snake enters the house, a snake is a sign of wealth, vigilance," the walls are sprinkled with flour. When the house was ready, a woman was the first to enter it as a symbol of purity, kindness, any living thing was slaughtered and

donated as payment for a new home, and verses were recited to cheer the spirits of the past. Before dismantling the oven, of course, a new oven had to be brought. Only then could he break the oven. He thought that if he did not do so, the family would suffer. Destroying the tandoor was considered tantamount to destroying the state. It is said that inside the oven was the spirit of a potter. If the tandoor broke down, it would take the form of an ant and cry, saying, oh, drive me naked, through the doorway. For this reason, first bring a new oven, and after three days installed. As the potter entered the oven. After the new house was built, the first incense was brought and rested on it. Then they hung it on the doorstep of the house. Then he would slaughter a cow, a kid, a rooster that he couldn't, and he would cook a soup. Pati for boiled soup, and those who are strong, cooked katpatir. Then came one who was married, whose child was not dead, who was happy, who was whole, who had many children, and who could not find such people. They first brought a large box into the new house. They walked straight ahead and went in without a hitch. The ark was considered the greatest wealth of the nation. They brought in a large rug after the box. When this is done, the two go outside and write the surpa. He puts the surpa from it in a sack with a bowl made of willow. He takes the flour from the first bowl and puts the flour in the bowl, saying that this is the husband, the flour in the second bowl is the wife, and then several times these are the children. Eventually the surpani closes. He puts two loaves of bread on the table. Grandpa and Grandma gave the table to the host with a surpa and stood at the door to pray. When this was done, the idea was that the family table would always be full of bread. Then grandpa and mom smoke incense with a pot or a loaf inside the house.

Normally, the incense should be lit until the host enters. The incense had to be lit even before the box was brought in. It was thought that incense would drive away all the filth from the house. Only after these measures were taken did the landlord move into a new home. A similar ceremony was held at the new black house built for the groom. People who had an old black house did not hold this ceremony when they were moving somewhere. Instead, the women held a bibimushkul ceremony, cooked shirguruch, and invited the women as guests. They then demolished the house and moved it to another location. [7]

In conclusion, the peoples of Central Asia since ancient times one part was settled, the other part was nomadic and semi-nomadic. In this regard, in the late 19th and early 20th centuries, the semi-settled population of the Surkhandarya oasis built their homes based on the region's natural and geographical, climatic conditions, traditional lifestyles and occupations, and mastered the positive aspects of millennial housing traditions.

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QR – Issue QR – Article

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SOME ISSUES OF THE STUDY OF TERMS

Abstract: *This article explores the linguistic study of terms used in the social sphere, the meaning and important features of terms, their goals and objectives, their place and importance in language and culture. In addition, it includes such objectives as cognitive and conceptual analysis, construction and study of lexical-semantic features of social terms of modern English and Uzbek languages in linguocultural studies.*

Key words: *term, terminology, field, linguistics, social, lexicon, terminological system, specialist.*

Language: *English*

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Introduction

In our country, we are witnessing political and social changes in every sphere, every minute, leading to radical changes. We can also include linguistics in such a field. In all spheres of linguistics, bold steps are being taken to study theoretical issues in more depth and depth, and a number of practical works are taking place. The publication of dictionaries in different languages, ie monolingual, bilingual or more, general philological or terminological, can also vividly demonstrate the achievements of our linguists. At present, in Uzbek linguistics, the terms of various disciplines are being studied intensively, which is closely related to the development of disciplines and the level of application of scientific achievements in production, the development and enrichment of terms. With a comprehensive study of the terms, great attention is also paid to practical issues such as their regulation and stabilization. But despite such achievements, working on terms remains one of the most important and pressing issues of today. In Uzbek linguistics, terms related to cotton, botany, linguistics, literature, medicine, chemistry, electrical engineering, folk arts and other fields have been studied linguistically, and some recommendations have been developed for their regulation. did not occur. The main reason for this, in our opinion, is that, firstly, the formation, development and enrichment of existing terminological systems in the Uzbek language are not the same, and secondly, is that the terminology of some disciplines is not yet well or studied at all. The terminology of the Uzbek language in the chemical industry is one of them. It is important to find alternatives to the Uzbek language in the translation of terms from the foreign languages of the chemical industry and to eliminate the problems encountered in the translation process. Many terms related to the chemical industry came into Uzbek from Russian, and from Russian from Latin, Greek, English, French and many other languages. The study of such terms is one of the most important issues facing linguists and linguists. Terminology is currently one of the most diverse topics in the focus of world linguistics. Terminology is also not in vain, as the vocabulary of each language develops very rapidly, as it allows the creation of new words. A word or phrase in a particular field of knowledge, industry, or culture is called a term. The meaning of a word that the term expresses is interpreted by interpreting it in a relevant literature. Each department or school of science develops specific terminology to suit its own nature and methods. Such specialized terminology is an important part of scientific research and is of paramount importance.

Because it contributes greatly to development. In our opinion, the content of the term "term" should be based on the following features, as we consider it sufficient to distinguish the term from the common

word: "1) the term - one of the most important lexical layers of the literary language, representing the concepts of science, technology, industry, profession is a special lexical unit; 2) the term is a specific name of a special thing, object or abstract concept; 3) a certain definition of the term is necessary, this definition should more accurately express the content of the relevant concept, to distinguish one concept from another, at the same time to classify a certain concept into a certain classification line. helps to show more clearly the characters that make it possible to place. " Hence, terminology is defined as a system of terms that interacts with a system of concepts of a particular science. Terminological systems are evolving along with the development of science. Unlike common words, the use of terms is under certain control.

Although the terms are words that clearly express the concepts of a particular field, but the use of these words does not have to be limited to the range of people in that field. Two cases can be seen in this.

1. The meaning of the terms is understandable even to those who are not related to the field and can be used by them as well. For example, botanical wheat, cotton, apricots , grapes, pears; art scene, poster, actor; such as medical injections, anesthesia, flu.

2. A certain part of the terms is understandable to people in the field to which the term belongs, and these are used in speech: linguistic morphemes, phonemes, accents, stems; chemical oxides, such as indicators.

It should be noted that commonly used words can be used as a term to express a concept related to a particular field, becoming a term.

In such cases, the word belongs to the general lexicon with its original meaning, and to the terminological (limited) lexicon with its special meaning. The question of the term, that is, how many parts it consists of - its conciseness - is also a matter of controversy, and it is not clear whether this phenomenon is positive or negative. It is well known that one of the requirements for a term, but not always achievable in practice, is its requirement to be concise. Even in the initial definition of the term, it was treated as a single word, and even then as a word belonging mainly to the word family. It is also used as a term in the definitions of the term the exact composition of the compounds, i.e. how many parts it consists of, is not given. However, in most terminological systems, terms consisting of two, three parts, as well as five, six, seven or even more parts terms can be found. For example, 94% of Uzbek chemical terminology includes five- and six-part terms in addition to the two-part compound term.2 Supporting this fact, it should be noted that in the Uzbek chemical industry terminology, sodium bromide, related to catalysis, there are multi-component compound terms such as having colloidal properties. Some sources also suggest that the terms may consist of 15 components. The change of terms in linguistics and the emergence of new terms are inextricably linked with the development of science and technology. The fact that technical skills now go beyond a certain narrow range and have a mass character, and that experts in various fields make extensive use of scientific and technical advances in their daily work, requires a high level of demand for terminology and the elimination of inconsistencies between its current state. Because as science and technology play an important role in life, so do the terms used to acquire, manage, and develop it. In this regard, the regulation of terms is of great scientific and social importance. It is sometimes thought that terminology is a complex field in modern linguistics. It is not a complicated matter to make sure that such opinions are unfounded. Terminology research does not affect validated opinions and specific dictionaries based on any scientific accuracy. All terms used in linguistics should be used only in scientific research of language.

Because such terms are interesting and understandable for linguists working in this field. When thinking about language, it is not uncommon for most of the words used in linguistics to be left out, and in general, terms specific to traditional grammar are more abstract than terms used in modern linguistics. Linguists modify or supplement terms in known non-specializations.

First, many traditional terms are not sufficiently clear in expressing scientific concepts. Second, in the direction of modern linguistics itself, the general theory and structure of language has changed significantly through modern and traditional grammar. In terminology, we can see that there is a misunderstanding of specific terms expressed in language and issues of unambiguousness.

The regulation of terminology is an issue of great importance not only in the scientific field, but also in social life. It is known that the issues of terminology include scientific and technical production, profession, vocabulary of various industries, relevant words and phrases in all spheres of social life. The history of these concepts is related to the life of the people, its material and spiritual aspects, and the study of all of them, The transformation of language into property is one of the most urgent areas of research in modern linguistics. The study of terminological systems in the Uzbek language is now of great importance. The international prestige of the system is growing due to the fact that our native language has been given the status of the state language and is beginning to appear on a global scale. In general, terminological systems, unlike other language systems, occur in the process of classifying, systematizing, and defining scientific concepts. The structural nature of terminology cannot be justified without going beyond language. Systematicity in terminology is primarily related to the fact that

scientific knowledge itself is systematic and hierarchically structured. Based on the above considerations, it is necessary to distinguish between the concepts of "Terminology" and "Terminological system". Indeed, in relation to terms, experts in the field and terminologists work together to ensure that the terms being modified or replaced are simple, concise, most importantly, they would contribute to making it understandable to the public. Preserving the linguistic riches of the native language, which embodies the centuries-old experience of each nation, its scientific analysis, and its transmission to future generations is one of the important tasks facing modern science, especially linguistics.

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THE PROBLEMS IN TEACHING ENGLISH FOR SPECIFIC PURPOSE

Abstract: *In teaching English for Specific Purpose (ESP), teaching materials are focused on the learners' needs and their specific fields of study so that the students develop basic language skills of general English. The purpose of this article is to analyze the problems that arise in teaching English for specific Purposes in higher education.*

Key words: *English for Specific Purpose (ESP), problems in teaching, higher education.*

Language: *English*

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Introduction

Teaching English in higher education should be directed to the specific purpose in relation to students' specific fields of study and future career. The subject of the present article is an overview of main problems in teaching English for Specific Purposes (ESP) at university level. Today, it is actual topic to discuss what to teach and how to teach a foreign language taking into account the objective social and professional needs of future specialists in our country.

Materials and Methods.

By taking ESP courses at higher education, students are hoped to know the specialized vocabulary so that they are able to read and find information related to their field in English. ESP course is oriented towards mastering skills for professional communication. There are many subdivisions of ESP. For instance, English for Business Purposes, English for Medical Purposes, English for Occupational Purpose, English for Computer students, Business English, English for Agricultural students, English for Accounting, English for the students of Psychology. These subdivisions are based on the needs' analysis to meet the significance mentioned above. Since ESP is intended for specific disciplines, the methodology used in class should be designed in such a way to fulfill the learners' need. First, let's define the ESP:

- ESP makes use of underlying methodology and activities of the discipline it serves.
- ESP is centered on the language appropriate to these activities in terms of grammar, lexis, study skills, discourse and genre.
- ESP may be related to or designed for specific disciplines.
- ESP may use in specific teaching situations, a different methodology from that of General English.
- ESP is likely to be designed for adult learners, either at tertiary level institution or in a professional work situation.

Strevens' identifies absolute and variable characteristics of ESP and makes distinction of the definition between four absolute and two variable characteristics of English language teaching. Absolute characteristics are:

- designed to meet the specific Techniques for ESP Students in Teaching English needs of the learner;
- related in content to particular disciplines, occupations and activities;
- centered on the language appropriate to those activities in syntax, text, discourse, semantics, etc;

- designed in contrast with General English (GE).

Variable characteristics are:

- restricted as to the language skills to be learned (e.g. reading only)
- taught according to any pre-ordained methodology.

According to Dudley-Evans and St. John, ESP has absolute characteristics include:

- ESP is defined to meet specific needs of the learner;
- ESP makes use of the underlying methodology and activities of the discipline it serves;
- ESP is centered on the language (grammar, lexis, and register), skills, discourse and genres appropriate to these activities.

Variable characteristics of ESP are modified into:

- ESP maybe related to or designed for specific disciplines;
- ESP may use in specific teaching situations, a different methodology from that of general English;
- ESP is likely to be designed for adult learners, either at a tertiary level institution or in a professional work situation. It could, however, be for learners at secondary school level;
- ESP is likely to be designed for intermediate or advanced students (Dudley-Evans and St. John, 1998, pp. 4-5).

Hence, the primary goal of the ESP course is to teach professional communicative competence that is the ability to communicate in English according to the situation, purpose and specific roles of the participants. The ESP course builds on and extends the foundations for accurate communication and extends the learner's grammatical, lexical and functional skills.

Results and Discussion

One of the challenges and problems in teaching ESP at university level is that the first-year students often have different language background. In this regard, we can introduce diagnostic tests followed by an introductory English course in order to know the needs of the students. The goal of the diagnostic test is to check students' knowledge in English and to prepare the teaching materials if students are ready to take on a Basic Course of ESP. The objects of test are lexical, grammatical and reading skills. Usually the test is based on the 400 most frequent words of school vocabulary / lexis inherent in the Basic Learner's Course, about 15 school grammatical items and 2 texts. The results of the test will show whether a student entering the university is ready to take on the Basic Course of ESP or not. As the result, the diagnostic test shows if there is a need in an introductory course. The introductory course should be devised as a transition course from the general English school course to the university course in ESP. The goal of the course is to review key language features taught at school as well as to form and develop reading and speaking skills of the ESP course. So that is one more teaching problem in ESP at university level.

Another important aspect to be taken into consideration is that teaching methods must be learner oriented. In other words, ESP is concerned, first and foremost, with satisfying the real needs of the students and not with revealing the knowledge of the teacher. The intensive and efficient teaching of grammar, vocabulary, translation, etc. must be scientifically grounded and concentrate only on those items which students actually need for the purposes specified at the beginning of the university course. This is an important statement which in theory is universally accepted but in practice is hardly ever followed.

Another point to remember while teaching ESP nowadays is that it is necessary to consider the changes in the nature of students' need and the context in which they live, study and work. In any case the syllabus of ESP must improve the students' skills in all the aspects of language activities. The goal is the development of professional qualifications, for practical training abroad, for work in joint ventures, etc.

To make good progress, students have to practice various language activities, related to reception, production, interaction (or mediation, on particular interpreting or translating) and each of these types of activity being possible in oral or written forms.

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QR – Issue QR – Article

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THE ROLE OF EDUCATIONAL TECHNOLOGY IN SHAPING THE PROFESSIONAL STABILITY OF STUDENTS

Abstract: *This article covers the importance of educational technology that develops future teachers in the formation of skills related to professional stability in the pedagogical process.*

Key words: *profession, stability, process, education, need, school, practice, pedagogical activity, prints,game, development, technology, skill.*

Language: *English*

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Introduction

President of the Republic of Uzbekistan Shavkat Mirziyoyev has created conditions for the regulation of legal, social and economic relations in connection with teaching activity and full expression of the legal status of teachers, ensuring its professional activity, socio-economic status, introduction of social protection guarantees. At the time when such opportunities are being created, giving future teachers a correct understanding of the basic printing techniques of their pedagogical activity will also serve to ensure the stability of future activities. Therefore, to the future teachers:

-recognizing the right and freedom of the educated, with respect to national values;

-to teach how to respect universal and national values and seek ways of using them effectively;

-continuity and tracing of education, free co-operation in the selection of methods and forms of pedagogical activity is an integral part of the pedagogical activity of the future teacher;

-by absorbing the need to improve their knowledge on the basis of the latest achievements of science;

Technology and culture, recognizing the uniqueness of educational printouts, future teachers are increasing their enthusiasm for their chosen profession. It is inevitable that the emergence of enthusiasm will lead to the emergence of mexr and loyalty to the chosen profession in students.

We believe that the following works are necessary for future teachers to adapt and enjoy their chosen profession:

- the correct orientation of the management staff towards young people;
- show prospects to young staff;
- to encourage;
- protection of young teachers;
- introducing new advanced styles and techniques;
- creation of sufficient conditions for the implementation of professional activities;
- to create conditions for work on the basis of workplaces in accordance with the procedure established by the legislation;
- protection of honor and dignity;
- not hindering the free expression of one's own mind, etc., causes young teachers to love their profession and conduct activities.

Today, in the shape of the professional stability of the future teachers, it is explained to the students that the teacher should determine the direction and purpose of the development of the educational process. It is guaranteed to achieve the intended goal only if it inspires the students in the educational process and turns them into a community.

Factors considered important in the formation of professional stability in future teachers:

- the fact that some schools do not meet modern requirements;
- textbooks and some problems in their quality;
- some schools are fully equipped with modern computer sets;
- some schools do not have sufficient connection to the internet or performance speed is not required;
- the number of students in some secondary schools is more than their capacity;
- one other due to lack of teachers in some subjects situations such as the fact that the science teacher is assigned the task of following this science cause the need and interest of the young teachers to work to be faded.

Alternatively, such situations negatively affect the young teacher's ability to work and work at the required level. The most sad situation is that such cases in itself lead to the non-resettlement of teachers in schools.

Every student who goes to school practice, going to pedagogical practice borganda, seeing the real life in school, his enthusiasm for pedagogical activity is slowed down. For example, a holistic system for students to gain in-depth knowledge is not working. The obligations of parents in connection with the creation of sufficient conditions for the acquisition of education by their children have not been fulfilled in a timely manner, the serial laying of blame on teachers is also an obstacle to the maintenance of professional stability. Since many parents are not satisfied with the educational activities in the school, they are giving their children to the tutor for admission to higher education. The main reason for this is that most of the school teachers do not work on their own. This is explained by the fact that the monthly salary is low. The student who sees this is considered to have settled in an unsatisfactory school and prefers to do tutoring. Because there is much difference about the work between ikkalasinin. In ensuring the professional stability of future teachers, it is possible to achieve the state educational standards, as well as improving educational plans and curricula, critically revise the content, quality of textbooks.

In order to achieve the professional stability of the future teachers, it is worthwhile to use the educational technologies that are being developed.

The course process is a constant factor of development, which together with the teacher is the product of the constant action of both passive and active interaction of the student. As long as the lesson is not organized by such factors, the two activities in the process will also be neglected.[1]

Therefore, flexibility in students will be realized if the future teachers will be able to make effective use of the educational technology that they are developing in ensuring professional stability. In this “game-the phase of "internal socialization" of the child”, the means of mastering social ustanovka” (L.G.Vigotsky) [2] the student who realized that he would serve as a teacher will be ready to work with them. It should be remembered that “the action that has a significant purpose for the indvid will be implemented in the game only in terms of its private and internal content. That's the main peculiarity of the game activity, as well as its main attractiveness.(S.L.Robinshteyn) [3]. This means that the developmental characteristics in education will be focused on the exteriors of the educator. "Didactic game is a holistic didactic process in which the individual possesses a certain motivation, the structure of the students' cognitive activity and the control system of assimilation” (V.P.Bespalko) will be able to skillfully manage the educational activities of his students in the future. This means that the students are considering preparing for their future activities. "Professional training is a pedagogical process, which implies the max of intensive acquisition of the necessary skills by the educators to perform a particular set of work or work[4]. In this future teachers:

- scientific thinking;
- memory development;
- tempering the will;
- to master the secrets of the profession;
- complete walk from simple to complex;
- use of pedagogical priority;
- strict adherence to discipline to lose weight;
- as soon as he learns to respect his stubborn personality in higher education, he will be able to work steadily in his chosen profession. Therefore, it is worthwhile for future teachers to work on their own constantly. Taking into account the fact that the formation of adaptation to the profession is carried out in an unconditional pedagogical process, we believe that it is worthwhile for each future teacher to master pedagogical skills in addition to mastering modern pedagogical technologies.

The fact that future teachers are attentive to the above factors for sustainable functioning in educational institutions, implies the fulfillment of the pedagogical requirements imposed on them.

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QR – Issue QR – Article

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IMPROVEMENT OF METHODOLOGICAL PREPARATION OF FUTURE EDUCATORS FOR THE FORMATION OF ECOLOGICAL LITERACY OF CHILDREN

Abstract: *Ecological upbringing is certainly formed on the basis of ecological knowledge, but it also has its own characteristics. In this article highlights of improvement of methodological preparation of future educators for the formation of ecological literacy of children.*

Key words: *ecology, ecological literacy, educator, education, methodological preparation.*

Language: *English*

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Introduction

The ecology question was first introduced into science by the German scientist Ernest Gekkel, who means "roof" or "house". The science of ecology is the current plant ecology, zooecology, soil ecology, human ecology, etc. The science of ecology studies the living conditions or norms of one or more selected objects and helps to determine the optimal level of living. Work in this direction will bring us ecological knowledge, but in this way humanity will not be limited. According to the demand of the period, it is again demanding to work in another direction. If it is also a matter of ecological upbringing.

Ecological education works on the issue of formation of a correct, rational attitude towards nature in a person and sets itself the goal as the formation of an ecological culture in students. The content of environmental education includes environmental consciousness, environmental emotions (relations with nature, people, life). Thus, environmental education plays an important role in the life of a person, in society, in the motherland.

The formation of environmental education will be necessary not only to acquire environmental knowledge, but also to form ecological relations. To environmental relations:

Attitude to life.

Educate a sense of integrity.

Educate a sense of responsibility.

It is possible to include such components as feeling the beauty of nature.

Not only today, but also our ancestors took a deep responsibility for environmental education. For example, in order not to pollute the environment, separate pits were dug to throw out garbage, dump garbage, the toilet was dug in a remote place from the waters of the ditch, shade, Springs, cut down trees that were only dried up for various needs, suffering animals, breaking the nest of birds, counting on sin.

The system of ecological education and upbringing is continued in kindergartens, schools of general education, in the later stages of education and in the labor communities. Through life examples in this place, the low level of environmental literacy in families at the present time is respected. For example, now a lot of people are becoming more and more engaged in the cultivation of their goods, in gardens, even on fruit and landscape trees. After all, in the past our people have kept a special herder to their dependent animals. Or those who have property they're alternately grazing on the herd. For this, as now, the animals were grazing not on the land they encountered, but on separate separate slopes. Or when going out to family holidays, the grass-oats were not paid, in the countryside there were no glass fractures, the remains of food were not thrown away. No harm

has been done to trees, to the world of plants, to animals. The content of the preparation of environmental training includes:

- Environment and its impact on the spiritual world of the individual;
- To determine the nature and its significance;
- Cooperation of school and family in the development of love for nature;
- To increase their interest in landscaping the courtyard of their county, town, village and school, and even in the care of plants in the classroom;
- Environmental protection, in this children's functions;
- Examples of parents in the protection of nature;
- Restoration of national traditions and traditions in environmental education of young people, attention to them.
- In the family, in school, to teach respect for nature, plants and the animal world, to take care of animals and birds.

From the history of mankind it is known that a healthy society creates only a healthy environment.

Ensuring a bright future of Uzbekistan is reflected in the law "on education", the national program of Personnel Training. In this regard, one of the tasks facing primary education is to formulate a conscious attitude of students towards the environment.

Successful solution of such a task requires teachers to have in-depth knowledge in their field, have a high ecological culture, be creative, conduct training on the basis of pedagogical technologies.

A teacher of such qualities should educate a harmonious person who has deeply mastered the theoretical knowledge of environmental education, knows the mystery of the processes in nature, understands its socio-economic and spiritual significance, is in a conscious attitude towards nature. In order for the teacher to be educated, various guides, media, textbooks, extracurricular activities are an important resource.

Educating students in the spirit of respect for nature is not only part of the course process. The lesson is limited in time, in which many important environmental knowledge cannot be taught to students. And extracurricular activities are not limited in terms of time. The development of the environmental knowledge gained by the students in the course of the lesson in extracurricular activities gives an effective result.

Extracurricular work in educating its students in the spirit of respect for nature is a continuation of the knowledge that students receive in the course of the lesson, and they complement the content and combine it into a single whole process.

Extracurricular activities are an additional and free type of education that allows students to engage in creative activities.

Educational trips are of great importance in the study of the world around us. Travel lessons as a form of Organization of educational work is an important tool in the environmental education of students. In the process of nature observation, cognitive activity is formed, the pupils ' perception of the interaction of living and inanimate nature, as well as the plant and animal world.

Communication with nature evokes beautiful emotions in students. Students will adore green lawns, bird walks, butterfly shoots, trees and the diversity of plants.

The purpose of organizing trips is to study the species of trees in the garden, the way of life of plants, insects, birds. The following is an important factor in effective travel:

- accuracy of travel purpose;
- correctly selected object;
- the organization of the trip according to a certain plan;
- clearly developed teaching assignments that serve to direct the attention of students towards the object under observation;
- to ensure that teaching assignments have a problematic feature;
- to encourage students to act freely, independently in the process of observation;
- to achieve a particular level of activity of each student;
- the presence of conditions that allow them to consistently monitor their activities.

In the process of travel, the knowledge that students receive throughout the year is strengthened and the activity of phenological observation increases;

There are a number of ways to introduce readers to environmental concepts during travel: conversation, story, travel, questions and answers, observation, conclusion.

Below is an idea of a travel lesson conducted with educators as an example.

Theme: What is nature? We and nature.

In the introductory conversation of the teacher, the following questions are solved:

1. What is the importance of the environment in human activities?

1. Why do we respect nature and call it "Mother nature"?

How do you behave yourself, so as not to harm nature?

An understanding is given about the fact that the branches of plants and plantations do not break, do not give insects and birds Azores.

Homework: write an essay about your impressions of travel.

On the basis of travel lessons, students should love the beauties of nature, get aesthetic pleasure from them; in-depth study of the relationship between nature and society, as well as the consequences of the

impact of human activities on nature; should focus on educating students in the spirit of nature honors.

An unconventional lesson in the process of travel: role-playing, action-playing, observation methods are used. Such a lesson increases the interest of students in the environment. They are brought up in the spirit of a conscious attitude to nature.

In extracurricular times with students, various classes are conducted: travel work, fairy tales, extracurricular studies, mugs of interest and other works. This work will arouse the interest of the students to know their nature under the guidance of the teacher. Extracurricular activities in the field of natural science provide an opportunity to expand, deepen and clarify the knowledge acquired in the lessons, to arouse interest in the study of nature, to develop students ' activity and attitude to the care of nature, to organize this time. In educating primary school students in the spirit of respect for nature, extracurricular studies are also of educational importance because they influence the behavior of students. They nurture a vision of the material world and the formation of a culture of labor, interest in knowledge and the development of independent observation skills, a sense of community and love for nature. Extracurricular work on natural science is one of the means of comprehensive development of the personality of the reader.

In the field of natural science, there are various classes that are associated with the study and care of nature, the cultivation of plants, the care of animals. These exercises should not be repeated lessons and should be based only on the knowledge gained in the lessons. It is necessary to draw the attention of students to the observations on the nature, as well as on the living corner of the school and the field of educational experience; to organize social and useful work on the landscaping of the nursery and the school, on the protection of birds and the fight against agricultural pests. Practical work in nature should be accompanied by observations and reading of related books.

Mass training implies the demonstration of films, the transfer of trips to nature, the organization of fairy tales, the spectacle of the work of students, as well as the holding of events (harvest day, garden week, tree-growing week, bird's day, etc.).

The group includes young geographers, young naturalists, works of the circle. Individual sessions include the release of wall gazettes, albums; live nature corner and school educational-experimental field, works in nature; analysis of the selection of materials in the content of natural science for extracurricular reading and information corner to the journals "young naturalist" on the nature, scientific-popular books of students.

All types of extracurricular activities should complement and improve each other in educating their students in the spirit of respect for nature. Particular interest in the performance of an Individual task or teacher's recommendation should be aroused. Having identified similar interests in several pupils, the teacher combines them into a circle. Such associations should remain the organizational center of mass extracurricular activities, in order for them to pass successfully, various preparatory work and a large number of participants are needed.

When educating students in the spirit of nature care, they should be diverse in terms of organizational form, content, transfer techniques of extracurricular work. Its content somehow does not become permanent. It depends on the composition, age, interest and need of students, the natural death of the school, the seasons, rooms and equipment. The approximate list of works that primary school teachers should use is as follows:

- observations in nature, identify the causes of natural phenomena;
- trips to the museum of local lore (the museum of nature), to places where fossil riches are obtained, to fields and fields with the painting of collected materials;
- collection and painting of natural material, collection, herbarium, make-up, model making;
- drawing up a map of the surrounding nature of the school and the plan of the place where you approach it;
- reading scientific-popular natural science literature, articles published in "Young Naturalist" magazines as a team;
- to organize a lively nature corner, observe plants and animals and conduct experiments on them, as well as conduct experiments and observations on the plot that the school took;
- filmography in the content of natural science, aperture, imaging of diapositives;
- acquaintance with the achievements of the national economy;
- in public events (holiday, fairy tale, etc.) participation;
- conversations on the protection of nature, the benefit and importance of plants and animals in a person's life;
- social-useful works aimed at the care of nature, protection of greenery, carrying out and caring for trees and shrubs, collecting seeds, fruits of foreign and cultural plants, fighting against pests of weeds, fields, melons, gardens, forests, protection of useful animals;
- equipping the room of natural science, the corner of the country, views, the corner of nature;
- preparation of simple visual weapons from natural material, organization of the spectacle of the work of pupils;
- collection of material for posters and albums;
- wall gazettes "About Mother nature", "Care about nature", "About nature axis" and the release of similar news;

- news angle and literature collection for additional reading on extracurricular reading topics.

Individual works in the upbringing of future educators in the spirit of nature care. Individual studies on natural science are conducted with students who know nature and have an interest in the absence of inclinations. The personality of the teacher, his love for nature and careful attitude to it, the awareness of being able to follow and be interested in the students play a big role in the formation of interest in nature in the students. Its not only the quality of knowledge of the students on how to organize observations in the 1st class, how much this work is necessary and important, how to establish the teaching of natural science, but also the forms of working with natural science at extra-curricular times are also linked.

Carrying out individual assignments form the skills of the research work, which will fill the leisure time of the students with useful and interesting work. The content of Individual assignments is determined by the interests of the students. What would not interest the reader - whether it is the care of plants in the room, the collection of mark depicting animals and plants, the establishment of herbarium, the laying of experiments in nature and the conduct of observations - it should be approved and supported by the teacher. The topics of Individual assignments are chosen depending on the interests of the students, but the content of the assignments should be carefully thought out by the teacher of the organization and methodology of their performance (the object of study, observation or work place is determined, a plan is drawn up). In order for the work to be completed and interest in it not to be lost, it is necessary that the teacher regularly provides assistance to the students in the performance of individual assignments.

For this purpose, educational travel and labor education lessons are used in educating future educators in the spirit of nature care. It is necessary to check the performance of individual tasks, and at the end of the work it is necessary to describe its results to the readers. It should always be remembered that the practical importance of individual work is ensured only when the students understand that it is necessary to carry out it.

After all, it is necessary to realize that a person can protect nature with his kindness, help him in this. Only then will the environmental disaster be taken over, humanity will survive this danger. In order to solve environmental problems, it is necessary to formulate the ecological culture and outlook of young people in the system of continuous education. Our goal is to contribute to the beauty, freedom, cleanliness and prosperity of our country. Proceeding from this, it is a very important task for all of us to find an ecological culture and a worldview. In fact, it is necessary to realize that each of these tasks is our high human and spiritual duty, to preserve nature, its resources and to make rational use of them our vital skills. Children are considered a growing younger generation, and the fate of our country depends on them. It is the duty of each of us to absorb the need to be kind to nature, attentive to it.

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SYSTEMS OF CALCULATED AND MODELED DISPERSIONS

Abstract: *The article analyzes 2 systems ($U_{44,4}$,($\Lambda^{(v)}_{44}$,$V_{44,4}$)), ($V_{44,4}$, $\Lambda^{(u)}_{44}$,$U_{44,4}$,$U_{44,4}$)) modeling valid u- and v -variables. The analysis of the system of calculated and simulated valid u-, v-variables in the IM RCVA is carried out. The random variances in pairs of simulated random matrices ($\Lambda^{(v)}_{44}$,$V_{44,4}$,), ($\Lambda^{(u)}_{44}$,$U_{44,4}$) are considered, simulated in the IM RCVA, in the presence of 10 indicators of the extracted knowledge in 5 columns of matrices (Λ^{+}_{pp},B^{+}_{pp}) and indicators of extracted knowledge. The control of the values of random variances (valid u-variables, v-variables from 2 classes, the calculated variances and the simulated ones were carried out only for the class "highest variance." A fact characteristic of the IM RCVA was established: since 2 matrices A^{+}_{54}, and B^{+}_{44} and the indicators in them are modeled according to the values of real and standardized (their variances are equal to 1) z-variables, increase the number of m values of variability ($z_{i1},\ldots,z_{i9}$),, i = 1,…, m.*

Key words: *calculated, simulated, random, dispersions.*

Language: *Russian*

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СИСТЕМЫ ВЫЧИСЛЯЕМЫХ И МОДЕЛИРУЕМЫХ ДИСПЕРСИЙ

Аннотация: *В статье анализируются 2 в системы ($U_{44,4}$,($\Lambda^{(v)}_{44}$,$V_{44,4}$,)), ($V_{44,4}$,($\Lambda^{(u)}_{44}$,$U_{44,4}$,)) моделирования валидных u- и v –переменных. Проведен анализ системы вычисляемых и моделируемых валидных u-,v-переменных в ОМ АИКП. Рассмотрены моделируемые в ОМ ИКП случайные дисперсии в парах моделируемых случайных матриц ($\Lambda^{(v)}_{44}$,$V_{44,4}$,),($\Lambda^{(u)}_{44}$,$U_{44,4}$,) При наличии 10 идикаторов извлекаемых знаний в в 5 столбцах матриц (Λ^{+}_{pp},B^{+}_{pp}) идикаторов извлекаемых знаний. Управление значениями случайных дисперсий (валидных u-переменных, v-переменных из 2-х классов вычисляемые дисперсии и моделируемыме провели только для класса «наиболшая дисперсия». Установлен факт, характерный для ОМ АИКП: так как 2 матрицы A^{+}_{54}, и B^{+}_{44} и индикаторы в них смоделированы по значениям реальных и стандартизованных (их дисперсии равны 1) z–переменных, увеличивают количество m значений изменчивостей ($z_{i1},\ldots,z_{i9}$),i=1,…,m.*

Ключевые слова: *вычисляемые, моделируемые, случайные, дисперсии.*

Введение

Исследования, связанные с разбиением n=q+p z–переменных $\{z_1,\ldots,z_n\}$ на 2 множества - $\{z_1,\ldots,z_q\}$, $\{z_1,\ldots,z_p\}$, начались после публикации статьи [1] о зависимостях двух множеств переменных. В ней изложен оригинальный варриант метода канонических корреляций. В теории обратных задач прикладных многомерных статистических моделей (ОЗ ПМСМ) метод канонических корреляций именуется «Прямая модель анализа канонических переменных (ПМ АКП). В статье [2] описана модель (ОМ АИКП), обратная к модели ПМ АИКП. В ОМ АКП решаемая задача рассматривает в качестве исходных не канонические переменные, а их преобразрванные избыточно-канонические

переменные с одинаковыми [4], различными [2,3] дисперсиями Прямая Модель АИКП кратко изложена в статье [3]. Избыточно-канонические переменные – результат последовательного преобразования матриц z-переменных: сперва - методом избыточных переменных [5], затем - методом канонических переменных[1]. Индексы избыточностей 4 пар множеств переменных исследованы в терминах RV-коэффициентов в статье [6]. В статье [7] изложен вариант Обратной Модели Анализа Избыточно-Канонических Переменных (ОМ АИКП) с различными дисперсиями с примером из статьях [2,3]. Вариант одинаковых дисперсий в ОМ АИКП изложен в статье [4]. В статьях [2] сформированы новая структурная матрица (Таблица 1 [2,3], Таблица 1) и провели моделирование рассматриваемых ниже матричных объектов (Таблица 2).

В настоящей статье В теории систем ниже рассматриваемые вопросы к объектам ОМ ИКП формализуются. Проведены анализ системы *вычисляемых* и *моделируемых* валидных u-,v-переменных и анализы других матричных объектов из ОМ АИКП. Рассмотрены моделируемые в ОМ ИКП случайные дисперсии в парах моделируемых случайных матриц $(\Lambda^{(v)}{}_{44},V_{44,4},),(\Lambda^{(u)}{}_{44},U_{44,4},)$ из систем $(U_{44,4},(\Lambda^{(v)}{}_{44},V_{44,4},))$ и $(V_{44,4},(\Lambda^{(u)}{}_{44},U_{44,4},))$ моделирования валидных u- и v–переменных. При наличии 10 идикаторов извлекаемых знаний в 5 столбцах матриц $(\Lambda^{+}{}_{pp},B^{+}{}_{pp})$ идикаторов извлекаемых знаний. Для них верны равенства: $B^{+T}B^{+}=I_{pp}$, $V_{444}=Z^{+}{}_{444}B^{+}{}_{44}$, $(1/44)V^{T}V=I_{44}$ (в обратной задаче: $(1/44)V^{T}V=\Lambda^{(v)}{}_{44}$). Индикаторы (в вектор-столбцах из матриц $A^{+}{}_{qp}$, $B^{+}{}_{pp}$ удовлетворяют ограничениям: $\mathbf{a^{+}}_1\mathbf{a^{+}}_1{}^{\mathbf{T}}=1$, $\mathbf{a^{+}}_1{}^{\mathbf{T}}\mathbf{a^{+}}_1=1$, $\mathbf{a^{+}}_1\ \mathbf{a^{+}}_1{}^{\mathbf{T}}=1$, $\mathbf{b^{+T}}_1\mathbf{b^{+}}_1=1$, $\mathbf{b^{+}}_1\mathbf{b^{+T}}=1$, $\mathbf{b^{+T}}_2\mathbf{b^{+}}_2=1$, $\mathbf{b^{+}}_2\mathbf{b^{+T}}_2=1$, $\mathbf{b^{+T}}_3\mathbf{b^{+}}_3=1$, $\mathbf{b^{+}}_3\mathbf{b^{+T}}_3=1$.

Пара матриц валидных u-,v-переменных $(V_{44,4},U_{44,4})$ из системы такова: «вычисляемая матрица» - по вычисляемым дисперсиям, «моделируемая матрица» – по моделируемым дисперсиям. Случайность значений элементов матриц $(V_{44,4}, U_{44,4})$, случайность значений дисперсий из диагональных матриц $\Lambda^{2}{}_{44,}$ генерируются разными механизмами. Управление значениями случайных дисперсий (валидных u-переменных, v-переменных из 2-х классов вычисляемых дисперсий и моделируемых мы провели только для класса «наибольшая дисперсия».

Модели и задачи

Мы будем использовать соотношения из ПМ АИКП [1-5] и из теоремы [6]. Они – соотношения [6], получены после двух последовательных преобразований 2-х подматриц Z_{mq}, Z_{mp} матрицы $Z_{mn}=[Z_{mq}|Z_{mp},]$ значений n=q+p z-переменных, разделенных на 2 группы: в 1-ой группу объединены q z-переменных, во 2-ую – p z-переменных. Полученные 2 матрицы значений избыточно-канонических переменных (biorthogonal redundancy-canonical variables) U_{mp}, V_{mp} биортогональны [6]: $(1/m)U^{T}U=I_{pp}$, $(1/m)V^{T}V=I_{pp}$, $(1/m)U^{T}V=\Lambda_{pp}=diag(\lambda_1,\ldots,\lambda_p)$, $\lambda_1>\ldots>\lambda_p>0$. Все 3 матрицы диагональные. Матрица $A^{+}{}_{qp}$,(или $B^{+}{}_{pp}$) состоит из произведения 2-х матриц преобразований: 1-ая вычисляется в ПМ АИП [1], 2-ая – в модели канонических переменных [2]. Избыточная переменная «канонизируется» методом канонических корреляций[2] . Подматрица Z_{mq} преобразуется с применением ортогональной матрицы A_{qp}, а подматрица Z_{mp} – матрицы B_{pp} [1]. Ортогональные матрицы A_{qp}, B_{pp} в ПМ АИКП [1] обеспечивают би-ортогональность пары матриц (U_{mp}, V_{mp}) : $(1/m)U^{T}V=\Lambda_{pp}=diag(\lambda_1,\ldots,\lambda_p)$, $\lambda_1>\ldots>\lambda_p>0$. Две матрицы $U^{*}{}_{mp}$, $V^{*}{}_{mp}$ в КП-модели [1] не би-ортогональны:$(1/m)U^{*T}V^{*}=\Psi_{12}\neq\Psi_{21}$,где $(1/m)V^{*T}U^{*}=B^{*T}R_{21}A^{*}=\Psi_{21}$. В ПМ АИКП [4], две матрицы U_{mp}, V_{mp} значений избыточно-канонических переменных биортогональны: $(1/m)U^{T}V=\Lambda_{pp}$. Подробно метод избыточных переменных (МИП, redundancy values analysis, RVA) изложен в работах [1,565-583]. Соотношения из прямой задачи, решенной в [1], образкют Прямую модель RVA (прямую RVA-модель) схематично обозначим так: $Z_{mn}=[Z_{mq}|Z_{mp}]=>(\Lambda^{*}{}_{pp}, A^{*}{}_{qp}, B^{*}{}_{pp},U^{*}{}_{mp},V^{*}{}_{mp})$, m=q+p,q≥p. Она исследована в терминах RV-коэффициентов [11] в статье [4]. Во всех 3-х рассматриваемых многомерных моделях с двумя множествами z-переменных входными объектами являются 2 подматрицы $Z_{mq}|Z_{mp}$, объединенные в одну матрицу $Z_{mn}=[Z_{mq}|Z_{mp},]$.

Подматрицы Z_{mq},Z_{mp} будут моделироваться нами ниже при решении Обратной Задачи. При решении Обратной Задачи мы не будем применять преобразования, присущие методу избыточных переменных [5], методу канонических корреляций [1]. В Обратной Задаче моделируются не как 2 множества избыточноканонических (redundancy-canonical variables [6] переменных, а как [4] значения изменчивостей $(z_{i1},\ldots,,z_{i9}),i=1,\ldots,m$», матрицы «значений изменчивостей» [4] $Z^{+}{}_{mn}=[Z^{+}{}_{mq}|Z^{+}{}_{mp}]$. В рамках ОМ АИКП не применяется термин «z–переменная», а применяется термин «значения изменчивостей $(z_{i1},\ldots,,z_{i9}),i=1,\ldots,m$». В задачах из ОМ АИКП нет необходимости сохранять условие стандартизованности z–переменным $(z_1,\ldots,,z_9)$. Вместо термина «элементы спектра» применяется термин «случайные вычисляемые и моделируемые дисперсии».

«Значения изменчивостей [4] $(z_{i1},\ldots,,z_{i9}),i=1,\ldots,m$» мы будем моделировать, исходя из значений параметров из другой модели

– Обратной Модели Главных Компонент [12,13]. Решаемые задачи и применяемые в ОМ ГК модели, Оптимизационные задачи изложены в статьях [14-24]. Используемые формулы ПМ АМКП приведены в статье [6]. В статье [6] доказаны Теоремы об индексах избыточностей (измерения сил связей между двумя множествами z-переменных, избыточных переменных, канонических переменных, избыточно-канонических переменных). Теоретическое обоснование существования индикаторов присутствия знаний в матрицах собственных векторов A_{qp}, B_{pp} в Прямой модели избыточно-канонических переменных доказано в Теоремах 1 и 2 [6].

Преобразование пары u- и v-переменных в пару множеств z-переменных на этапе $(U_{mp},V_{mp}) \rightarrow (Z_{mq},Z_{mp})$ необходимо для получения модельных числовых данных Z_{mq},Z_{mp} .Эти матрицы данных Z_{mq},Z_{mp} имеют 2 матрицы A^{+}_{qp},B^{+}_{pp} индикаторов извлеченных знаний. Извлеченные знания и их когниивные модели извлечения изложены в статьях [7-11].

Исходные данные

Имелись 44 значений каждой из 5+4 =9 коррелированных z-переменных. Эти 9 z-переменных отобраны на этапе 1 из 5 разнородных по содержательным смыслам множеств коррелированных z-переменных.

Первое множество состояло из n=7 [7] z-переменных (отобрана одна z-переменная №7 со смыслом, характеризующим потребление населением Республики Казахстан минут интернета, ее смысл–телекоммуникационный: **смысл (z7)=«Трафик интернета Dial up (минуты) населения»**).

Второе множество состояло из n=7 [8] z-переменных (отобрана одна z-переменная №7 со смыслом, характеризующим количество отдельных телефонных аппаратов (ОТА) в домах (квартирах) населения Республики Казахстан).

Из третьего множества коррелированных 9 z-переменных [9] отобраны 3 z-переменные **z_5, z_8,z_9.** Их смыслы также отражают телекоммуникационные потребности (расходы) предприятий: **смысл(z_5)=(T10)=«Расходы предприятий на услуги связи на 1 предприятие»), смысл(z_8)=«количество междугородных разговоров на 1 предприятие», смысл(z_9)=«Количество ОТА для предприятий».**

Здесь величина “веса” $c_{51}=corr(z_5,y_1)= 0.3318$, входящего в формулу валидной переменной y_1, является заметной - $c_{51}=corr(z_5,y_1)= 0.3318$. также заметной является величина “веса” c_{52} z-переменной z_5 : $c_{52}=corr(z_5,y_2)= -0.3083$, входящей в формулу валидной переменной y_2.

Два “веса” входят в 2 формулы 2-х валидных переменных y_1, y_2. Валидная переменная y_1 зависит от матрицы $\mathbf{A_{54}}$. Валидная переменная y_2 зависит от матрицы $\mathbf{B_{44}}$. Поэтому индикатор $corr(z_5,y_1)= 0.3318$ является частью матрицы индикаторов $\mathbf{A_{54}}$, а индикатор $corr(z_5,y_2)= -0.3083$ является частью матрицы индикаторов $\mathbf{B_{44}}$.

Из четвертого множества коррелированных 9 z-переменных [10] были отобраны 2 z-переменные **z_4 z_5 со смыслами смысл(z_8)=(T15)=«Количество междугородных разговоров на 1 предприятие», смысл(z_9)=«Количество ОТА для предприятий».**

Из пятого множества 5 коррелированных z-переменных [11] были отобраны 2 z-переменные **z_5 z_6. Смысл(z_8)=(T15)=«Количество междугородных разговоров на 1 предприятие», смысл(z_9)=«Количество ОТА для предприятий».**

Всего отобраны 9=5+4 z-переменные, разбитые на 2 однородные по смыслам множества: $\{z_1,\ldots,z_5\}$ – «расходы на виды ТК-услуг» $\{z_6,\ldots,z_9\}$ – «количество видов ТК-услуг». Каждому множеству соответствует своя матрица: $\mathbf{A_{54}}$ или $\mathbf{B_{44}}$. Расположение индикаторов в матрицах $\mathbf{A_{54}}$,$\mathbf{B_{44}}$ приведено в таблице 1. Имеет значение и доля индикаторов, она должна быть настолько малой, что адекватна смыслу фразы «извлеченные по крупицам знания» [9]. Для 9=5+4 z-переменных составлена смысловая Таблица 1. В смысловой Таблице 1 – второй группе исходных данных, дано разбиение z–переменных $(z_1,\ldots,z_9)$ на 2 однородных смыслам множества - $\{z_1,\ldots,z_5\}\cup\{z_6,\ldots,z_9\}$: «расходы на ТК-услуги» и «количества единиц ТК-услуги». В 2-х матрицах A^{+}_{54}, и B^{+}_{44} и индикаторы в них смоделированы по значениям реальных и стандартизованных (дисперсии равны 1) z–переменных.

Из смысловой таблицы 1 мы смоделировали 2 м**атрицы $\mathbf{A^{+}_{54}}$, $\mathbf{B^{+}_{44}}$собственных векторов .** они являются одними из нужных нам матриц индикаторов извлекаемых знаний.

В наших модельных матрицах $\mathbf{A_{54}}$ **и** $\mathbf{B_{44}}$ индикаторов извлекаемых знаний появились элементы с заметными значениями. Например, элементы вектора $\mathbf{a}_1$ =**(0,3318, -0,5074,** 0,359106, **0,4605,** 0,539849)^{T}. все «веса» в линейных комбинациях валидной переменной y_2. В 2 формулах 2-х валидных переменных y_1, y_2 с заданными смыслами стали иметь заметные значения «весов». Количество 2 валидных переменных мы фиксируем заранее. А смыслы этих двух валидных переменных фиксируем заранее. Они соответствуют формулам 2-х валидных переменных y_1, y_2.

Таблица 1

1	2	3	4	5	6	7
	Имя-смысл z –переменной		**a 1**	**a 2**	**a 3**	**a 4**
			1	2	3	4
z 1	«Расходы предприятий на услуги связи на 1 предприят	**z3**	**0,3318**	**-0,3083**		
z 2	Трафик интернета Dial up (минуты) насел	**z1**	**-0,5074**			
z 3	междугородный трафик (минуты) для предприятий	**z7**	**0**	**0,4259**		
z 4	Международн трафик на СНГ (мин) для предприятий	**z5**	**0,4605**	0		
z 5	«другие расходы при разговорах»	**z10**				
	Имя-смысл z –переменной		**b 1**	**b 2**	**b 3**	**b 4**
z 6	количество ОТА для населения	**z2**	**0,5108**			
z 7	Количество междугородных разговоров на 1 предприя	z4	**0,4223**	**0,4411**	**0,4129**	
z 8	Количество ОТА для предприятий	**z9**		**-0,6339**		
z 9	«другие количества разговоров»	**z11**				

Таблица 2. Матрицы A^{+}_{54}, B^{+}_{44} собственных векторов

	1	2	3	4		5	6	7	8
	a 1	**a 2**	**a 3**	**a 4**		**b 1**	**b 2**	**b 3**	**b 4**
1	**0,3318**	**-0,3083**	**5,5E-05**	**0,891549**		**0,5108**	**0,4728**	**0,56632**	**0,44139**
2	**-0,5074**	**0,770346**	**0,258144**	**0,319488**		**0,4223**	**0,4411**	**0,4129**	**0,67573**
3	**0,359106**	**0,4259**	**0,555183**	**0,687024**		**0,43284**	**-0,6339**	**-0,5124**	**0,38502**
4	**0,4605**	**6,52E-05**	**0,605486**	**0,695848**		**0,61106**	**0,42433**	**0,49621**	**0,44758**
5	**0,539849**	**0,360732**	**0,508449**	**0,6292**					

Зависимость смыслов валидных переменных от количества индикаторов знаний

Когда мы анализировали 9 «весов» (индикаторов), то мы разделили на 2 множества. В 1-ое множество коррелированных z-переменных мы включили z-переменные, смыслы которых означают «расходы населения и предприятий на телекоммуникационные услуги». Во 2-ое множество мы включили z-переменные, смыслы которых означают «количества услуг (минуты разговоров и, количества аппартов, используемых при разговорах) и оплаченных населением и предприятиями на телекоммуникационные услуги». Для 1-ого множества коррелированных z-переменных мы сконструировали матрицу «весов» **A**$_{54}$, а для 2-ого множества z-переменных - матрицу «весов» **B**$_{44}$. эти матрицы «весов» нами преобразуются в матрицы $\mathbf{A}^{+}_{54}$,$\mathbf{B}^{+}_{44}$. **А** решаемые 2 Оптимизационные Задачи при моделировании пар матриц ($U_{mq}=Z^{+}_{mq}A^{+}_{qq}$ и $V_{mp}=Z^{+}_{mp}B^{+}_{pp}$) могут изменить множества индикаторов как в матрице $\mathbf{A}^{+}_{54}$, так и в матрице $\mathbf{B}^{+}_{44}$.

Решаемые 2 Оптимизационные Задачи могут повлиять на составы новых индикаторов знаний. Так как они преобразуют невыделенные элементы матриц индикаторов **A**$_{54}$, **B**$_{44}$ и они превращаются в новые матрицы индикаторов $\mathbf{A}^{+}_{54}$, $\mathbf{B}^{+}_{44}$.

Но необходимые и весьма полезныеные превращения могут привести к нежелательным изменениям в структуре извлекаемых знаний. Знания извлекаются раздельно из матриц $\mathbf{A}^{+}_{54}$, $\mathbf{B}^{+}_{44}$, матрицы $\mathbf{A}^{+}_{54}$, $\mathbf{B}^{+}_{44}$ моделируются также отдельно. Причем прямоугольная матрица $\mathbf{A}^{+}_{54}$ является частью квадратной матрицы $\mathbf{A}^{+}_{55}$, составляющую пару (Λ_{55},$\mathbf{A}^{+}_{55}$) матриц для собственной структуры для матрицы валидных u-переменных $U_{44,4}=Z_{44,5}$ $\mathbf{A}^{+}_{55}$. здесь подматрица $\mathbf{A}^{+}_{54}$ является матрицей псевдособственных векторов для матрицы собственных чисел

Λ_{55}=diag($\lambda_1,\lambda_2,\lambda_3,\lambda_4$,0)=diag(**2.40999,1.12960**, 0.23020, 0.23020,0): $\mathbf{A^+_{55}}\ ^T\mathbf{A^+_{55}}\neq I_{55}$. `

Здесь возможны следующие 3 вида изменений множества индикаторов:

а) новые индикаторы не добавились как в матрице A^+_{54}, так и в матрице B^+_{44};

б) новые индикаторы добавились в одной из двух матриц- либо в A^+_{54}, либо в матрице B^+_{44};

в) новые индикаторы добавились в двух матрицах и в матрице A^+_{54}, и в матрице B^+_{44}.

г) множества индикаторов как в матрице $\mathbf{A^+_{54}}$, так и в матрице B^+_{44} уменьшились.

Виды изменений а)-б) в множествах индикаторов ме рассматривали. Вид изменений г) не может реализоваться, ибо в 2-х Оптимизационных Задачах (при моделировании пар матриц $\mathbf{A^+_{54}}$,B^+_{44}) множества индикаторов (как из матрицы $\mathbf{A^+_{54}}$, так и из матрицы B^+_{44}) заданы в окне ограничений применяемой процедуры Solver из ЭТ Excel.

Модельная структура индикаторов в 3-х столбцах матриц A_{54},B_{44}

1-вый собственный вектор $\mathbf{a^+}_1$=(**0.3318**, **-0.5074,** 0.359106, **0.4605,** 0.539849)^T из матрицы $\mathbf{A_{54}}$ имеет 5 компонент 0.3318,-0.5074,0.359106,0.4605,0.539849. их величины превышают пороговое значение 0.3318, они являются индикатрами извлекаемых знаний. К заданным нами 3 индикаторам 0.3318, -0.5074, 0.4605 добавились еще 2 индикатора 0.359106, 0.539849. все 5 компонентов 1-вый собственного вектора $\mathbf{a^+}_1$=(0.3318, -0.5074, 0.359106, 0.4605, 0.539849)^T являются индикатрами извлекаемых знаний. Этот набор индикатров состоит на 100% из смыслов, означающих «расходы населения и предприятий на телекоммуникационные услуги».

Второй собственный вектор $\mathbf{a^+}_2$=**(-0.3083**, 0.770346, **0.4259**, 6.52E-05, 0.360732)^T из матрицы $\mathbf{A_{54}}$ имеет 4 компоненты -0.3083, 0.770346, 0.4259, 0.360732 по абсолютной величине превышающие пороговое значение 0.3083. Здесь в векторе $\mathbf{a^+}_2$=(-0.3083, 0.770346, 0.4259, 6.52E-05, 0.360732)^{T}число индикаторов чуть меньше, так как соответствующая ему дисперсия λ_2=1,0957 2-ой валидной переменной меньше, чем дисперсия 1-ой валидной переменной λ_1=2,7983. Поэтому во 2-ой валидной переменной присутствует меньшее количество индикаторов извлекаемых знаний.

Матрицы $\mathbf{A_{54}}$,$\mathbf{B_{44}}$ преобразовались в матрицы $\mathbf{A^+_{54}}$,$\mathbf{B^+_{44}}$. так матрице $\mathbf{A^+_{54}}$ **к** заданным нами ранее трем индикаторам 0.3318, -0.5074, 0.4605 добавились еще 2 индикатора 0.359106, 0.539849. Все 5 компонентов 1-вого собственного вектора $\mathbf{a^+}_1$=(0.3318, -0.5074, 0.359106, 0.4605, 0.539849)^T являются индикатрами извлекаемых знаний. Этот набор индикаторов состоит на 100% из смыслов, означающих «расходы населения и предприятий на телекоммуникационные услуги». Этот смысл является суммой смыслов двух валидных переменных u_1, u_2, равных линейным комбинациям z-переменных с номерами 1,2,3,4.

Матрице $\mathbf{B^+_{44}}$ в 1-ом собственном векторе $\mathbf{b^+}_1$=(0.5108, 0.4223, 0.43284, 0.61106)^T **к** заданным нами ранее двум индикаторам 0.5108, 0.4223добавились еще 2 индикатора 0.43284, 0.61106. Все 4 компоненты 1-вого собственного вектора $\mathbf{b^+}_1$=(0.5108, 0.4223, 0.43284, 0.61106)^T являются индикатрами извлекаемых знаний. Этот набор индикаторов состоит на 100% из смыслов, означающих количества услуг (минуты разговоров и, количества аппартов, используемых при разговорах) и оплаченных населением и предприятиями на телекоммуникационные услуги». Этот смысл является суммой смыслов двух валидных переменных v_1 ,v_2 , равных линейным комбинациям z-переменных с номерами 6, 7, 8,9 (z_6,…,z_9).

Решаемые 2 Оптимизационные Задачи при моделировании пар матриц ($\mathbf{A_{54}}$, $\mathbf{B_{44}}$) могут изменить множества индикаторов как в матрице $\mathbf{A^+_{54}}$, так и в матрице $\mathbf{B^+_{44}}$.

Решаемые 2 Оптимизационные Задачи могут повлиять на составы индикаторов знаний. Так как они преобразуют невыделенные элементы матриц $\mathbf{A_{54}}$, $\mathbf{B_{44}}$ и они превращаются в новые матрицы $\mathbf{A^+_{54}}$, $\mathbf{B^+_{44}}$.

Но очень нужные превращения могут привести к нежелательным изменениям. Здесь возможны следующие 3 вида изменений множества индикаторов:

а) новые индикаторы не добавились как в матрице A^+_{54}, так и в матрице B^+_{44};

б) новые индикаторы добавились в одной из двух матриц- либо в A^+_{54}, либо в матрице B^+_{44};

в) новые индикаторы добавились в двух матрицах и в матрице A^+_{54}, и в матрице B^+_{44};

г) множества индикаторов как в матрице $\mathbf{A^+_{54}}$, так и в матрице B^+_{44} уменьшились.

Виды изменений а)-б) в множествах индикаторов не рассматриваем. Треуется другой механизм формирования множеств индикаторов в матрицах индикаторов. Вид г) изменений (он рассматривается в [1]) не может реализоваться, ибо в 2-х Оптимизационных Задачах при моделировании пар матриц с фиксированными множествами индикаторов как в матрице $\mathbf{A^+_{54}}$, так и в матрице B^+_{44} заданы в ограничениях применяемой процедуры Solver из ЭТ Excel.

Системы вычисляемых и моделируемых валидных u-,v-переменных

Формирование системы смыслов валидных переменных: 2-х u-, 3-х v-переменных проведено

ниже. Для моделирования многомерной матрицы изменчивостей $Z^{+}_{mn}=[Z^{+}_{mq}|Z^{+}_{mp}]$ решаются Оптимизационные Здачи, изложение которых приведены в работах [7-9],

Оптимизационная Здача 1: $(\Lambda_{pp},C_{pp})=>(\Lambda^{(v)}_{pp},B^{+}_{pp})$ нужна для моделирования матрицы Z_2 значений коррелированных z-переменных с номерами 6,7,8,9 из 2-го множества z-переменных (столбцы матрицы Z_2,имеют номера 1,2,3,4):$(V_{mp},B^{+}_{pp})=>Z_2$.

Матрица V_{mp} вычисляется (не моделируется) независимо от матрицы U_{mp}. Вычисление ее элементов происходит путем преобразования любой декоррелированной выборки объема m=44. Матрица декоррелированной выборки умножается справа на диагональную матрицу, у которой значения равны корню квадратному из элементов диагональной матрицы Λ^2_{44}=diag (2.40999, 1.12960, 0.23020, 0.23020). $\Lambda_{44}=sqrt(\lambda^2_1)=sqrt(2.40999)=1.5524$,
$sqrt(\lambda^2_2)=sqrt(1.12960)=1.0628$,
$sqrt(\lambda^2_3)=sqrt(0.23020)=0.4798$,
$sqrt(\lambda^2_4)=sqrt(0.23020)=0.4798$.

Этот шаг $\Lambda^{(2)}_{pp}=>(V_{44,4})$ должен быть проведен аккуратно и с высокой точностью.

Пара матриц ($V_{44,4}$, $U_{44,4}$) такова, что матрица $V_{44,4}$ –вычисляемая, $U_{44,4}$–моделируемая. «Вычисляемая матрица» - по вычисляемым дисперсиям, «моделируемая матрица» – по моделируемым дисперсиям. Случайность значений элементов матриц ($V_{44,4}$, $U_{44,4}$) имеется всегда.

Для управления значениями случайных дисперсий сделаем 1-ый шаг: разделим множество дисперсий валидных как u- переменных, так и v-переменных на 2 класса вычисляемые дисперсии дисперсии, моделируемые дисперсии. Дисперсии разделяются «наибольшую», «средние», «наименьшую». Ниже покажем существование 3-х моделируемых наборов коэффициентов соответствующих *3-м классам* («наибольшая», «средняя», «наименьшая») *одной валидной переменной*, *воздействующих* на z-переменные (из 5-и или из 4-х штук) .

Если матрица валидных -u-переменных $U_{44,4}$ (из пары ($U_{44,4}$, $V_{44,4}$)) назначена *вычисляемой (модельной)*, то ей соответствует *модельная* (*вычисляемая)* матрица валидных v-переменных $V_{44,4}$ (валидных u-переменныеых $U_{44,4}$) с случайными дисперсиями $\lambda^{(v)}_1=6.44627$, $\lambda^{(v)}_2=5.82433$,
$\lambda^{(v)}_3=1,0000$.($(\lambda^{(u)}_1=5.77440,\lambda^{(u)}_2=1.27318$, 1,0000).

Появляются 2 системы валидных переменных, каждая из которых содержит матрицы вычисляемых и моделируемых валидных переменных с случайными дисперсиями. Требуется управление значениями дисперсий. Если валидные u-переменные - вычисляемые то имеем тройку объектов вида ($U_{44,4}$, $(\Lambda^{(v)}_{44},V_{44,4},)$). Если валидные v-переменные - вычисляемые то имеем тройку объектов вида ($V_{44,4}$, $(\Lambda^{(u)}_{44},U_{44,4},)$). Валидные вычисляемые v-переменные отличаются от валидных моделирумых v-переменных тем, что у вычисляемых валидных v-переменных дисперсии фиксированные, а дисперсии у моделирумых валидных v-переменных – случайные.

Значения случайных дисперсий трудно регулировать, но мы будем разрабатывать теорию регулирования случайных дисперсий в ($U_{44,4}$, $(\Lambda^{(v)}_{44},V_{44,4},)$), ($V_{44,4}$, $(\Lambda^{(u)}_{44},U_{44,4},)$). Здесь ниже применяем эмпирическое правило управления: превышение случайного значения предыдущей дисперсии u-,v-переменной случайного значения дисперсии последующей u-,v-переменной. Это «правило управления» реализовано в процедуре Solver в окне ограничений программы-таблицы. Программа-таблица реализует решение Оптимизационной Здачи 1: $(\Lambda_{44},C_{44})=>(\Lambda^{(v)}_{pp},B^{+}_{44})$. Она нужна для моделирования матрицы Z_2 значений коррелированных z-переменных с номерами 6,7,8,9 из 2-го множества z-переменных (столбцы матрицы Z_2,имеют номера 1,2,3,4):$(V_{mp},B^{+}_{pp})=>Z_2$.

Введем обозначения и термины, понятия.Тройка объектов ($U_{44,4}$,$(\Lambda^{(v)}_{44},V_{44,4},)$), где $\Lambda^{(v)}_{44}=diag(\lambda^{(v)}_1,\lambda^{(v)}_2,\lambda^{(v)}_3,1,0000)=diag$ (6.44627, 5.82433.1.0000, 1.0000)=diag $[(1/44)V^{T}V]$, $nodiag[(1/44)V^{T}V]=(0)$, схематично обозначает статусы матриц (u,v)-переменных из пары ($U_{44,4}V_{44,4}$) для случайных дисперсий $\Lambda^{(v)}_{44}$. В схеме ($U_{44,4}$,$(\Lambda^{(v)}_{44},V_{44,4},)$) и в схеме ($V_{44,4}$,$(\Lambda^{(u)}_{44},U_{44,4},)$) сравнение параметров пар $(\Lambda^{(v)}_{44},V_{44,4},)$ и ,$(\Lambda^{(u)}_{44},U_{44,4},)$. Параметры $(\Lambda^{(u)}_{44}$ и $(\Lambda^{(v)}_{44}$–случайные, но у обеих троек объектов ($U_{44,4}$, $(\Lambda^{(v)}_{44},V_{44,4},)$), ($V_{44,4}$,$(\Lambda^{(u)}_{44},U_{44,4},)$) имеются одни и те же постоянные объекты – постоянные наборы назначенных ранее индикаторов как в матрице $\mathbf{A}^{+}_{54}$, так и в матрице B^{+}_{44}.

Для нас редставляет интерес подтверждение следующей гипотезы. Эта гипотеза – первый шаг к разрабоке когнитивных моделей извлечения знаний при существенной разнице количеств назначенных индикаторов в матрицах $\mathbf{A}^{+}_{54}$, B^{+}_{44}.

Существенная разница «количества» и «затрат» стала в настоящее врмя повседневной реальностью. Никакие маркетинговые ухищрения не устранят эту разницу. Гипотеза порождена после анализа практических ситуаций. Замечено: динамики реальных данных таковы, что при частых коротких звонках количество разговоров большое, а затрачены минуты при этом небольшие. Это – проявление частых коротких звонков. Превышение числа минут разговоров над количеством разговоров иллюстрирует наличие нечастых долгих разговоров. Другие

примеры. Большое количество разговоров туристов (недопущенных к интернету) в туристический сезон, но короткие (в минутах) их раговоры (по сотовой связи) по международным тарифам.ограниченные ресурсы, но большой объем продаж за счет автоматизации процессов. Малое количество информативных свойств минералогического состава кимберлитовых трубок, но количество сочетаний окислов металлов в минералогических составах.

Гипотеза

Теоретическое эмпирическое воплощение практических ситуаций можно передать фразами гипотезы.

Гипотеза: при равных наборах назначенных ранее индикаторов индикаторов в матрице $\mathbf{A^{+}_{54}}$,, в матрице B^{+}_{44} моделируемые в ОМ ИКП случайные дисперсии (из $\Lambda^{(u)}_{44},\Lambda^{(v)}_{44}$) имеют приближенно одинаковые («наибольшие») значения параметров (значений дисперсий из $\Lambda^{(u)}_{44},\Lambda^{(v)}_{44}$)) в парах моделируемых случайных матриц $(\Lambda^{(v)}_{44},V_{44,4},),(\Lambda^{(u)}_{44},U_{44,4},)$ в схемах $(U_{44,4},(\Lambda^{(v)}_{44},V_{44,4},))$ и $(V_{44,4},(\Lambda^{(u)}_{44},U_{44,4},))$ моделирования валидных u- и v –переменных.

Проведем анализ только модельных дисперсий. Они - величины дисперсий и суммы дисперсий *модельных* валидных переменных, требуют серьезных усилий по эффективному управлению их изменениями. Простой пример предпочтительных величин дисперсий приведен ниже.

Рассмотрим рзультаты примера по реальным данным [6-11]. В тройке $(U_{44,4},(\Lambda^{(v)}_{44},V_{44,4},))$ и в системе $(V_{44,4},(\Lambda^{(u)}_{44},U_{44,4},))$ смоделирована диагональная матрица $(\Lambda^{(u)}_{44},=diag((\lambda^{(v)}_1), \ldots,\lambda^{(v)}_4)$. Так как =3, то $(\lambda^{(v)}_1=5,77440;,\lambda^{(v)}_2=1.27318,,\lambda^{(v)}_3=1,0000,(\lambda^{(v)}_1/^{(v)}\lambda_3=5,77440/1,0000=5,77,(\lambda^{(v)}_1/\lambda^{(v)}_2=5,77440/\ 1.27318=4.53$. Дисперсия (степень изменчивости) 1-ой ***вычисляемой*** валидной -v-переменной равна 5,77440и в 4,53 раза превышает величину дисперсии ,$\lambda^{(v)}_2=1.27318$.

Здесь сумма дисперсий равна $\lambda^{(v)}_1+\lambda^{(v)}_1=5,77440+1,27318=7$ и степень превышения наибольшей дисперсии (4.53) примерно одинакового порядка, но немного превосходит 7 > 4.53. Степень изменчивости множества 4-х z–переменных $\{z_6,\ldots,z_9\}$, образующих линейную комбинацию v –переменной. $v_{ij}=z_{i1}b_{1j}+z_{i2}b_{2j}+z_{i3}b_{3j}+z_{i4}b_{4j}$ j=1,2,3, для всего множества z–переменных $\{z_6,\ldots,z_9\}$, ибо набор индикаторов пополнился дополнительными элементами. Случай j=4 мы рассматриваем, так как для спектра $\Lambda^{(v)}_{44}$, мы назначили для числа ℓ=3 (число доминирующих собственных чисел) значение 3. Для спектра $\Lambda^{(u)}_{44}$ из системы $(V_{44,4},(\Lambda^{(u)}_{44},U_{44,4},))$ мы назначили для числа ℓ=2 значение 2. До решения Оптимизационной Задачи $(\Lambda_{44},C_{44})=>(\Lambda^{(v)}_{44},B^{+}_{44})$ в матрице B^{+}_{44} было 5 штук индикаторов, после - стало индикаторов 12=3*4: добавились 7 компонент в 3-х собственных векторах после решения Оптимизационной Здачи 1: $(\Lambda_{44},C_{44})=>(\Lambda^{(v)}_{pp},B^{+}_{44})$ с ограничением вида $\lambda^{(v)}_1>\lambda^{(v)}_2>\lambda^{(v)3}$.

Для системы $(V_{44,4},(\Lambda^{(u)}_{44},U_{44,4},))$ наши действия аналогичны. Для спектра $\Lambda^{(u)}_{44}$ из системы $(V_{44,4},(\Lambda^{(u)}_{44},U_{44,4},))$ мы назначим значение 2 для числа ℓ=2. Валидные u-переменные и их случайные дисперсии моделируются при решении Оптимизационной Задачи 2: $(\Lambda_{44},C_{55})=>(\Lambda^{(u)}_{44},A^{+}_{54})$ с ограничением вида $\lambda^{(u)}_1>\lambda^{(u)}_2$. Заметим: ограничение только для значений 2-х дисперсий. Рассматриваются квадратные матрицы $A^{+}_{54}\ \Lambda^{(u)}_{55}$

$\lambda^{(u)}_1=6.44627;,\lambda^{(v)}_2=5.82433,,\ \lambda^{(v)}_3=1,0000)$.

Набольшие значения $\lambda^{(u)}_1=6.44627;,$ $\lambda^{(v)}_2=5.82433,,$ являются собственными числами для компонентов собственных векторов $\mathbf{a}^{+}_1=(0.3318, -0.5074, 0.359106, 0.4605, 0.539849)^{T}$ и $\mathbf{a}^{+}_2=(-0.3083, 0.770346, 0.4259, 6.52E-05, 0.360732)^{T}$ из матрицы $\mathbf{A_{54}}$. из 10 компонентов 9=10=5*2-1 штук являются индикаторами: (0.3318, -0.5074, 0.359106, 0.4605,0.539849), (-0.3083, 0.770346, 0.4259, ~~6.52E-05~~, 0.360732). Произошло добавление 4=9-5 штук новых индикаторов в 2-х собственных векторах после решения Оптимизационной Здачи 2: $(\Lambda_{55},C_{55})=>(\Lambda^{(u)}_{55},A^{+}_{54})$, $\Lambda^{(u)}_{55}$=diag(6.44627, 5.82433, 1.0000, 0.0000) с ограничением вида $\lambda^{(u)}_1>\lambda^{(u)}_2$. Ограничение реализовалось в виде $6.44627=\lambda^{(u)}_1>5.82433=\lambda^{(u)}_2$.

Две дисперсии имеют приближенно одинаковые наибольшие значения: $\lambda^{(u)}_1/\lambda^{(u)}_2=6.44627/5.82433=1.1068$. при этом значение 1-ой дисперсии $\lambda^{(u)}_1=6.44627$ максимизировано при решении Оптимизационной Здачи 2, значение 2-ой дисперсии того же порядка, но обе величины существенно превосходят значение 3-ей дисперсии (1.0000).

Здесь сумма дисперсий равна $\lambda^{(u)}_1+\lambda^{(u)}_2=6.44627+5.82433=12$ и степень превышения наибольшей дисперсии (1.1068) демонстрируют наибольшую изменчивость, существенно превосходящие изменчивости остальных 3-х валидных u-переменных.

Степень изменчивости множества 5 z–переменных $\{z_1,\ldots,z_5\}$ можно определить по дисперсиям 2-х валидных u-переменных. Каждая валидная u-переменная равна линейной комбинации z–переменных из всего множества z–переменных $\{z_1,\ldots,z_5\}$, ибо набор индикаторов пополнился дополнительными элементами в 2-х первых столбцах матрицы A^{+}_{54}. Все компоненты

(кроме a_{42}=52E-05) 2-х собственных векторов $\mathbf{a}^+_1$=(0.3318, -0.5074, 0.359106, 0.4605, 0.539849)^T и $\mathbf{a}^+_2$=(-0.3083, 0.770346, 0.4259, 6.52E-05, 0.360732)^T из матрицы $\mathbf{A_{54}}$ преобразовались в индикаторы. Валидная u-переменная вычисляется по формуле $u_{ij}=z_{i1}a_{1j}+z_{i2}a_{2j}+z_{i3}a_{3j}+z_{i4}a_{4j}+z_{i5}a_{5j}$ j=1,2, для всего множества z–переменных $\{z_1,\ldots,z_5\}$ с 9 весомыми "весами"-индикаторами, ибо набор индикаторов пополнился дополнительными элементами. Случай j=3 мы не рассматриваем, так как для спектра $\Lambda^{(u)}_{44}$ мы назначили для числа ℓ=2 (число доминирующих собственных чисел) значение 2. Для спектра $\Lambda^{(u)}_{44}$ из системы $(V_{44,4},(\Lambda^{(u)}_{44},U_{44,4},))$ мы назначили для числа ℓ=2 значение 2, а для спектра $\Lambda^{(v)}_{44}$ из системы $(U_{44,4},(\Lambda^{(v)}_{44},V_{44,4},))$ мы назначили для числа ℓ значение 3. До решения Оптимизационной Задачи $(\Lambda_{44},C_{44})=>(\Lambda^{(u)}_{44},A^+_{54})$ в матрице A^+_{54} было 5 штук индикаторов, после - стало индикаторов 9=5+4: добавились 4 компоненты в 2-х собственных векторах после решения Оптимизационной Задачи 1: $(\Lambda_{55},C_{44})=>(\Lambda^{(u)}_{pp},A^+_{54})$ с ограничением вида $\lambda^{(u)}_1>\lambda^{(u)}_2$.

Мы дали положительный ответ (при 5 разах реализации пар систем) на нашу гипотезу. Наши сравнения анализируемых присущих рассматриваемому варианту «количества индикаторов в матрице A^+_{54} равно количеству индикаторов в матрице B^+_{44}» параметров 2-х систем дали положительный результат: да – соответствующие друг другу параметры практически равны в 2-х сравниваемых системах дисперсий, если наборы назначенных ранее индикаторов в матрице $\mathbf{A^+_{54}}$,, в матрице B^+_{44} количественно равны. В каждой паре систем моделируемые в ОМ ИКП случайные дисперсии (из $\Lambda^{(u)}_{44},\Lambda^{(v)}_{44}$) имеют приближенно одинаковые («наибольшие», не «средние») значения параметров (значений дисперсий из $\Lambda^{(u)}_{44},\Lambda^{(v)}_{44}$)) в парах моделируемых случайных матриц $(\Lambda^{(v)}_{44},V_{44,4},)$, $(\Lambda^{(u)}_{44},U_{44,4},)$ в схемах $(U_{44,4},(\Lambda^{(v)}_{44},V_{44,4},))$ и $(V_{44,4},(\Lambda^{(u)}_{44},U_{44,4},))$ моделирования валидных u- и v –переменных.

Более сложный случай заметного превышения одного количества индикаторов в наборе назначенных ранее индикаторов мы рассмотрим в другой статье. Сколько пар $(\lambda_j,\mathbf{a}^+_j)$, (λ_k,b^+_k) наших уникальных случайных дисперсий определяют состав индикаторов и статус системы дисперсий $\lambda^{(u)}_j$, $\lambda^{(v)}_k$ валидных u- и v-переменных (вычисляемых и моделируемых)?.

Что происходит с составами заданных и вновь появившихся индикаторов знаний в модельных матрицах A^+_{54} , B^+_{44} значений индикаторов знаний, если матрица $U_{44,4}$ будет вычисляемой, а матрица $V_{44,4}$ - моделируемой? В обоих случаях смоделированные независимо матрицы A^+_{54} , B^+_{44} остаются прежними. Изменяются матрицы $U_{44,4}$ и $V_{44,4}$: если матрица $U_{44,4}$ была модельной, то она по методу зарождения становится вычисляемой, а матрица $V_{44,4}$ – моделируемой. В вычисляемой матрице $U_{44,4}$ избыточно-канонических u-переменных генерируются случайные (не поддающиеся регулированию) линейные комбинации $u_{ij}=z_{i1}*a^+_{1j}+\ldots+z_{i5}*a^+_{5j}$, содержащие заметные значения индикаторов $a^+_{1j},\ldots, a^+_{5j}$, j=1,…,4, из модельной матрицы A^+_{54} индикаторов.

Количество содержащихся заметных значений индикаторов может оказаться:

а) равным 5 из 20 рассматриваемых модельных $a^+_{1j},\ldots, a^+_{5j}$, j=1,…,4;

б) превысить количество заданных ранее 5 заметных значений индикаторов.

Эти 2 варианта требуют нашего внимания. Если реализовался случай а), то он означает правильность нашего способа выбора выделенных заметных индикаторов извлекаемых знаний в матрице A^+_{54}. Заметим, что мы извлекаем крупицу знаний из одной выборки $Z^+_{44,5}$: 5/(44*5)=0,02273=2,27% процентов от общего количества имеющих содержательный смысл чисел (из общего их множества $\{z_{ij}\}$).При этом применили всю матрицу A^+_{54} индикаторов извлекаемых знаний, доля замеченных нами индикаторов равна 5/20=0.25 =25%.

Вывод: доля значений индикаторов в матрице A^+_{54}, в матрице B^+_{44} существенно выше доли общего количества реальных данных. Но в статьях [ ] замечена ограниченность этой доли от размерностей q p, q+p=n. Это означает, что наши когнитивные модели извлечения цифровых знаний не зависят или слабо зависят от объема реальных многомерных данных m>n.

Этот вывод позволяет нам применять наши когнитивные модели извлечения цифровых знаний при анализе больших структурированых данных (big data): смешение и интеграция данных, имитационное моделирование, статистический анализ, визуализация аналитических данных.

Насколько правильно это число отражает количество знаний в выборке $\{z_{ij}\}$? Мы использовали только индикаторы в виде матрицы A^+_{54}. Существуют ли другие индикаторы других видов? Нужен ответ на вопрос: насколько существенно может превысить количество заданных заранее 5 заметных значений индикаторов в матрице A^+_{54}, в матрице B^+_{44}.

Модельные значения индикаторов знаний изменяют смыслы валидных переменных

Рассмотрим случай, когда в матрице $\mathbf{A^+_{54}}$,, в матрице B^+_{44} доли количеств индикторов равны.

В паре систем моделируемые матрицы $\mathbf{A^{+}_{54}}$,, B^{+}_{44} содержат ране фиксированные 5 и добавленные при решении Оптимизационных Здач 9=5+4 модельные значения индикаторов знаний. Эти знания либо равны прежним, либо исправляют прежние знания.

Ниже проведем анализ со ответствующих собственных векторов и знаний случайных дисперсий из $\Lambda^{(u)}_{44},\Lambda^{(v)}_{44}$. Проведем смысловой анализ смыслов валидных переменных с новыми модельными индикаторами. Покажем как модельные значения индикаторов знаний исправляют (или не изменяют) старые смысли валидных переменных на новые.

Случайные дисперсии (из $\Lambda^{(u)}_{44},\Lambda^{(v)}_{44}$) имеют приближенно одинаковые («наибольшие», но не «средние») значения параметров (значений дисперсий из $\Lambda^{(u)}_{44},\Lambda^{(v)}_{44}$)) в парах моделируемых случайных матриц $(\Lambda^{(v)}_{44},V_{44,4},),(\Lambda^{(u)}_{44},U_{44,4},)$ в системах $(U_{44,4},(\Lambda^{(v)}_{44},V_{44,4},))$ и $(V_{44,4},(\Lambda^{(u)}_{44},U_{44,4},))$ моделирования валидных u- и v –переменных.

Пары матриц $(A^{+}_{54},U_{44,4})$, $(B^{+}_{44},V_{44,4})$ моделруют матрицы значений коррелированных z-переменных $Z_1= U_{44,5}A^{+T}_{54}$ $(V_{44,4}B^{+T}_{44})$, при условии, что известна *вычисляемая* матрица $U_{44,5}$ (вычисляемая матрица $V_{44,4}$) и известна *модельная* матрица A^{+}_{qp} (B^{+}_{44}).

Переменная № 2 (z-переменная №2 2-ая компоннта 1-го, 2-го и 3-го в собственного вектора из матрицы B^{+}_{44}) имеет смысл(z_2)=«количество междугородных разговоров на 1 предприятие» имеет 3 индикатора в 3-х столбцах матрицы индикаторов B^{+}_{44}. Значения этих индикаторов из матрицы B^{+}_{44} приведены в таблице 2: b^{+}_{21}=0,4223, b^{+}_{22}=0,4411, b^{+}_{23}=0,4129. Расположим 3 индикатора в 3-х столбцах матрицы собственных векторов ${}_4B^{+}_{44}$. Этим расположением мы распределяем 3 индикатора в 3 v–переменных (допускаем 3-х уровневую дисперсию) из 4-х возможных: $V_{44,4}=Z_{44,4}B^{+}_{44}$. Дисперсия 4-ой v–переменной моделируется достаточно малой: $\lambda^{(v)}_4$=0.23020. Нахождение 3-х компонент-индикаторов в 3-х собственных векторах из матрицы B^{+}_{44} собственных векторов означает наличие 3-х v–переменных с доминирующими дисперсиями. Это число по функции похоже на число доминирующих собственных чисел, определяемых по критерию Хорна, Каттела, Кайзера-Дикмана, Джоллиффа. Ниже приведен пример моделирования матрицы $V_{44,4}$ v–переменных с доминирующими дисперсиями 6.44627, 5.82433, **1.00000**.

Но $(B^{+}_{44},V_{44,4})Z_2=V_{44,4}B^{+T}_{44}$, $z_{i1}=v_{i1}b^{+}_{11}+v_{i2}b^{+}_{12}+v_{i3}b^{+}_{13}+v_{i4}$ $b^{+}_{14}=v_{i1}0.5108+v_{i2}0.4728+ v_{i3}0.56632+ v_{i4}0.44139$.

Полученная нами небольшая (практически одинаковая) степень превышения наиболшей дисперсии (1.1068) восстанавливают исходные смысли каждой z–переменной.

Проиллюстрируем это для одной z-переменной из матрицы Z_2, используя смысловые равенства с переменными и со смысловыми коэффициентами (постоянными) при них. Математическое равенсто $v_{i1}=z_{i1}b^{+}_{11}+z_{i2}b^{+}_{21}+z_{i3}b^{+}_{31}+z_{i4}b^{+}_{41}$ дает смысловое равенство.

Смысл(z_{i1})=v_{i1}смысл(b^{+}_{11})+v_{i2}смысл(b^{+}_{12})+v_{i3}смысл($v_{i3}b^{+}_{13}$)+v_{i2}смысл ($v_{i4}b^{+}_{14}$) равен при фактических значениях коэффициентов из математического равенста

$v_{i1}=z_{i1}b^{+}_{11}+z_{i2}b^{+}_{21}+z_{i3}b^{+}_{31}+z_{i4}b^{+}_{41}=z_{i1}$ 0.5108+z_{i2}0.4728+z_{i3}0.56632+z_{i4}0.44139 смыслу фразы «количество ОТА для населения». Это выглядит так. Смысл(v_{i1})=смысл(z_{i1})*b^{+}_{11})+ смысл(z_{i2})*(b^{+}_{12})+смысл(z_{i3})*b^{+}_{13}+ смысл(z_{i4})*(b^{+}_{14}). Этот смысл равен сыслу «количество ОТА для населения».

Аналогично доказываются: Смысл(z_{i2})=«количество междугородных разговоров на 1 предприе», Смысл(z_{i3})=«количество ОТА для предприятий», Смысл(z_{i4})=«другие количества разговоров». Смысл(z_{i1})=«количество ОТА для населения» имеет наибольшую дисперсию, т е при наилучших факторах воздействий на количества ТК-услуи. Аналогично линейная комбинация для v-переменной v_2 (с коэффициентами, равными компонентам 2-го собственного вектора из матрицы собственных векторов B^{+}_{44}) когнитивно моделирует смысл v-переменной v_2 , равной Смысл(z_{i2})=«коллоличество междугородных разговоров на 1 предприе», Смысл(z_{i3})=«количество ОТА для предприятий», Смысл(z_{i4})=«другие количества разговоров». Мы когнитивно смоделировали согласно 4 модельным весомым индикатрам смыслы 4-х z–переменных z_6, z_7, z_8, z_9.

Переменная №2 со Смыслом(z_{i2})=«количество междугородных разговоров на 1 предприятие»,, имеет немного меньшую (не среднюю по рангу) дисперсию 5.82433. Отметим: дисперсии 6.44627, 5.82433 имеют величины одного порядка, поэтому v-переменные v_2 имеют наибольшие дисперсии, они соответствуют наилучшим факторам воздействий на реализацию количеств ТК-услуг для населения и предприятий. Подчеркнем: «количество ТК-услуг для населения и предприятий», а не «расходов на виды ТК-услуг для населения и предприятий».

Коэффициенты, равные компонентам 3-го собственного вектора (ему соответствует наименьшш собственное число 1.0000) из матрицы собственных векторов B^{+}_{44}, образуют 3-ю линейную комбинацию для v-переменной v_3. Когнитивый смысл v-переменной v_3 равен

взвешенной сумме Количеств разных видов ТК-услуг, имеющей малую исперсию (1.00000.).

Наше размещение 3 индикаторов в 3-х столбцах матрицы собственных векторов ${}_4B^+{}_{44}$ позволило нам смоделировать 3 сценария воздействий факторов на 4 вида количественных ТК-услуг: наилучшую, среднюю и худшую. Такие качественные и количественные параметры распределения 5 индикаторов в 3 v–переменных из 4-х: $V_{44,4}=Z_{44,4}B^+_{44}$.

Переменная №4 из 1-го множества z–переменных $\{z_1,\ldots,z_5\}$ со смыслом Смысл(z_{i4})=«международный трафик на СНГ (мин) для предприятий» не имеет индикатора извлекаемых знаний: $\mathbf{a}^+_{42}=0.0000$. Смысл(z_{i4})=u_{i2}смысл(a^+_{12})+u_{i2}смысл(a^+_{22}) +u_{i3}смысл(a^+_{32}) +u_{i5}смысл(b^+_{52}) равен Смысл(z_{i4})=«расходы на разные виды ТК-услуг за исключением расходов по международному трафику на СНГ (мин) для предприятий». Модельный индикатор $\mathbf{a}^+_{42}=0.0000$ дополняет 5 заданных индикаторов и уточняет когнитивый смысл u-переменной №2 «расходы предприятий и населения на разные виды ТК-услуг». Этот смысл был сформирован при формировании множества z-переменных $\{z_1,\ldots,z_5\}$.

Разделение «расходов на виды ТК-услуг для населения и для предприятий» на 2 типа по степени изменчивости дисперсий 2-х валидных модельных u-переменных u_1,u_2 матрицы $U_{44,4}$ для известных значений дисперсий $\lambda_1,\lambda_2,\lambda_3,\lambda_4$ валидных модельных u-переменных при наилучших факторах воздействий на «расходы ТК-услуги».

В этой статье (в отличие от статьи [3]) матрица $U_{44,4}$ вычисляетя (не моделируется) аналогично вычисляемой матрице $V_{44,4}$ (смотрите статью [3]). Вычисление элементов матрицы $U_{44,4}$ происходит по формуле путем преобразования любой декоррелированной выборки объема m=44. Этот шаг: $\Lambda^{(1)}{}_{44}=>(U_{44,4})$ при вычислении элементов матрицы $U_{44,4}$ для известных значений дисперсий $\lambda_1,\lambda_2,\lambda_3,\lambda_4$ валидных модельных u-переменных одновременно с матрицей $U_{44,4}$ генерирует случайные значения дисперсий ($\lambda_1,\lambda_2,\lambda_3,\lambda_4$ модельных v-переменных: $(1/44)U_{44,4}{}^TU_{44,4}=\Lambda^{(u)}{}_{44}$=diag ($\lambda_1,\lambda_2,\lambda_3,\lambda_4$)= diag(**2.40999,1.1296**,0.23020, 0.23020) . Вычисленная матрица $U_{44,4}$ плюс генерирует случайные значения дисперсий ($\lambda_1,\lambda_2,\lambda_3,\lambda_4$ модельных u-переменных и также должен быть проведен аккуратно как и шаг $\Lambda^{(v)}{}_{44}=>(V_{44,4})$ при вычисляемой матрице $V_{44,4}$[3] и с высокой точностью.

Известные значения дисперсий 2.40999,1.1296,0.23020, 0.23020 валидных u-переменных примечательны тем, первые 2 из них: 2.40999,1.1296 имеют набольшие значения, они являются собственными числами (λ_1=2.40999, λ_2=1.1296) для 9=10=5*2-1 штук индикаторов (0.3318, -0.5074, 0.359106, 0.4605,0.539849), (-0.3083, 0.770346, 0.4259, ~~6.52E-05~~, 0.360732) – компонентов собственных векторов $\mathbf{a}^+_1$=(0.3318, -0.5074, 0.359106, 0.4605, 0.539849)^T и $\mathbf{a}^+_2$=(-0.3083, 0.770346, 0.4259, 6.52E-05, 0.360732)^T из матрицы $\mathbf{A}_{54}$. Две пары (λ_1 , $\mathbf{a}^+_1$), (λ_2,$\mathbf{a}^+_2$) наших уникальных объектов определяют состав индикаторов и дисперсии (λ_1,λ_2 валидных -u-переменных.

Здесь важными входными управляемыми параметрами состава индикаторов являются величины ($\lambda_1,\lambda_2,\lambda_3$) и степень превышения значения λ_1 величины λ_2 и λ_3. Чем больше выражена степень превышения значения λ_1 величины λ_2, тем большее количество индикаторов существует для набора валидных переменных с доминирующими дисперсиями из 2-х наборов рассматриваемой пары наборов валидных (u,v)-переменных.

Мы модеировали матрицу A^+_{54} как матрицу собственных векторов для матрицы собственных чисел
Λ_{55}=diag($\lambda_1,\lambda_2,\lambda_3,\lambda_4$,0)=diag(**2.40999,1.12960**, 0.23020, 0.23020,0).

При реализации модели Λ^+_{44} =>(A^+_{54}, B^+_{44},$U_{44,4}$,$V_{44,4}$,$Z_{44,4}$= $[Z_{44,5}|Z_{44,4}]$) случай выполнения равенства $\Lambda^{(u)}_{pp}=\Lambda^{(v)}_{pp}=\Lambda_{pp}$ изложен в статье [2]. Если добавим к 2 и 3 столбцам с индикаторами еще 2 или 3 новых столбцов, то происходит увеличение размерностей q и p. Увеличение значений q и p >4 приведет к уменьшению доли заметных элементов (индикаторов) в матрицах A^+_{qp}, B^+_{pp}. Происходит увеличение объема извлекаемых знаний, возможно существенное дополнение ранее извлеченных знаний.

Моделирование матриц U_{mp}, V_{mp} значений би-ортогональных пар (двух видов) валидных переменных

Существуют пары валидных переменных: (вычисляемая, моделируемая) и (моделируемая,вычисляемая). Би-ортогональные (u,v)-валиные переменные является (вычисляемая, моделируемая)- парой валидных переменных, если матрица U_{mp} значений u-валидных переменных является вычисляемой, а матрица V_{mp} значений v-валидных переменных является моделируемой. Би-ортогональные (u,v)-валиные переменные является (моделируемая,вычисляемая)-парой валидных переменных, если матрица U_{mp} значений u-валидных переменных является моделируемой, а матрица V_{mp} значений v-валидных переменных является вычисляемой. Эти определения соответствуют парам моделируемых случайных

матриц $(\Lambda^{(v)}{}_{44},V_{44,4},),(\Lambda^{(u)}{}_{44},U_{44,4},)$ в системах $(U_{44,4},(\Lambda^{(v)}{}_{44},V_{44,4},))$ и $(V_{44,4},(\Lambda^{(u)}{}_{44},U_{44,4},))$ моделирования валидных u- и v–переменных. Случайные дисперсии (из $\Lambda^{(u)}{}_{44},\Lambda^{(v)}{}_{44}$) имеют приближенно одинаковые («наибольшие», но не «средние») значения параметров (значений дисперсий из $\Lambda^{(u)}{}_{44},\Lambda^{(v)}{}_{44}$)). Эта одинаковость «наибольшего» качества установлена нами в ОМ АИКП при наличии зависимости между матрицами $U_{mq}=Z^{+}{}_{mq}A^{+}{}_{qq}$ и $V_{mp}=Z^{+}{}_{mp}B^{+}{}_{pp}$ через знания случайных дисперсий либо из $\Lambda^{(u)}{}_{44}$, либо из $\Lambda^{(v)}{}_{44}$.

Матрицы U_{mp},V_{mp} являются матрицами из m значений би-ортогональных избыточно-канонических переменных (biorthogonal canonical-redundancy variables). Матрица U_{mp} равна $U_{mp}=Z_1A_{qp}$, если известны матрицы Z_1 и A_{qp}. Модельная матрица значений валидных переменных V_{mp} в нашей обратной задаче но Но она является матрицей би-ортогональных избыточно-канонических переменных, так как удовлетворяет равенству $(\Psi_{12}\Psi_{21}-\mathbf{\Lambda^2})\mathbf{A_{qp}}=0_{pp}$ из ПМ ИКП, где матрица $\Psi_{12}\Psi_{21}$ – симметрическая матрица. Наша матрица $\mathbf{A_{54}}$ удобна и полезна те, что в нее внедрены индикаторы когнитивных знаний из других исследований [11-13]. В нашей ОЗ нет необходимости иметь матрицу значений $\Psi_{12}\Psi_{21}$. достаточно иметь матрицы (Λ_{44}, A_{54}.

Имея матрицу $V_{44,4}$ и матрицу $\Lambda^2{}_{44}$ решаем Оптимизационную Задачу моделирования матрицы $U_{44,4}$ такой, что удовлетворяющей равенству $(1/44U^TV=\Lambda_{44}=\text{diag}(2.40999,1.12960, 0.2302, 0.2302)$. Дисперсии 4-х –переменных в нашей модели равны: $s_1=2.40999$, $s_2=1.12960$, $s_3=0.23020$, $s_4=0.23020$.

Результаты решения Оптимизационной Задачи приведены в Таблице 5. В столбцах №7-№10 приведены 44 значений элементов пары матриц $(U_{44,},V_{44})$: $(1/44)U^TV=\text{diag}(2.7983,1.095702269,0.05299204,0.05299204)$, матрицы $U_{44,4}$: $(1/44)U^TU=\text{diag}(3.2493,1.0628,0.4798,0.4798)$, матрицы $V_{44,4}$: $(1/44)V^TV=\text{diag}(2.40999,1.12960,0.23020,0.23020)$. Заметим, что

$(1/44)U^TU\neq I_{44},(1/44)V^TV \neq I_{44}$ по методу построений матриц $\mathbf{A^+_{54}}$ и $B^+{}_{44,4}$.

Моделируемые 2 матрицы U_{mp},V_{mp} избыточно-канонических переменных нужны для моделирования стандартизованных матриц Z_1,Z_2, состоящих из m значений z-переменных, объединенных в матрицы Z_1,Z_2.

Преимуществом применямой в данной статье Обратной модели является би-ортогональность 2-х множеств избыточно- канонических переменных, возможность моделировать отдельно и независимо друг о друга матрицы A_{qp}, B_{pp}. Конструирование новой собственной структуры (Λ_{pp}, A_{qp},B_{pp}) взамен 5 старых и перенос из 5 матриц индикаторов присутствия знаний в другую систему, моделирование пар валидных показателей (с новыми свойствами) является основой для новой методики конструирования системы валидных u- v-переменных и коррелированных z-изменчивостей $z_1,\ldots,z_9$. При преобразовании матриц U_{mp}, V_{mp} в матрицы коррелированных z- изменчивостей $z_1,\ldots,z_9$ применчем ортонормированные матрицы $B^+{}_{pp}$ и $A^+{}_{qp}$, содержащие доли выделенных элементов.

Таблица 3. Вычисляемая и модельная матрицы значений валидных переменных V_{mp} и U_{mp}

1	2	3	4	5	6	7	8	9
	Вычисляемая матрица $U_{44,5}$				Моделируемая матрица V44,4			
	$\mathbf{u}_1$	$\mathbf{u}_1$	$\mathbf{u}_1$	$\mathbf{u}_1$	$\mathbf{v}_1$	$\mathbf{v}_1$	$\mathbf{v}_1$	$\mathbf{v}_1$
1	-0,502434	2,313568	-0,457239	-0,632461	-1,55989	-0,4690656	-0,698229	1,2931104
2	0,258994	1,038707	2,072937	0,490587	0,153123	1,24836672	-0,125495	0,8345394
3	-0,782993	0,471485	0,862941	-0,804467	3,223831	-1,2795496	-0,6545	-1,215651
4	0,098837	1,716508	-0,133406	0,39993	0,249814	-0,9792213	-0,044205	-1,364772
5	1,181802	1,664968	-1,216511	0,13734	-5,36465	0,04766565	-0,763655	1,0658699
6	1,684593	-2,528888	-0,068551	-0,162875	0,050158	2,43067508	0,9101472	-1,446583
7	1,782967	-2,271808	0,891393	0,309744	0,856457	0,91949365	0,5166361	0,0609756
8	0,317197	1,113611	0,858594	0,550849	1,161173	0,3559222	1,3311165	0,493941
9	0,791034	1,216878	1,788099	-0,696657	-1,55969	-1,2109486	1,0766729	1,0466425
10	0,161256	-1,346893	-0,046969	-0,654388	1,158179	-1,8138114	-0,293591	0,2556039

11	-0,645038	-1,055364	-2,096957	-0,250753	1,540874	0,82950868	0,0858387	1,1843091
12	1,074211	-1,575238	-0,741725	0,172643	-1,72362	1,11362382	-1,933176	-0,60681
13	-0,820236	-1,334427	1,191535	-0,048257	2,026987	-0,9438502	0,4882519	-1,442387
14	0,580467	1,549483	-0,486073	0,852302	0,478653	0,06451115	-1,548627	-0,770911
15	-3,469728	0,065552	-0,811627	0,51021	-2,92318	1,52775191	-0,357534	-0,122276
16	0,308816	0,088733	-1,634627	-0,369881	1,137174	-0,6374092	1,5564223	0,5802619
17	2,589167	1,101782	-0,119494	-0,374065	-1,2721	-0,9666089	1,1164078	-0,100572
18	2,972902	-0,289759	-0,114955	0,697809	-0,77793	1,67907161	-0,429598	-1,318764
19	-1,007224	-0,644284	-0,740004	0,618835	-0,45896	-0,3519826	-0,712059	1,805882
20	0,552907	1,261557	0,548865	0,029254	-3,59833	-0,8961181	0,4785542	0,5010214
21	-1,889861	2,105233	-0,380566	-0,058674	2,75526	-1,6415257	0,8324162	0,6459955
22	-0,491451	-1,06766	0,849634	-0,478132	4,60297	-0,2106851	-0,108233	1,4575747
23	-1,453345	-0,519656	1,327683	0,332452	4,016057	0,80180625	-0,112459	-0,779854
24	1,785755	2,482937	-1,792988	0,160658	1,664613	-1,1478057	-0,701974	0,3599418
25	-2,318368	-1,233737	0,509317	0,240203	1,224401	0,89011894	1,6878445	-1,453358
26	-3,56237	-1,495025	0,549928	-0,730771	0,401047	0,75959398	1,9898404	1,0241316
27	0,74778	-2,492406	-0,311132	0,122611	-2,83785	-1,0787735	-0,532778	1,2131048
28	-3,443237	0,164308	0,479218	-0,061375	0,491291	0,81207484	0,8085056	1,1502868
29	-1,014458	-2,097626	-1,474884	-0,427039	1,833889	1,20614755	-1,145687	0,2863142
30	-1,569798	2,229737	0,127794	-0,351231	-2,25613	-0,3772999	1,247788	0,693654
31	-1,005194	-1,67304	1,149872	0,501238	0,899516	1,12560714	-0,457276	1,7832026
32	2,041062	-2,02311	-0,021419	-0,132691	-5,34105	0,1195069	0,4512413	-0,127901
33	0,678764	-0,632564	-2,022346	-0,288978	-2,43001	1,62254879	0,1203093	-0,731864
34	0,750228	0,488484	1,415366	0,236868	2,607785	-1,836707	-0,064543	-0,339451
35	-1,831766	-1,480183	-0,56469	0,580596	2,776747	1,78974938	-1,621459	0,3349317
36	-1,115466	1,543056	-2,10971	-0,29121	-1,21339	0,34324458	0,8122167	-1,678352
37	2,079172	-1,756716	-0,69123	-0,582803	3,159494	-1,4691829	-0,020157	-0,276547
38	-0,296283	-0,483625	-0,754469	0,862857	-0,99818	-0,7714547	-1,999321	-0,522526
39	-0,122255	1,774258	-0,184624	0,578389	1,052794	-0,4613104	-1,928626	-0,602263
40	1,309316	-1,300957	0,520572	-0,691332	-0,76167	-0,7746067	0,7970019	-0,99659
41	0,994644	1,13963	0,091235	0,567162	-0,18939	1,28997452	-0,173653	1,2080835
42	0,734999	-0,87991	1,663323	0,278226	-1,57002	-1,5365426	-1,404294	-0,889953
43	0,032377	3,31348	0,961231	-0,693539	-5,57683	-1,0566431	0,5168113	-1,5116
44	1,832231	1,338898	1,116605	-0,449119	2,835623	0,97813953	1,0511076	-0,936391
	0,0000	0,0000	0,0000	0,0000	-0,0012	0,0010	0,0010	0,0010
	2,4000	2,4100	1,1296	0,2302	5,7744	1,2732	1,0000	1,0022
					2,4100	1,1296	0,2302	0,2302
					1,5524	1,0628	0,4798	0,4798
					1,5524	1,0628	0,4798	0,4798

Модельные индикаторы и не-индикаторы увеличивют количество m значений изменчивостей ($z_{i1},\ldots,z_{i9}$),i=1,…,m

Модельные матрицы A^{+}_{54}.и B^{+}_{44} в первых 2-х, 3-х столбцах содержат 10 значений модельных индикаторов и 26 значений не- индикаторов. Степень изменчивости множества 5 z–переменных $\{z_1,\ldots,z_5\}$ можно определить по дисперсиям 2-х валидных u- и v-переменных. Каждая валидная u-переменная равна линейной комбинации z–переменных из всего множества z–переменных $\{z_1,\ldots,z_5\}$, ибо набор индикаторов пополнился дополнительными элементами в 2-х первых столбцах матрицы A^{+}_{54}. Все индикаторы (a_{42}=52E-05 – не-индикатор) компоненты 2-х собственных векторов $\mathbf{a}^{+}_1$=(0.3318, -0.5074, 0.359106, 0.4605, 0.539849)^T и $\mathbf{a}^{+}_2$=(-0.3083, 0.770346, 0.4259, 6.52E-05, 0.360732)^T из матрицы $\mathbf{A_{54}}$ преобразовались в индикаторы. Индикаторы удовлетворяют ограничениям: $\mathbf{a}^{+}_1\mathbf{a}^{+}_1{}^{T}$=1, $\mathbf{a}^{+}_1{}^{T}\mathbf{a}^{+}_1$=1, $\mathbf{a}^{+}_1$ $\mathbf{a}^{+}_1{}^{T}$=1, $\mathbf{b}^{+T}_1\mathbf{b}^{+}_1$=1, $\mathbf{b}^{+}_1\mathbf{b}^{+T}$=1, $\mathbf{b}^{+T}_2\mathbf{b}^{+}_2$=1, $\mathbf{b}^{+}_2\mathbf{b}^{+T}_2$=1, $\mathbf{b}^{+T}_3\mathbf{b}^{+}_3$=1, $\mathbf{b}^{+}_3\mathbf{b}^{+T}_3$=1. Выше мы показали когнитивный эффект: модельные значения индикаторов знаний исправляют смысли валидных переменных. Теперь мы обнаружили эффект: модельные значения индикаторов (извлекаемых знаний!) и **не-индикаторов увеличивют число m - количество значений изменчивостей ($z_{i1},\ldots,z_{i9}$),i=1,…,m. Смыслы** валидных переменных не меняются, если в смыслах валидных переменных сохраняются полные суммы смыслов z–переменных$\{z_1,\ldots,z_5\}$ и $\{z_6,\ldots,z_9\}$:**с**мысл(u_{i1})=смысл(z_{i1})*a^{+}_{11})+смысл(z_{i2})*(a^{+}_{12})+ смысл(z_{i3})*a^{+}_{13} +смысл(z_{i4})*(a^{+}_{14})+смысл(z_{i5})*(a^{+}_{15}),Смысл(v_{i1})=смысл(z_{i1})*b^{+}_{11})+смысл(z_{i2})* (b^{+}_{12})+смысл(z_{i3})*b^{+}_{13}+смысл(z_{i4})*(b^{+}_{14}). А при появлении не-индикатора в одном из 2-х матриц A_{54}, B^{+}_{44} смысл z–переменной изменится: сумма смыслов уменьшится. Но сумма смыслов может и не измениться - это зависит от образовавшейся фразы смысла.

В рамках ОМ АИКП не применяется термин «z–переменная», а применяется термин «значенийя изменчивостей ($z_{i1},\ldots,z_{i9}$),i=1,…,m», «случайные вычисляемые и моделируемые дисперсии». В задах из ОМ АИКП нет необходимости сохранять условие стандартизованности z–переменным ($z_1,\ldots,z_9$), рассматриваются «значения изменчивостей ($z_{i1},\ldots,z_{i9}$),i=1,…,m», матрицы «значений изменчивостей» Z^{+}_{mn}=[Z^{+}_{mq}| Z^{+}_{mp}]. В задах из ПМ АИКП [3-5] для заданной единственной матрицы Z^{+}_{mn}=[Z^{+}_{mq}| Z^{+}_{mp}] стандартизованных значений z–переменных ($z_1,\ldots,z_9$), рассматриваются матрицы корреляций R_{qq}={corr(z_i,z_j)}, R_{pp}={corr(z_i,z_j)}, C_{qq}={corr(z_i,u_j)}, i=1,…,5, C_{pp}={corr(z_i,v_j)}, i=6,…,9, j=1,…,4, матрицы дисперсий $\Lambda^{(u)}_{55}$=diag(), $\Lambda^{(v)}_{44}$=diag(), а также рассматриаются матрица значений y–переменных ($y_1,\ldots,y_5$), $Y_{mq}=Z^{+}_{mq}C_{qq}$, других y–переменных ($y_1,\ldots,y_4$), $Y_{mp}=Z^{+}_{mp}C_{pp}$. Мы в ОМ АИКП изучаем эти y–переменные в виде пары (u,v)- переменных. Но при наличии зависимости между $Y_{mq}=Z^{+}_{mq}C_{qq}$ и $Y_{mp}=Z^{+}_{mp}C_{pp}$. В ОМ АИКП $Y_{mq}=Z^{+}_{mq}C_{qq}$,и $Y_{mp}=Z^{+}_{mp}C_{pp}$ имеют другие обозначения и свойства: U_{mp},= $Z^{+}_{mq}A^{+}_{qp}$, V_{mp}= $Z^{+}_{mp}B^{+}_{44}$.

Задачу превращения «значений изменчивостей ($z_{i1},\ldots,z_{i9}$),i=1,…,m», в множество «стандартизованных z–переменных» здесь не рассматриваем.

Модельные индикаторы и не-индикаторы увеличивают количество m значений изменчивостей ($zi_1,\ldots,z_{i9}$),i=1,…,m . Появляются дополнительные слагаемые в формуле валидной u= и v –переменной $v_{ij}=z_{i1}b_{1j}+z_{i2}b_{2j}+z_{i3}b_{3j}+z_{i4}b_{4j}$ j=1,2,3.

Степень изменчивости множества 4-х z–переменных $\{z_6,\ldots,z_9\}$, образующих линейную комбинацию v –переменной $v_{ij}=z_{i1}b_{1j}+z_{i2}b_{2j}+z_{i3}b_{3j}+z_{i4}b_{4j}$ j=1,2,3, для всего множества z–переменных $\{z_6,\ldots,z_9\}$, ибо набор индикаторов пополнился дополнительными элементами.

Визуализация динамик изменения значений n=q+p z-переменных

Мы провели визуализацию связанных показателей №1 («расходы предприятий на услуги связи на 1 предприятие), №8 («количество ОТА для предприятий»). Чем больше телефонных аппаратов на столах сотрудников, тем больше расходы предприятий на услуги связи у предприятий. На Рисунке 1 «изменчивости количеств ОТА зависят от изменчивости расходов на разговоры по телефонам»: при малых количествах аппаратов часто закупали новые аппараты (изменчивость z_8 изменяется сильно–левый край рафика изменчивости z_8), а при больших их количествах изменчивость z_1 изменяется слабо и слабеет в конце периода – правый край рафика. Эти изменчивости происходят при постоянном увеличении расходов, которые сильнее росли в начальном периоде работ предприятий (левый край рафика изменчивости z_1). Динамики таковы при частых коротких звонках количество разговоров большое, а минуты затрачены при этом небольшие: при частых коротких звонках. Превышение числа минут над количество разговоров иллютрирует наличие нечастых и долгих разговоров.

Визуализация другой пары связанных показателей №3 «междугородный трафик (минуты) для предприятий», № 7 («количество междугородных разговоров на 1 предприе). Тренды кривых показателей №1 (Рисунок 1) и №3 (Рисунок 2) одинаковы, они растут с одной силой.

А изменчивость z_7 изменяется постоянно и является средней и не слабеет в конце периода – правый край рафика (Рисунок 2). Эти изменчивости происходят при постоянном увеличении расходов на «междугородный трафик (минуты) для предприятий».

Таблица 4.

1	2	3	4	5	6	7	8	9	10
	z 1	z 2	z 3	z 4	z 5	z 6	z 7	z 8	z 9
1	-1,4439	1,7171	0,1166	-0,9482	-0,0671	-1,4140	-0,2802	0,4778	-0,9199
2	0,2032	1,3606	2,0233	1,7158	1,8772	0,5974	1,1274	-0,3394	0,9345
3	-1,1223	0,7262	-0,1540	-0,3978	-0,3200	0,6711	-0,2947	2,0738	0,5581
4	-0,1399	1,3655	0,9673	0,2431	0,8564	-0,3604	-1,2669	0,2260	-0,8956
5	0,0012	0,4128	0,5525	-0,0967	0,7065	-3,1502	-1,8395	-1,5506	-3,1598
6	1,1934	-2,8726	-0,6221	0,6207	-0,1402	1,6903	0,4917	-2,5424	0,8662
7	1,5682	-2,3257	0,3804	1,5762	0,7911	1,1648	1,0218	-0,4534	1,1972
8	0,2531	1,0946	1,4433	1,0493	1,3561	1,5152	1,5307	-0,2149	1,7422
9	-0,7337	0,7751	1,3164	0,9623	1,3368	-0,7595	-0,0410	-0,0562	-0,4642
10	-0,1147	-1,3406	-0,9914	-0,4096	-0,8344	-0,4322	-0,2595	1,8999	-0,0932
11	-0,1123	-1,1071	-2,0176	-1,7413	-1,9529	1,2279	1,8523	0,5531	1,8662
12	0,9959	-1,8948	-0,5783	0,1656	-0,2568	-1,4487	-1,4449	-0,6951	-1,8116
13	0,0963	-0,3196	-0,2345	0,3101	-0,3487	0,8656	-0,3334	0,6701	0,4348
14	0,4747	1,0459	1,1841	0,5662	1,1614	-0,6020	-0,9298	0,6630	-0,7936
15	-0,7166	1,7645	-1,3182	-1,7342	-1,9411	-0,9733	-0,7908	-2,0976	-1,3701
16	-0,2547	-0,6285	-1,0129	-1,1049	-0,8651	1,1609	1,2338	0,3222	1,4564
17	0,1859	-0,6153	1,0757	0,8597	1,4991	-0,4746	-0,5706	-0,5487	-0,6785
18	1,6979	-1,5405	1,3553	1,7801	1,8769	0,1532	-0,6564	-1,6887	-0,5663
19	0,4161	0,0214	-0,6218	-0,4813	-0,7630	-0,8041	0,5772	1,0846	0,0251
20	-0,1794	0,8423	1,0607	0,6074	1,0510	-1,9907	-1,3787	-1,0418	-2,1173
21	-1,3284	2,4637	-0,0336	-1,1414	-0,4912	1,1027	1,2197	2,0553	1,6893
22	-0,2601	-0,5065	-0,4880	-0,0446	-0,5193	2,1903	2,7911	2,7426	3,3220
23	-0,0255	0,7861	0,2223	0,3659	-0,0878	2,3668	1,4763	0,9874	2,3894
24	-0,0298	0,5951	0,8137	-0,1513	1,0492	-0,0899	0,1500	1,9464	0,3429
25	-0,1747	0,4342	-0,9102	-0,5922	-1,2865	2,0021	0,6245	-1,4587	1,3129
26	-1,3726	0,5643	-2,1127	-1,8161	-2,6426	1,6909	2,0181	-0,9332	2,0131
27	1,1258	-2,3406	-0,8815	0,2411	-0,5765	-2,2613	-1,0745	0,1956	-1,9133
28	-1,2478	1,9778	-0,9426	-1,3381	-1,5945	1,0928	1,6768	-0,2735	1,5608
29	-0,0707	-1,6183	-2,3699	-1,6575	-2,3229	0,8582	1,0269	0,7265	1,1921
30	-1,5214	2,4350	0,2156	-0,8898	-0,1991	-0,6242	-0,1353	-1,1097	-0,6091
31	0,6292	-0,3218	-0,0908	0,5820	-0,2461	0,7327	1,8925	0,5967	1,5985
32	1,1826	-2,6421	-0,2317	0,8345	0,2777	-2,4162	-2,1029	-2,6680	-3,0463
33	0,1625	-1,4461	-1,3470	-1,1131	-1,0718	-0,4060	-0,7554	-2,4238	-1,0643
34	0,3096	0,4367	1,4260	1,3673	1,4499	0,4271	0,0351	2,1954	0,6302
35	0,3662	-0,1711	-1,2028	-0,7815	-1,4446	1,3463	1,5189	1,0272	1,8015

36	-1,1056	1,1170	-1,1147	-1,9936	-1,3015	0,0025	-1,1598	-1,8052	-0,9440
37	0,7118	-2,7729	-0,7857	0,1333	-0,2294	0,9078	0,4910	2,2027	1,1734
38	0,8200	-0,1413	-0,1384	0,0071	-0,1751	-2,0069	-1,9404	0,8802	-2,1633
39	-0,0719	1,5660	1,0066	0,2345	0,8441	-0,7726	-0,9622	1,5045	-0,7790
40	0,2192	-1,7530	-0,2698	0,4370	0,0672	-0,3039	-1,0077	-0,6307	-0,8447
41	0,4843	0,5780	1,2829	0,9080	1,3513	0,4148	1,2337	-0,3456	0,8862
42	0,7633	-0,5325	1,0038	1,5391	1,1002	-2,3237	-2,5220	0,6714	-2,7065
43	-1,6291	2,5627	1,4800	0,1145	1,2651	-3,0555	-3,6292	-2,5909	-4,2763
44	-0,2052	0,2465	1,5396	1,2074	1,7573	2,5062	1,4302	-0,2918	2,2502
	0,0000	0,0000	-0,0001	-0,0001	-0,0001	0,0004	0,0010	-0,0013	0,0006
	0,6763	2,1470	1,2032	1,0341	1,3959	2,1180	1,9094	2,0123	2,8370

Рисунок 1

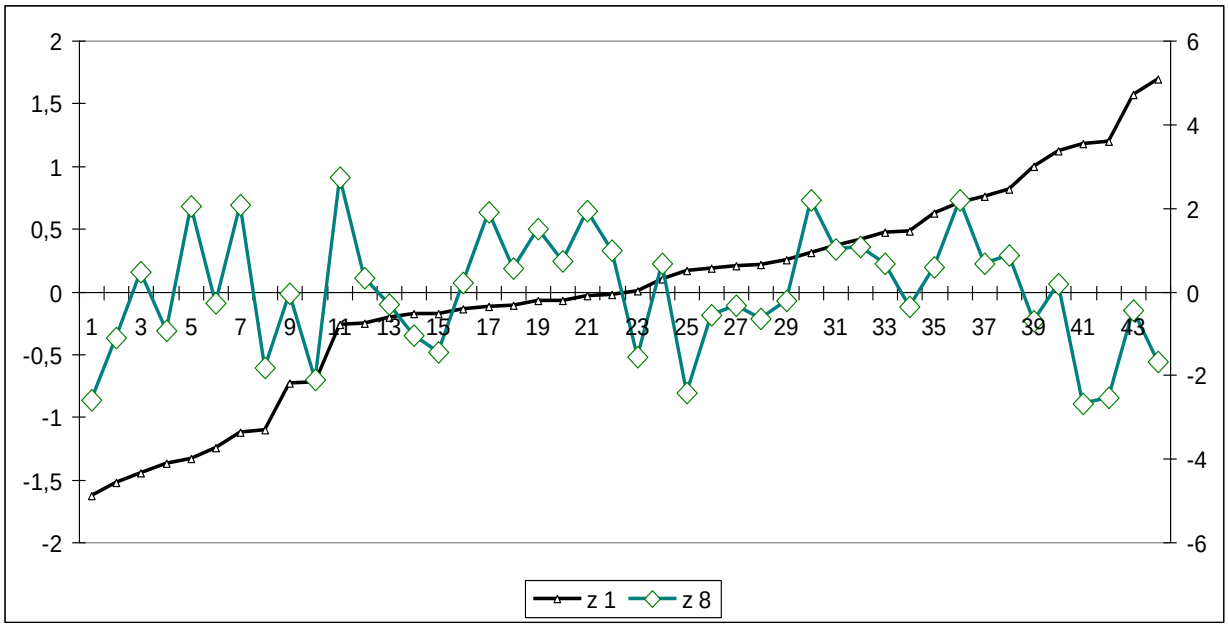
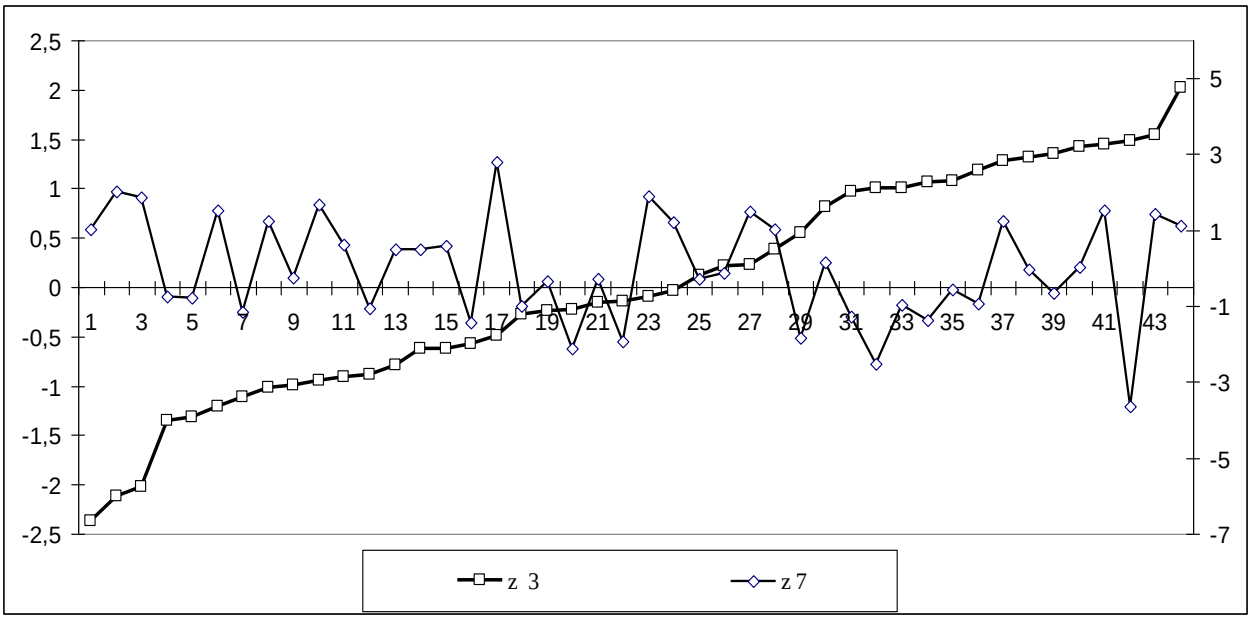


Рисунок 2



Заключение

Мы разработали другой вариант ОМ АИКП, в котором добавились новые индикаторы в двух матрицах и в матрице A^{+}_{54}, и в матрице B^{+}_{44}. Проверили анализ системы *вычисляемых* и *моделируемых* валидных u-,v-переменныхПара матриц ($V_{44,4}$,$U_{44,4}$) из системы такова, что матрица $V_{44,4}$ –*вычисляемая*, $U_{44,4}$–*моделируемая*. «Вычисляемая матрица» - по вычисляемым дисперсиям, «моделируемая матрица» – по моделируемым дисперсиям. Случайность значений элементов матриц ($V_{44,4}$, $U_{44,4}$), случайность значений дисперсий

Управление значениями случайных дисперсий (валидных u-переменных, v-переменных из 2-х классов вычисляемые дисперсии и моделируемыме мы провели только для класса «наиболшая дисперсия». Это обусловлено спецификой, особенностями анализируемого варианта ОМ АИКП, в результате решения задачи к 10 индикаторам добавились новые индикаторы в двух матрицах A^{+}_{54}, и B^{+}_{44}.

Управление случайными параметрами и дисперсиями для класса «средние дисперсии» не рассматривался.

Мы показали существование 3-х моделируемых наборов значений изменчивостей, соответствующих *3-м классам* («наиболшая», «средняя», «наименьшая»). Одна валидная переменная *(u- или v- переменная)*, воздействует на набор z-переменных (из 5-и или из 4-х штук) . Управление воздействием происходит под управлением случайных дисперсий $\Lambda^{(u)}_{44}$, $\Lambda^{(v)}_{44}$ из тройки объектов вида ($V_{44,4}$, ($\Lambda^{(u)}_{44}$,$U_{44,4,}$)), вида ($U_{44,4}$, ($\Lambda^{(v)}_{44}$,$V_{44,4,}$)).

В рассматриваемой постановке Обратной Задачи АИКП [3] не используются термины «матрицы корреляций», «стандартизованные значения z–переменных».Вместо «матрца собственных векторов» тепеь уместно применять термин «матрца комбинационных пропорцио нальностей» из статьи [4].

Для теоретического воплощения практических ситуаций доказана эмпирическая гипотеза: при равных по количеству наборах назначенных ранее индикаторов индикаторов в матрице $\mathbf{A^{+}_{54,}}$, в матрице B^{+}_{44} моделируемые в ОМ ИКП случайные дисперсии (из $\Lambda^{(u)}_{44}$,$\Lambda^{(v)}_{44}$) имеют приблизительно одинаковые («наибольшие») значения параметров (значений дисперсий из $\Lambda^{(u)}_{44}$,$\Lambda^{(v)}_{44}$)) в двух парах моделируемых случайных матриц ($\Lambda^{(v)}_{44}$,$V_{44,4,}$),($\Lambda^{(u)}_{44}$,$U_{44,4,}$) из систем ($U_{44,4}$,($\Lambda^{(v)}_{44}$,$V_{44,4,}$)) и ($V_{44,4}$,($\Lambda^{(u)}_{44}$,$U_{44,4,}$)) моделирования валидных u- и v –переменных. Эта одинаковость «наибольшего» качества установлена в ОМ АИКП при наличии зависимости между матрицами $U_{mq}=Z^{+}_{mq}A^{+}_{qq}$ и $V_{mp}=Z^{+}_{mp}B^{+}_{pp}$ через значения случайных дисперсий из двух диагональных матриц $\Lambda^{(u)}_{44}$, ($\Lambda^{(v)}_{44}$, либо только из матрицы $\Lambda^{(u)}_{44}$, либо только из матрицы $\Lambda^{(v)}_{44}$.

В обратных задачах из ОМ АИКП нет необходимости сохранять условие стандартизованности z–переменным (z_1,…,,z_9), вместо них рассматриваются «коэффициенты комбинационных связей» [4], «значения изменчивостей (z_{i1},…,,z_{i9}),i=1,…,m», матрицы «значений изменчивостей» [4, 12] Z^{+}_{mn}=[$Z^{+}_{mq}|Z^{+}_{mp}$]. В задачах из ПМ АИКП [2,3,8-11] для заданной единственной матрицы Z^{+}_{mn}=[$Z^{+}_{mq}|Z^{+}_{mp}$] стандартизованных значений z–

переменных ($z_1,\ldots,z_9$), рассматриваются матрицы корреляций $R_{qq}=\{corr(z_i,z_j)\}$, $R_{pp}=\{corr(z_i,z_j)\}$, $C_{qq}=\{corr(z_i,u_j)\}$, i=1,…,5,$C_{pp}=\{corr(z_i,v_j)\}$, i=6,…,9, j=1,…,4, матрицы случайных дисперсий $\Lambda^{(u)}{}_{55}=diag()$, $\Lambda^{(v)}{}_{44}=diag()$, а также рассматриваются матрица значений y–переменных ($y_1,\ldots,y_5$), $Y_{mq}=Z^{+}{}_{mq}\,C_{qq}$, других y–переменных ($y_1,\ldots,y_4$) $Y_{mp}=Z^{+}{}_{mp}C_{pp}$. Мы в ОМ АИКП изучили эти y–переменные в виде пары валидных (u,v)-переменных. Пары валидных (u,v)-переменных: (вычисляемая, моделируемая) и (моделируемая,вычисляемая). Но при наличии (в ОМ АИКП) зависимости между $U_{mq}=Z^{+}{}_{mq}$, $A^{+}{}_{qq}$ и $Y_{mp}=Z^{+}{}_{mp}B^{+}{}_{pp}$. В ОМ АИКП $Y_{mq}=Z^{+}{}_{mq}\,C_{qq}$,и $Y_{mp}=Z^{+}{}_{mp}C_{pp}$ имеют другие обозначения и свойства: $U_{mp}=Z^{+}{}_{mq}A^{+}{}_{qp}$, $V_{mp}=Z^{+}{}_{mp}B^{+}{}_{44}$. Установлен факт, характерный для ОМ АИКП, связанный с разбиением z–переменных ($z_1,\ldots,z_9$) на 2 множества - $\{z_1,\ldots,z_5\}\cup\{z_6,\ldots,z_9\}$: так как 2 матрицы $A^{+}{}_{54}$, и $B^{+}{}_{44}$ и индикаторы в них смоделированы по значениям реальных и стандартизованных (их дисперсии равны 1) z–переменных. Наши модельные нестандартизованные z–переменные $\{z_1,\ldots,z_5\}$ имеют неравные 1 дисперсии (0.6763, 2.1470, 1.2032, 1.0341, 1.3959), а z–переменные $\{z_6,\ldots,z_9\}$ - (2.1180,1.9094 ,2.0123,2.8370): дисперсии, неравные 1. Для преобразования модельных нестандартизованных z–переменных при наличии модельных индикаторов и не-индикаторов в матрицах $A^{+}{}_{54}$.и $B^{+}{}_{44}$ необходимо увеличить количество m значений изменчивостей ($z_{i1},\ldots,z_{i9}$),i=1,…,m. Мы не рассматриваем решение этой задачи дополнения m строк матрицы $Z^{+}{}_{mn}=[\,Z^{+}{}_{mq}\,|\,Z^{+}{}_{mp}]$ новыми строками.

Визуализация динамик изменения значений 2-х пар «z-изменчивостей» (Рисунок 1, Рисунок 2) наглядно иллюстрирует реальные динамики связанных ТК-показателей.

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DISCUSSION WARNING ON ROAD TRANSPORTATION ACCIDENTS

Abstract: *The author is analyzed the existing opinions of academic theorists on the content of the characteristics and essence of the definition of «counteraction to the investigation of crimes», using the empirical experience of employees of the investigative departments, made an attempt to formulate a definition of this phenomenon that would reflect all forms and content of their manifestation in the context of countering crimes of this category.*

Key words: *counteraction to the investigation of crimes, counteraction to the investigation of an accident, road traffic accidents, countering the investigation, investigative practice.*

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Introduction

We analyzed the existing opinions of academic theorists [8]. [13] [17] [16] on the content of the characteristics and essence of the definition of «counteraction to the investigation of crimes», using the empirical experience of employees of the investigative departments, made an attempt to formulate a definition of this phenomenon that would reflect all forms and content of their manifestation in the context of countering crimes of this category.

Based on the research conducted, the following definition was formulated: «Counteraction to the investigation of an accident is a set of intentional actions aimed at obstructing the investigation of crimes related to the event of an accident, criminal prosecution and justice by interested parties, carried out both in the form of direct action and intentional inaction» ... Based on the presented definition, the author believes that planned, that is, intentional opposition is not a feature of a certain category of crimes, namely, crimes committed by negligence, since there is no preparation stage among the stages of this crime. [15]

At the same time, in the analysis of road traffic accidents, we observe the manifestation of one of the forms of «organization» in countering the investigation. The analysis of 57 studied criminal cases from the archives of the Osh and Jalal-Abad GUVDs clearly shows that in 28 cases, i.e. 50% of resistance to the investigation in various forms was manifested by two or more people. In other words, it was organized and coordinated in purpose and method of manifestation. Following the logic of scientific research, the author analyzes the opposition to the investigation of road accidents based on its components, namely the subjects involved in the opposition to their criminological portrait, motives, and methods used [19].

At the same time, the author identifies a certain category of persons, which can be attributed by the degree of participation or personal interest of the following participants:

1) The driver who drives the vehicle or a certain subject (since it is not the direct driver who may be driving the vehicle during the accident event);

2) The owner of the vehicle;

3) Circle of acquaintances, relatives (indirect interest);

4) Victims or persons who consider themselves as such;

5) Witnesses;

6) Participants in investigative actions.

The author gives possible motivating reasons and features of the subjects of counteraction, based on

the achievement of the goal of the desired result, and notes that they are individual for each subject. For some, it is criminal prosecution and punishment, for others, financial responsibility, fear, remorse or nihilism. [20]

When the author analyzed the investigative practice of investigators specializing in the investigation of road accidents and related crimes, the following were preferred as the main motivating condition determining the choice of methods and methods of counteraction:

1) 57% of the interviewed investigators of the Dzhalal-Abad Internal Affairs Directorate indicated the place and circumstances of the crime;

2) 54% indicated as the reason, the individual characteristics of the behavior of the suspected subject after the commission of the crime event;

3) 72% referred to existing personal relationships with employees of other structural divisions of the Ministry of Internal Affairs;

4) 59% indicated as a natural subjective counteraction the skills of professional criminality, the previously acquired experience of counteracting the investigation;

5) 24% of investigators referred to the peculiarities of the personal behavior of the subject of a crime after its commission;

6) 34% stated about the individual characteristics of the subject of the crime, intelligence, ingenuity, character, health, a tendency to fiction and fantasy.

The author in his research is convinced that the manifestation of various forms of counteraction begins to form and be embodied in the form of real actions even at the stage of the formation of the intent to commit a crime and takes on an increasingly harsh form on the part of the subject of the crime by the time of judicial proceedings.

1) 54% of investigators noted different manifestations of forms of opposition even before the start of the trial;

2) 76%, with the beginning of pre-trial proceedings, note the manifestations of various forms of both internal and external manifestations of opposition;

3) 43% point to the stage of the investigation outside the investigation;

4) 83% when organizing and carrying out activities related to solving a crime;

5) 12% of investigators point to the stage of transferring a criminal case to court proceedings;

6) 72% of the subjects of the investigation pointed to the provision of counteraction, both at the scene of the criminal event and beyond.

As a rule, the main role in the organization of counteraction to the investigation in cases of road traffic crimes is played by the driver of the vehicle that committed the road accident. This subject takes actions aimed at providing all forms of possible influence, both on the material traces of the crime, and on all participants in the investigation process. [22]

In the investigation of road traffic crimes, very specific forms and methods of counteraction inherent only to this crime are clearly visible, to which the author refers:

1) 17% of cases, leaving the scene of the crime;

2) 9% concealment of traces of a crime at the scene until the arrival of a public security inspector or an investigative and operational group.

Most often, this form of counteraction occurs at night and in the evening, with poor lighting and limited visibility conditions, in such a situation the driver guilty of the accident tries to hide the traces of the crime as much as possible, by making changes made by him at the scene or by changing the position of his car and other transport involved in accident.

3) an attempt to make changes to the damage received by the vehicle during the accident, excavation or complete replacement of parts of the supporting body of the car, indicating the presence of damage and the reasons for their receipt, deliberate destruction of the vehicle itself, creating conditions for staging a version of the event that occurred, presented by the driver himself;

4) an attempt to influence the experts and specialists involved in the investigation. This is due to the fact that in most cases the final result of the pre-trial proceedings largely depends on the conclusions and conclusions of an expert, a specialist;

5) maximum obstruction of the investigation by means of a large number of stated demands, petitions, protests, failure to appear for carrying out the investigative actions necessary for the investigation with a vague formulation of the reason for failure to appear. According to the results of the analysis of the investigative practice, it was revealed that 12% of the analyzed materials of criminal cases were completed with the maximum allowable terms for the investigation, 3% of criminal cases exceeded the terms from 3 to 4 months, 7% for more than 7 months, and 2% for more than a year;

6) traditionally, public opinion has developed a feeling of certain pity and sympathy for the perpetrators of the incident, which the perpetrators themselves actively use and try to maintain and, if possible, develop this feeling not only among the investigator, but paradoxically also among the injured party. Quite often there are cases when victims and victims make efforts to mitigate the punishment for the person guilty of an accident, search for reasons that mitigate or justify the consequences of his action, or even to terminate criminal prosecution.

7) in 16% of cases they try to put pressure on the investigation through acquaintances who are law enforcement officers, while 7% influenced the investigation through the traffic police officers (relatives, children, husband, wife), 28% of cases through representatives of expert institutions

(colleagues, relatives relatives, acquaintances of acquaintances), 6% through the courts, the prosecutor's office «telephone law».

All of the above types of counteraction provided during the investigation of an accident ultimately lead to the following consequences affecting the investigation:

1) in 43% of cases from the total number of studied materials of criminal cases,

unreasonable labor intensity and decrease in the efficiency of the investigation;

2) in 37% of cases, unreasonable delay and increase in the time frame for the investigation;

3) 8% multiple suspension of the course of the investigation;

4) 5% termination of criminal prosecution in connection with the reconciliation of the parties.

In the course of his research, the author identified ways of countering the investigation of transport accidents:

1. 24% of cases from the total number of criminal cases analyzed by the author, manifestation of open influence (in the form of threats, blackmail, offers of material reward, patronage) on the participants in the investigation;

2. In 27% of cases from the analyzed criminal cases, the concealment of data relevant to the investigation of the crime event, their sources, as well as the attempt of the subject of the crime to escape from the accident scene, failure to appear for investigative actions, concealment of new data on the crime event;

3. In 1.5% of cases, there are actions associated with the complete or partial destruction of investigative information, or information significant for the investigation. Such actions are carried out by destroying or completely disassembling the transport involved in the accident, replacing parts and mechanisms of the car, destroying traces of blood and brake traces;

4. In 13% of cases, there is a concealment or deliberate distortion of information about a crime event, by changing the situation at the scene, replacing parts and mechanisms of the vehicle for the whole, changing the trajectory of traces of braking or skidding;

5. In 73% of cases, information about the event of an incident is substituted by giving distorted or false data about a crime, falsifying an alibi, rejecting previously given testimony;

6. In 5% of cases, there are attempts of various types of staging, under an accident, an accidental event, in order to conceal another more serious crime, to partially change the constituent elements of a criminal event;

7. In 9% of cases there are cases of simulation of mental and physical disorder, reduction of biological age in order to avoid criminal prosecution by the subject of a criminal event.

The determination of the most effective methods of overcoming opposition to the investigation depends on the professional training and practical experience of the investigator, including on the individual characteristics of the character of the subject of the crime, his typical portrait. [32]

As a rule, the type of the subject of counteraction to the investigation is determined by the detailed forensic characteristic of the event of a road traffic accident and consists of the following characteristic features:

1) 74% men from 19 to 35 years old, 12% women from 20 to 50 years old, all categories of residents Bishkek 34%, Osh region 29%, Jalal-Abad region 18%, 19% other regions of Kyrgyzstan;

2) 58% living in the area of the incident;

3) 4% have no education;

5) 91% with higher or specialized education;

6) 94% have fines or administrative punishment for violation of traffic rules;

7) 86% is the owner of the vehicle.

Analysis of criminal cases of road traffic accidents made it possible to establish a number of typical investigative situations in which most often there is opposition to the investigation in various forms of its manifestation:

1) 47% of the analyzed materials of criminal cases, all the subjects of the road accident did not leave the scene of the accident, the car at the scene of the collision, or one of the subjects of the event of the incident, for whatever reason, is absent, but there is its setting data.

2) 14% of the analyzed materials of criminal cases, the victim, the victim, at the scene, the driver disappeared, there is no setting data about him;

3) 7% of the materials of criminal cases, there is no subject of the road accident, the victim or the victim is the same.

In the course of the analysis of the investigative practice by the author, the following signs of counteraction to the investigation of an accident are highlighted and proposed:

1) a clear discrepancy between the readings and the recorded picture of the incident event:

2) a radical change in the previously given indications by the participants in the event of the incident in the direction of softening the qualifications, actions of the vehicle driver;

3) quick change of registration, sudden internal or external migration;

4) refusal to fix the testimony on audio, video recording;

5) constant change of readings under the pretext of the consequences of an accident;

6) reluctance to be examined, face-to-face, or undergo a forensic medical examination;

7) reference to an unconfirmed alibi (cannot be confirmed or refuted);

8) maximum delay in pre-trial proceedings;

9) requirements for additional investigative actions and repeated examinations; 10) simulation of insanity, illness, mental disorder;

11) reference to the state of passion;

12) an attempt to establish personal relations with an investigator, expert, specialist;

13) an attempt to influence by threats, persuasion, bribery, a witness, an injured party, an injured party;

14) reference to the constitutional provision on refusal to testify;

15) persistent desire to get acquainted with the available base of evidence of his guilt, and the prospects for the investigation;

16) constant unsubstantiated statements on violations of procedural norms of the investigation;

17) a statement on the change or refusal from the testimony previously given during the investigation.

Taking into account the above arguments by the author, the most characteristic signs of opposition at the pre-trial stage of the investigation were highlighted:

1) emotional tension, nervousness, a state of passion among the participants in the accident event at the scene of the accident;

2) attempts to destroy or change the traces of the accident, signs of manipulation of obvious traces of the accident, various types of staging;

3) concealment or misinformation of the circumstances of the incident that are significant for the investigation;

4) influence on the course of the preliminary investigation. By way of unsubstantiated comments, suggestions, recommendations;

5) unjustified transfer of the investigation materials to another unit;

6) unfounded doubts about the conclusions and conclusions of an expert, specialist, appointment of unfounded forensic examinations.

The author proceeds from the assumption that activities to identify, overcome and prevent opposition are carried out at the stage of preliminary investigation in criminal cases, both by the investigator and by operational workers. [28] Accordingly, the methods of detecting, overcoming and preventing counteraction to the investigation of road traffic crimes are investigative actions, organizational and operational-search measures. Of particular importance is the proper staffing of the investigation process and, above all, the high-quality level of preparedness of persons carrying out preliminary investigation of road traffic crimes. [19] More than half of the investigators have less than five years of experience in investigating road traffic crimes. There is a need to provide specialized training for investigators involved in the investigation of road traffic crimes.

The activity to identify counteraction is associated with the presence of a large number of objective and subjective factors that determine both the formation of the counteraction plan and the very process of disclosing and investigating road traffic crimes, and was aimed at establishing its signs and effective use of information about them in further activities to investigate crimes. [14]

The author proposes the developed forensic methods of detecting opposition to the investigation. An important and effective method of identifying and suppressing various forms of counteraction to the investigation of road accidents is the use of the capabilities of the operational investigation team. The practice of the investigation shows that in 12% of cases, opposition to the investigation was identified and suppressed by preventive operational measures.

The author considers the following forensic and at the same time procedural methods of identifying opposition:

1) 54% of criminal cases and 82% of interviewed employees consider the appointment and conduct of examinations;

2) 59% of criminal cases and 87% of interviewed employees include interrogation of witnesses;

3) 49% of criminal cases and 37% of interviewed employees indicate interrogations of drivers - subjects of opposition;

4) 41% of criminal cases and 77% of interviewed employees include interrogation of victims;

5) 18% of criminal cases and 47% of interviewed employees consider examinations of traces of objects and other material evidence;

6) 12% of criminal cases and 69% of interviewed employees, inspection of the scene;

7) 9% of criminal cases and 76% of interviewed employees indicate an investigative experiment;

8) 7% of criminal cases and 23% of interviewed employees mention confrontation.

Based on the results of his research, the author proposed the methods formulated by him to overcome the counteraction to the investigation of road traffic crimes, based on the principles of prevention and prevention of various forms of counteraction:

1) Using the possibilities of «special investigative actions» provided by the norms of the Criminal Procedure Code to suppress manifestations of opposition to the investigation carried out by interested parties to the participants in the investigation of the crime;

2) the use of the forces, means and methods of the independent reconnaissance patrol in the daily official activities of the employees of operational units not burdened by procedural norms for, prevention and prevention of opposition to the investigation;

3) obstruction of the manifestations of the activities of the participants in the counteraction, undertaken by them to conceal or seize evidence that is significant for the investigation;

4) fixing the manifestations of opposition to the investigation for criminal assessment and qualification, with possible criminal prosecution;

5) rehabilitation activities of law enforcement agencies to eliminate the consequences of counteracting the investigation, manifested in the application of pressure or coercion against the investigator, victims, injured persons, eyewitnesses, witnesses.

In conclusion of the topic under study, the author draws attention to the following that the meaningful concept of the definition of «overcoming opposition to the investigation» implies, first of all, overcoming the opposition itself as an objective event, and eliminating the consequences arising from the manifestation of opposition, both on the part of interested parties and parties of subjects interested in a specific result of the outcome of a criminal case.

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PROSPECTS FOR GOVERNMENT REFORM IN UZBEKISTAN

Abstract: *The author presents in this article the prospects for the formation of a multi-layered system of government in the Republic of Uzbekistan on the basis of public power. The concept of establishing a constitutional body performing the functions of the Constitutional Council of the Republic of Uzbekistan.*

Key words: *sovereignty, state governance, state sovereignty, state power, integration, lobby groups, constitutional control.*

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Introduction

Prospects for the formation of a multi-layered system of government in the Republic of Uzbekistan on the basis of public power. If we analyze the form of government of many countries in the world, the countries with the form of constitutional monarchy, including the United Kingdom, the Netherlands, Belgium, Spain, Sweden, Denmark, Norway in Europe; Japan and Thailand in Asia, monarchical power is officially nominal, but in fact monarchical power is dormant. When the political situation in the country is in jeopardy, when the territorial integrity and sovereignty of the state are threatened, the monarch's dormant powers come into play. In maintaining the sovereignty and independence of state power in the above countries, the power of the monarch emerges as a reserve political force. While the establishment of sovereignty in history has served the interests of the entire monarchy and ensured its independence from the holy church, the monarchy has not lost its potential in the past.

In modern monarchies, the real power of a monarch is determined not by his position in state power, but by the fact that his power has become a sacred value, interpreted as a symbol of the nation and state, and an expression of the solidarity of the people. In the United Kingdom, for example, the monarch's authority includes the Secret Council of the Queen (King) and three other councils. They, in turn, play an important role in determining the country's policy.

Such a multi-layered form of government allows for the balance of political power in the country, greater protection from external aggression, and the realization of democratic values. Such states have maintained their independence and sovereignty for centuries.

In the United States, France, Germany, Brazil, Italy, and a number of other republics, parliamentary oversight mechanisms are widely used to balance the country's political forces. In particular, the US Congress has the power to impeach the President. An in-depth analysis of the scope of parliamentary powers reveals that one of the mechanisms for exercising these powers is the influence of formal “lobby groups”. We know that such "lobby groups" are based on individuals and groups belonging to the largest property class in the country (for example, the Rockefellers, the Duponts and the Baruchs in the United States, the Rothschilds, the Barons and the Mochetti in Europe). There is no denying the place and role of such individuals and groups in the political life of the country and their influence in the policy-making of the state.

Based on the experience of foreign countries over the centuries, it is important to reconsider the means and methods of protecting Uzbekistan in order to build a strong state power. In particular, the

introduction of multi-level state power in the country can play an important role in ensuring state sovereignty. Establishment of multi-level state power in Uzbekistan:

Firstly, it serves as an important factor in protecting the sovereignty of the state from external aggression;

Secondly, it provides for the restraint and co-operation of governments;

Thirdly, it does not allow for the maintenance of a democratic regime in the administration of the state and the establishment of a totalitarian or authoritarian regime based on individual power;

Fourthly, it ensures the sustainable economic and social development of the country.

What are the internal possibilities and characteristics of the organization of multi-level state power in Uzbekistan? This can be done in Uzbekistan by strengthening the horizontal relationship of state power, decentralization of public administration, radical reform of the system of local government, the transfer of functions of state power to citizens' self-government bodies.

The specifics of multi-level state power in Uzbekistan are:

1. That it is part of a single state government (not a parallel government).

2. Multi-level state power in Uzbekistan is organized at all levels of the administrative-territorial structure (regions, districts, villages and auls).

3. Drowsiness (passivity) of the powers of public power (second tier).

4. Include public authorities (public organizations).

5. Mutual restraint of power and balance of interests.

6. Priority of control activities in public administration.

7. Establishment of the Constitutional Council (on the basis of the Constitutional Court) in the system of public authorities.

"It should be noted that the multi-layered structure of the mechanisms for ensuring the interests of the state is reflected in the functioning of relatively independent organizational and legal mechanisms of each branch of government. These internal mechanisms, which express their essence, social purpose and legal content, belong to the legislative, executive and judicial branches."[1]

The concept of establishing a constitutional body performing the functions of the Constitutional Council of the Republic of Uzbekistan. Since ancient times, states have undergone a great deal of experimentation and reform to ensure the continuity and permanence of power, and to preserve existing governing values (in modern parlance, sovereignty).

In ancient Athens in the V-IV centuries BC there was a procedure of appeal against the unjust law - grafe paranomon (from the Greek grapho - I write, paranomos - illegal, unjust). From the 1180s onwards, the Holy Roman Empire introduced mechanisms for the consideration of constitutional appeals by the German people, elements of constitutional control emerged in France in the mid-13th century[2], and in Portugal in 1602 the Philipe Code introduced constitutional appeals.

The British Privy Council, acting as the last appellate court, argued that constitutional oversight dates back to the early 17th century, when the British Parliament had the right to repeal laws passed for the colonies or "inconsistent" norms that did not conform to British general law.[3]

Of course, the "graffiti paranomon" procedure in ancient Athens and the British "Secret Council" of the period of absolutism, which we have considered, do not fully and completely reflect the usual mechanisms of constitutional control of our time, but only show similarities. But it is not important for us, the important thing is that the above historical examples show that if a political system emerges in a country that gives fundamental and priority to some kind of legal norms, then the state and society need institutions and procedures to ensure the stability and priority of these norms."[4]

In the Russian Empire, Catherine I established the Secret Council on February 8, 1726.

The Secret Council was a body with general legislative and executive functions. Due to its small size, it is able to quickly resolve state affairs in relation to the Senate, and the activity of this body can only be positively assessed in the development of Russian statehood.[5]

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[1] *Иванов В.П.* Институты государственной власти в юридическом механизме формирования и реализации государственных интересов// https://superinf.ru/view_helpstud.php?id=5313

[2] *Мавчич А.* Конституционные суды: модели работы в соответствии с федеральными государственными системами // Сб. материалов международной научн.–практ. конф. конституционных судов России, Германии, Словении. – Петрозаводск, 1998. – С. 6. 6. *Меланченко И.В.* Афинская демократия: устройство и политический режим классических Афин в правовых, исторических и социологических терминах. – М.: Крафт+, 2007. – С. 90-91.

[3] *Петренко Д.С.* Элементы конституционного контроля в «неписанных» конституциях государств докапиталистического периода истории. Вестник Международного института экономики и права., 2013. –№3 (12), – С.117.

[4] *Петренко Д.С.* Элементы конституционного контроля в «неписанных» конституциях государств докапиталистического периода истории. Вестник Международного института экономики и права. – 2013. – №3 (12), – С.119-121.

[5] *Рассказов Л.П., Жиленко А.С.* Политико-правовая роль Верховного тайного совета в развитии российской государственности в годы правления Екатерины I и Петра II // Юрист-правоведь., 2014. – №1 (62), – С.16.

Amir Temur wrote in his treatise: "Pirim (Zayniddin Tayabodiy) wrote to me: Abulmansur Temur, do four things in the affairs of the kingdom, namely: 1) the council (with you); 2) consult with (others); 3) make a firm decision with vigilance and prudence; 4) be careful. For without consultation and consultation the kingdom can be compared to an ignorant person whose actions and words are wrong; let his words and deeds bring remorse to his head. Therefore, in the management of the kingdom, follow the advice and measures so that you do not regret it in the end."[6]

In modern republics, the Constitutional Councils act as the body performing the above functions. Constitutional councils differ from constitutional courts in the scope of their activities. The Constitutional Councils are characterized by an effective mechanism for balancing state power and preventing the usurpation of power by other subjects of state power.

I.Yu.Ostapovich from Kazakhstan also supported the opinion of B.Nurjanova and said that the Constitutional Council is the most optimal body in ensuring the constitutional legitimacy in the form of government of the presidential republic.[7] However, the Constitutional Council does not have full control over the government that established it.[8] Perhaps it will coordinate the authorities in the country.

The activities of such structures as the Constitutional Council can be considered in the case of France. The French Constitutional Council[9] oversees the fairness of the presidential election. Considers complaints about election results and announces voting results. In the event of a dispute over the election of deputies and senators, the Constitutional Council shall decide whether the election was fair or not. The Constitutional Council oversees all referendum activities. All organic laws are submitted to the Constitutional Council for verification of their constitutionality before they are promulgated, and initial constitutional review is carried out.

The Constitutional Council of the Republic of Kazakhstan[10] also reviews disputes over the election of the President, the election of deputies and the referendum, the constitutionality of international treaties adopted by the President before the signing of laws, decisions and ratification by parliament and its chambers. One of the important powers of the Constitutional Council is to conclude that the Constitutional procedures have been followed until the Parliament makes a final decision on the early dismissal of the President of the Republic.

According to the world experience, the Constitutional Council should work in such a way that, as F.Lushar[11] acknowledges, the supremacy of constitutional values should be ensured in the relationship between constitutional values and constitutional principles.

In the future, the establishment of a body in the form of the Constitutional Council on the basis of the Constitutional Court of the Republic of Uzbekistan in Uzbekistan will be a big step in ensuring state sovereignty.

The functions of the Constitutional Council of the Republic of Uzbekistan should include:

Determining the constitutionality of draft laws of the Republic of Uzbekistan and draft resolutions of the chambers of the Oliy Majlis of the Republic of Uzbekistan;

To determine the constitutionality of decrees, resolutions and orders of the President of the Republic of Uzbekistan, decisions of the government, local authorities, interstate treaties and other obligations of the Republic of Uzbekistan and suspend their implementation in violation of the Constitution of the Republic of Uzbekistan;

To receive conclusions from the Public Chamber of the Republic of Uzbekistan on monitoring the results of public control in the Republic of Uzbekistan;

Interpretation of the Constitution and laws of the Republic of Uzbekistan;

The Constitutional Council of the Republic of Uzbekistan shall act as a temporary body to fill the gap in state power in the event of the simultaneous resignation of the President of the Republic of Uzbekistan and the dissolution of the chambers of the Oliy Majlis of the Republic of Uzbekistan (in which case the government resigns).

The Constitutional Council of the Republic of Uzbekistan should consist of at least nine members, but not more than fifteen. The following persons may be members of the Constitutional Council of the Republic of Uzbekistan:

State and public figures who have rendered great services to the people of the Republic of Uzbekistan and the country for many years;

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[6] *Амир Темур* тузуклари // (http://www.temurtuzuklari.uz/uz/clause/1).

[7] *Остапович И. Ю.* Образование Конституционного Совета Республики Казахстан, его конституционно-правовые основы / Вестник Томского государственного университе, 2010. – С.122. *Нуржанова Б.* Источник правовой политики // Юридическая газета., 2005. 14 июня.

[8] *Camby J.-P.* Supra-constitutionnalité: la fin d'un mythe // Revue du droit public et de la science politique en France et à l'étranger. – P., 2003. – Vol. 119. – N 3. – P. 671–688.

[9] Конституция Республики Франции (статьи 59,60,61) / (https://www.conseil-constitutionnel.fr/sites/default/files/as/root/bank_mm/constitution/constitution_russe_version_aout2009.pdf).

[10] Конституционный закон «О Конституционном Совете Республики Казахстан» от 29 декабря 1995 года – № 2737 // (https://online.zakon.kz/document/?doc_id=1004022#pos=2;-155).

[11] *Luchaire F.* Brèves remarques sur une creation du Conseil constitutionnel: L'objectif de valeur constitutionnelle // Rev. française de droit constitutionnel. – P., 2005. – N 64. – P. 675–684.

Ex-President of the Republic of Uzbekistan as a lifetime;

Chairman of the Supreme Council of Judges of the Republic of Uzbekistan;

Judges with at least three senior legal and political practices and experience;

On the position of the Chairman of the Central Election Commission of the Republic of Uzbekistan;

Chairman of the Public Chamber of the Republic of Uzbekistan.

The dissolution and dissolution of the Constitutional Council of the Republic of Uzbekistan shall be prohibited.

According to the French professor J.P. Cambi, any constitution should be free from the prohibition of amending it.[12]

The judiciary occupies a non-politicized, neutral position in the system of state power. The judiciary never claims to set public policy and govern the country. However, if we look at the history, it is an important body that temporarily fills the gaps in the power of the state during the socio-political crisis in the country and brings the country back from the brink. An example of this is the recent Arab Spring events in which the President of the Constitutional Court of the Arab Republic of Egypt temporarily ruled the country.

The legal literature also links the judiciary to the content of sovereignty. According to Rene David of France, a world-leading expert in the field of comparative law, the principle of electing judges was already enshrined in the Communist Party's program in 1903 because of its democratic nature. In practice, in countries where people's sovereignty is respected, the election of judges is considered natural. Democracy requires not only the rule of law, but also the entrustment of the rule of law to the people.[13] In our opinion, in the current market economy, it is not right to support the principle of popular election of judges. In a society based on different forms of ownership, the harmonization of the judiciary with the representative power and the performance of its representative function contradicts the essence of the principles of justice and impartiality.

The Uzbek legislation enshrines several forms of judicial power: the judiciary, in addition to administering justice, also deals with the constitutionality of acts of the legislature and the executive (the Constitutional Court of the Republic of Uzbekistan). The judiciary also plays a balancing role in the system of state power. According to Article 95 of the Constitution of the Republic of Uzbekistan: The Legislative Chamber and the Senate of the Oliy Majlis of the Republic of Uzbekistan may be dissolved on the basis of a decision of the President of the Republic of Uzbekistan in consultation with the Constitutional Court of the Republic of Uzbekistan in the event of unresolved disputes threatening its normal functioning.[14]

Article 4 of the Constitutional Law of the Republic of Uzbekistan "On the Constitutional Court of the Republic of Uzbekistan"[15] of May 31, 2017 adopted in the new edition includes the powers of the Constitutional Court: determination of the constitutionality of decisions of public authorities, interstate treaties and other obligations of the Republic of Uzbekistan in the Constitution of the Republic of Uzbekistan; It is also planned to determine the compliance of the constitutional laws of the Republic of Uzbekistan, the laws of the Republic of Uzbekistan on ratification of international treaties of the Republic of Uzbekistan with the Constitution of the Republic of Uzbekistan before signing by the President of the Republic of Uzbekistan.

According to the law, the Constitutional Court is empowered to simultaneously review the laws that have entered into force, as well as draft constitutional laws, in accordance with the Constitution of the Republic of Uzbekistan. In the above-mentioned and in many other countries (mainly in countries close to the French legal system: Algeria, Senegal, Morocco, Lebanon, Cambodia, Sri Lanka, Tunisia, Ethiopia) the constitutional review of bills is carried out by the Constitutional Council, not the Constitutional Court. Constitutional review of laws that have entered into force in most countries is exercised by the Constitutional Courts.

In order to further expand the powers of the Constitutional Court of the Republic of Uzbekistan and increase its role in ensuring state sovereignty, it is expedient to transform this body into the Constitutional Council by reforming the institution of constitutional control in the Republic of Uzbekistan as well.

Establishment of the Constitutional Council in Uzbekistan:

Firstly, it allows for the verification of draft laws in accordance with the Constitution in the legislative process. This will allow all adopted laws to be subject to constitutional review at the draft stage;

Secondly, there are some powers that balance the power of the state, and there is a need to verify the

[12] *Camby J.-P.* Supra-constitutionnalité: la fin d'un mythe // Revue du droit public et de la science politique en France et à l'étranger. – P., 2003. – Vol. 119. – N 3. – P. 671–688.

[13] *Давид Р., Жоффре-Спиноси К.* Основные правовые системы современности: Пер. с фр. В.А.Туманов. – М.: Междунар.отношения, 1997. – С.172.

[14] ЎзбекистонРеспубликасиКонституцияси. – Т.:Ўзбекистон, 2018. – Б. 50.

[15] Ўзбекистон Республикасининг "Ўзбекистон Республикасининг Конституциявий суди тўғрисида"ги Конституциявий конуни // Ўзбекистон Республикаси қонун ҳужжатлари тўплами, 2017. – №22. – 407-модда, – №37. – 978-модда.

validity of the results of the Oliy Majlis and presidential elections;

Thirdly, not only judges, but also prominent statesmen and public figures of the country will be elected to the Constitutional Council;

Fourthly, it would be appropriate for ex-presidents to be members of the Council for life;

Fifthly, we will create another democratic institution of communication with the people by establishing a Public Chamber under the Council, which will ensure the rights and freedoms and other interests of citizens.

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TURKIC LOANWORDS IN THE PERSIAN LANGUAGE AND THEIR LEXICAL-SEMANTIC GROUPS

Abstract: *The article is about Turkic loanwords in Persian and their subject groups, in which Turkic loanwords are selected as the object of research. The article briefly analyses the factors of borrowing of Turkic lexical units and their lexical-semantic groups. The ideas and conclusions in the article are based on lexical units collected from the sources and are classified into 7 groups.*

Key words: *loanword, borrowing, lexical-semantic group, adaptation, historical words, lexical units.*

Language: *English*

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Introduction

No one language in the world is made up of its own words. Due to economic, cultural, political, and scientific ties, the world's languages communicate with each other. It is constantly updated, and unnecessary and redundant words, phrases and terms disappear from the lexical structure of the language over time. They are replaced by internal resources or word acquisition from other languages. Languages and dialects normally do not exist in a vacuum. They or more accurately, their speakers always have some contact with other languages or dialects. The degree of contact may vary considerably. It may involve the whole range of language use, from informal, spoken to highly formal, written; or it may remain confined to just one level of use, such as written discourse [1, p.223]. Lexical units derived from another language are called "loanwords" and through them we become aware of the stages of development of the language, its relationship with other languages, and changes in it. Loanwords are words adapted by the speakers of one language from a different language (the source language). A loanword can also be called a borrowing. Often, there is an asymmetry between the two languages, such that more words go from one side to the other. [2, p.59].

Haugen defines linguistic borrowing as "the attempt reproduction in one language of patterns previously found in another". This definition implies that, besides single lexical terms, borrowing may even concern phrases or patterns [3, p.212].

Internal resources are an important source of enrichment of the Persian language. However, this language also has different loanwords, which is directly related to the long-standing relations of Persian with other languages. In Persian, the term of appropriate is usually given by words and phrases such as واژه *vāje*, واژه وام *vāmvāje* or واژه های قرضی *vajehā-ye yarzi*. Russian scientists L.S. Peysikov divides the appropriate words in Persian language into three chronological periods [4, p. 30- p. 56]:

1. Pre-islamic. The loanwords of this period mainly adopted lexical units from the ancient Greek (الماس *ālmās* "diamond", زمرد *zommorod* "emerald", لگن *lagan* "chamber pot", پیاله *piyāle* "cup", کلید *kelid* "key", لنگر *langar* "anchor", یاقوت *yāyut* "ruby", دینار *dinar* "dinor"), Latin (قندیل *yandil* "candle", غربال *yarbāl* "sieve", ساقور *sāyur* "ax"), Aramaic and Indian (تابوت *tābut* "coffin", گور *gur* "tomb", گنبد *gombad* "dome", چاپ *čāp* "print, شنبه *šambe* "saturday", ببر *babr* "tiger", جنگال *jangāl* "forest", فلفل *felfel* "pepper", قرمز *yermez* "red"), Ethiopian (منبر *mambar* "pulpit", حواری *havāri* "apostle") and Chinese (چای *čāy* "tea").

2. Post-Islamic and from the Middle Ages to the Middle of the Nineteenth Century. During this period, Arabic (کتاب *ketāb* "book", شعر *šer* "poetry", تصویر *tavir* "image", لغت *loγat* "vocabulary") and Turkic (اردک *ordak* "duck", قیچی *γeyči* "scissor", دگمه *dogme* "button", اتاق *otāγ* "room") adopted words enter to Persian.

3. Borrowing of New Age. During this period, there was a tendency for lexical units from European languages to enter Persian (پارلمان *pārlemān* "parliament", بانك *bānk* "bank", کاپ *kāp* "cup", جك *jak* "jack", بلیط *belit* "ticket", پاکت *pāket* "pocket").

If we pay attention to the above chronology, we can see that Persian loanwords come from different languages and, most interestingly, these languages belong to morphological, syntactically, phonetically, orthographically different language families. However, all of these loanwords are subject to the internal rules of the Persian language.

The main part.

Turkic lexical units, which are a small part of the Persian language layer, are one such language, second only to Arabic and European languages in terms of quantity and usage. The borrowing of the Turkic loanwords into the Persian language took place in different periods and conditions. This is, first of all, the result of the relations between the Iranian and Turkic peoples in various fields. In about the ninth and tenth centuries, the number of Turkic lexical units in the Persian language was very small. Some scientist say it is more than a thousand. Iraj Bashiri: Among the Eastern languages second place goes to Turkish with about 1600, followed by Mongolian with about 400 loanwords. These words deal, in the main, with traditional civil military administration [5, p. 110].

L.S. Peysikov according to, Firdavsi's "Shahnameh" contains several Turkic word (تگین *tagin* "hero", بوق *buγ* "horn") and many anthroponyms. He also mentioned in Asadi Tusi's Lughat-e Furs that some Turkish words related to everyday life were and other words (یرنداق *yarandoγ* "hide skin", چارق *čāroγ* "type of shoe", قلپه *γalpa* "magpie") [4, p.46- p.47].

It is well known that the process of borrowing can also take place through communication languages. In this case, the lexical units of one language is borrowed into one language by another language. This is the case with some of the Turkic loanwords of Persian. For example, the word تلمبه *tolombe* "pump" is derived from the Italian word *tromba*, but the word is not directly borrowed from Italian into Persian. It was first borrowed into Turkish as tulumba and later into Persian [6, p.2251]. The word گمرك *gomrok* "customs" is also derived from the Greek word *kunerki* [6, p.906].

Turkic loanwords in Persian consist mainly of words related to trade, administrative structure, household, military, commerce, agriculture, small handicrafts.

In this small study, six lexical-semantic groups (LSG) were identified. These examples are collected from a variety of fiction books, newspapers and magazines, dictionaries, Internet resources, and other sources published in Persian from the twentieth century to the present day. They are as follows:

1. **Animals and Plants LSG**. تکه *take* "goat", قاطر *γāter* "*mule*", قورباغه *γurbāγe* "frog", قرقی *γerγi* "sparrowhawk", قوچ *γuč* "ram", قرقاول *γerγāvol* "pheasant", اردک *ordak* "duck", توتون *tutun* "tobacco", الاغ *olāγ* "donkey", بلدرچین *belderčin* "quail".

2. **Food LSG**. قیماق *γeymāγ* "cream", قرمه *γorme* "fricasse", دلمه *dolme* "curd", پنیر *panir* "cheese", آذوقه *āzuγe* "food", قیمه *γeyme* "mince", قاتق *γāteγ* "yogurt", دیشلمه *dišlame* "tea with sugar"

3. **Household LSG.** اجاق *ojāγ* "fireplace", سنجاق *sanjāγ* "pin", قاشق *γāšoγ* "spoon", قابلمه *γāblame* "pot", soucepan, بشقاب *bošγāb* "plate", قمچی *γamči* "horsewhip", قاب *γāb* "frame", قوطی *γuti* "can", "box", قیچی *γeyči* "scrissor", دگمه *dogme* "button", اتاق *otāγ* "room", چکمه *čakme* "brogan", یقه *yaγe* "collar". There are a large number of Turkic borrowings in the Persian lexicon [4, p.48].

It is known that an important feature of Turkish words is that they are found in almost all Turkic languages. In other words, the most relevant and vital words that form the basis of the ancient Turkic lexicon are common to the lexicon of all Turkic languages.

The fact that Turkic words exist in a number of languages of Turkic nations and have been used in this language for centuries, and still exist today, creates a common vocabulary in the lexicon of Turkic languages. For example, many Turkic words such as *iš* "work", *bāš* "head", *kol* "lake", *koz* "eye", *kun* "day" are Kazakh, Kyrgyz, Karakalpak, Uyghur, Tatar, Azerbaijani, and Turkmen can also be found in the languages [7, p.65].

Most of the words from the Turkic languages in Persian are found in the dictionaries of most Turkic languages in parallel. However, there are words that can be found in some Turkic languages. For example, the word of بشقاب *bošγāb* in Persian is not found in Turkish dictionaries, but in Azerbaijani there is *boşqab* that means "plate" in the same way as in Persian. On the contrary, the تلمبه *tolombe* is found only in Turkish dictionaries.

However, it is not possible to say exactly from which Turkic language all Turkic borrowings in Persian came, because, as mentioned above, the generality and similarity of the lexicon of Turkic languages often do not allow this. Most of the everyday words from the Turkic languages have retained their meanings.

4. **Words denoting quality, character, action, and status LSG**. قراء، قره *γarā, γare* "black", دیلاق *deylāγ* "thin" (human), کوچک *kuček* "small", چاق *čāγ* "heavy", سوگلی *sugoli* "favorite", آق *āγ* "white", قزل *γezel* "red", یواش *yavāš* "slowly ", دنج *denj* "cozy", قاق

γāγ "dry", شلوغ *šoluγ* "messy", "noisy ", چابک *čābok* "agile".

The words in this group are mainly adjectives and adverbs, which are signs, adjectives, and adverbs. However, the scope of most of these Turkic loanwords is limited. They are added only to certain words or syntactic combinations. For example, the word قره *γara* "black" can be found in some suffixes or compound words, such as اسب قره *asb-e qara* "black horse", and in other cases the Persian words سیاه *siyāh* or مشکی *meški* more applicable. The word آق *āγ* "white" can also be found in conjunctions such as آقپر *āγpar* "tea", آق شام *āγšām* "evening" or in phraseological combinations such as آقش گرفت *āγaš gereft* "he is nauseous".The color "white" in Persian is usually used with the word سفید *sefid*. In this study, the words قزل, قره, آق, which come from the Turkic languages to mean color, were found more often in the names of animal and plant species, in local toponyms, and in the names of various objects. These words are usually a component of compound words or adjectives in izafe. For example: آق گل *āγgel* (place name), قزل ماهی *māhi-ye γezel* (fish type), قره نی *γaranay* "clarinet" (musical instrument).

5. **Socio-political and military spheres**. توپ *tup* "ball", تپانچه *tapānče* "pistol", تفنگ *tofang* "gun", کشیک *kešik* "watch", اردو *ordu* "camp", "army", بیرق *beyraγ* "flag", گمرک *gomrok* "customs", فشنگ *fešang* "cartridge", قاچاق *γāčāγ* "contraband", قاچاقچی *γāčāγči* "smuggler".

Socio-political and military issues, as mentioned earlier, are directly related to the reign of the Turkic dynasties, and military terms are more among them. For example, the Danish traveller Carsten Niebur notes that during his voyage across the Gulf in 1760, he encountered many Turkish words among the Persian military terms [8, p.193]. In the 1930s, by a special decree of Riza Shah, a number of military terms were replaced by the Persian version. For example, the word ساخلو sāxlov "garrison" is changed to the word پادگان *pādegān*, the word بالابانچی *balabānči* "drummer" is changed to the Arabic-Persian hybrid طبلزن *tablzan*, the word قشون *γošun* "army" is changed to the word ارتش *arteš*. The word قاراول *γārāvul* was replaced by the Persian word نگهبان *negahbān* instead of "guard". The word قور *γur* "weapon" was changed by the Arabic word اسلحه *aslahe*. یوزباشی *yuzbāši* "hundred", تپوز *topuz* "pin" have become archaic due to the development of military technology and military affairs [4, p.48].

6. **Geographical and toponymal names**. باطلاق *bātlāγ* "swamp", ییلاق *yeylāγ* "village", "country house", تپه *tape* "apex",الکا *olkā* "country", بغاز *boyāz* "land", داغ *dāγ* "rock'", قزل اوزن *γezel uzan* (Zendjons river), تشلاق *tašlāγ* (Kurdish river), آق قایا (North Iran rock), آق داغ *āγdāγ* (Ardabils land) قره سو *γarasu* (river name), قره قشلاق *γaraγešlāγ* "village name", چول *čul* "desert". In the Turkic loanwords include geographical terms and local toponymal names. We can still see that some mountains, rivers, caves, towns and villages in Iran have been named Turkic words. Words that refer to geographical place names from the Turkic languages in Persian are terminological lexicons, and we see similarities in the meanings of these words in Persian and Turkish.

7. **Words of appeal and respect LSG**. آقا *āγā* "Mister", آبجی *ābji* "sister", "mother", خانم *xānom* "Mrs", خان *xān* "lord", بیک *beyk* "lord", داداش *dādāš* "brother", بیبی *bibi* "aunt", کاکا *kākā* "brother", خاتون *xātun* "Mrs", "noble woman", باجی *bāji* "sister". Although there are not many words on this topic, some of them are widely used. For example, Iranians still use the words آقا and خانم every day.

Conclusion.

In conclusion, the Turkic loanwords in Persian have a long history. In particular, from the 16th century onwards, the influx of this type of adopted into the Persian language increased dramatically. There are specific reasons and factors for their entry into the Persian language. Turkic loanwords are primarily the result of the common political, economic, social and cultural ties between the Persian and Turkic native speakers. In this small study, 7 LSG were classified from sources published in Persian and examples were given for each topic.

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