

INDUSTRIAL MANAGEMENT SYSTEM IN RUSSIA: HISTORICAL AND COMPARATIVE ANALYSIS

SISTEMA DE GESTÃO INDUSTRIAL NA RÚSSIA: ANÁLISE HISTÓRICA E COMPARATIVA

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Resumo. Atualmente, o mundo está numa fase de turbulência política e econômica. Neste contexto, a Federação Russa encontra-se nas garras de condições alteradas. Particularmente, torna-se óbvio que o modelo econômico do país tem de ser mudado. Os métodos de abstração da situação atual e de análise aprofundada das reformas de mercado historicamente implementadas na Rússia permitem-nos concluir que essas reformas resolveram problemas de curto prazo e se concentraram apenas em determinadas áreas da economia. O estudo da evolução e modernização das instituições e mecanismos do sistema de gestão da indústria socialista permitir-nos-á compreender as razões por trás do crescimento e colapso da máquina econômica soviética. A metodologia do estudo baseia-se na análise da natureza sistêmica e cíclica do desenvolvimento das instituições sociais, políticas e, principalmente, econômicas; o estudo é conduzido de acordo com os princípios, métodos e ferramentas do conhecimento científico. Considerando os resultados, pode-se concluir que tanto o modelo econômico soviético como o russo tiveram os seus pontos fortes e fracos. O inquérito sociológico realizado, aliado à análise da literatura científica e de dados estatísticos, permitiu formar uma avaliação das vantagens e desvantagens dos diferentes modelos econômicos.

Palavras-chave: sistema de gestão, economia, indústria, modelo econômico, literatura científica.

Abstract. Currently, the world is in the phase of political and economic turbulence. In this connection, the Russian Federation finds itself in the grip of altered conditions. Particularly, it becomes obvious that the economic model of the country has to be changed. The methods of abstracting from the current situation and thoroughly analyzing the market reforms historically implemented in Russia allow us to conclude that those reforms solved short-term problems and focused only on certain areas of the economy. The study of the evolution and modernization of institutions and mechanisms of socialist industry management system will allow us to understand the reasons behind the growth and collapse of the Soviet economic machine. The methodology of the study is based on the analysis of systemic and cyclical nature of the development of social, political and, importantly, economic institutions; the study is conducted according to the principles, methods and tools of scientific knowledge. Considering the results, it can be concluded that both the Soviet and Russian economic models had their strengths and weaknesses. The conducted sociological survey in combination with the analysis of scientific literature and statistical data allowed to form a rating of the advantages and disadvantages of different economic models.

Keywords: Management System, Economy, Industry, Economic Model, Scientific Literature.

INTRODUCTION

Presently, the economy of Russia is going through a rather complex and contradictory stage. The command economy developed into a market economy under the worst scenario. In other words, the transformation did not bring the expected social and economic benefits inside the country. Moreover, the international prestige of the state was affected negatively (Gabdulkhakov et al., 2021).

It would be impossible to understand the reasons behind the problems and contradictions encountered without a comprehensive analysis of the processes and phenomena that took place in the country throughout the twentieth century, largely those related to the evolution or modernization of the industry. At a certain stage of the development of statehood, industry started serving as an engine for the growth of the national economy, but later on this mechanism became unable to compete with the industries of the countries that had entered the era of scientific and technological progress (Yemelyanov et al., 2018 a, b, 2020; Vertakova et al., 2019; Dudukalov et al., 2022; Golovina et al., 2022).



It is important to note that the management system of domestic industry served as one of the factors that affected the specifics of the Soviet economic structure and influenced the further course of the state development. The overall efficiency of industrial processes depended on the quality of management in many respects. In this regard, currently it is of high importance for historical science to provide answers to the questions related to the essence of the organizational unity of the economy with the management system as a part of it (Pogosyan, 2021; Shurygin et al., 2021; Panova et al., 2021). The questions related to the formation and evolution of this institution as well as the disclosure of its distinctive features, functions of the whole mechanism at particular stages of its development influenced by both external and internal political, social, economic and other factors should be answered with historical and economic comprehension.

LITERATURE REVIEW

We can distinguish Soviet and post-Soviet stages when characterizing the historiographic works on the functioning of the industrial management system. The division into two stages is associated with completely contradictory assessments of the processes taking place in the USSR industrial management system. Thus, the works of the Soviet researchers were based on the Marxist methodology, but the modern Russian historians started to rely on the concepts of market economy.

The October revolution of 1917 demonstrated the importance of questions dedicated to formation of mechanisms, instruments and institutions of economic management in Soviet Russia. The ideas such as creating new organizational units taking charge of industrial management as well as the transformation of the so-called councils of national economy into bodies independent of the capital were discussed in the first post-revolutionary articles. These bodies were supposed to manage the entire economic life of individual districts as well as the entire republics. Such institutions were recommended to be called "economic sovnarkoms" (Yemelyanov et al., 2020). During this period, two camps emerged inside of the party: supporters of decentralized management of industry with a coordinating role of the central apparatus on the one hand and supporters of centralized management on the other. In the press, a debate broke out between Lenin's supporters and the so-called "Left Communists" led by N.I. Bukharin.

The literature of the 1920s can be characterized with almost complete absence of works containing a comparative analysis with the previous period of the management system development. This can be explained by the emergence of a new statehood and the use of other mechanisms of its management. The majority of the published literature sought to legitimize the new system and to prove the necessity and importance of measures taken in the field of industry.

Special studies devoted to the management and restructuring of industry appeared in the period of industrialization. The aim of the studies was to create a base for creating a new management model. Such scientists as Baykov (1946) and Holzman (1953) worked in this field.

The problem discussion continued to experience stagnation during the Second World War. This can be explained by legitimate reasons associated with the secrecy of data related to changes in the management system. However, the subsequent events following the death of Stalin and the N.S. Khrushchev's rise to power caused the beginning of a rethinking of concepts related to Soviet economy management. These new developments made the scientists interested in the problems of economy, its sectors and management. Studies analyzing the importance of industry in the period of industrialization, the war and postwar period; the problems related to the rear during the war and the transitional processes of the mid-20th century began to appear. The success of Soviet industry in the mid-1950s was largely determined by organizational change in the management system. The centralized sector management model had proved itself effective during the war but began to malfunction in the postwar period. This was manifested in excessive centralization of management and inactivity in the development of regions. As a result, the country's leadership decided to switch to a territorial (or decentralized) nature of management under the conditions of the harsh foreign and domestic political situation.

N.S. Khrushchev's dismissal changed the direction of the country's economic development and led to a round of new reforms. This could not go unnoticed by Soviet researchers. Nevertheless, historiographical studies of the period of L.I. Brezhnev's leadership preserved a certain continuity by relying on the communistic party guidelines of the earlier period, despite the preceding reforms of the Soviet regime being recognized as failures. The reform concept was proposed in the decisions of the September Plenum of the CPSU Central Committee and later on supplemented by the resolutions of the CPSU Central Committee and USSR Council of Ministers "On Improvement of Industrial Management" (Ghaderloo et al., 2023) and

"On Improvement of Planning and Strengthening of Economic Stimulation of Industrial Production". This reform suggested the return to the centralized sector management with a significant expansion of the economic independence of enterprises.

A lot of important facts as well as additions to studies on many previously unexplored problems can be found in the post-Soviet period scientific literature but the content of materials was still far from perfect. Among them, we would like to highlight the studies of Yemelyanov et al. (2020), and Filonenko (2000).

The first significant study devoted to the impact of the administrative-command system on industrial management was the work of T.P. Korzhikhina (Korzhikhina 1992; Tigtiz & Yoo 2022). In this study, attention was drawn to the gradual transformation of the Soviet Union state management system by increasing the role of the state in economic issues and by reducing the role and importance of the Soviets, classification and bureaucratization of management.

In the works where the construction and functioning of the management system was discussed, the efficiency of state administration was considerably emphasized by the authors. A lot of studies on branch verticalization and the elements of decentralized management of the first years of the Soviet period were conducted. According to the authors, this happened as a response to the beginning of decentralization of management taking place in contemporary Russia in the 1990s (Lutov, 1997; Tigtiz & Yoo 2022).

We have evaluated the works of Western researchers on the efficiency of the Soviet economy and management system and divided them into several groups depending on the chronology of publications. The early group of works belongs to the post-revolutionary times and the first years of the Soviet period. At the time, the majority of foreign scholars (Holzman, 1953) did not have the confirmed facts and full image of the processes taking place in our country and tried to give them an interpretation. As a result, they presented post-revolutionary changes as a certain social and economic experiment and made assumptions about its further spread. In the first half of the twentieth century, more elaborated analytical works by Harper and Thompson (1949), and Baykov (1946) devoted to the functioning and organizational structure of the Soviet economy were published.

In the second half of the twentieth century, Western researchers started studying the Soviet economy and its management system. This can be explained by the high rates of domestic economic growth. In many respects, the purpose of the activities of Western researchers was to provide useful recommendations for their governments in relation to the Soviet Union. The greatest influence on the formation of the country's image in the eyes of the Western public was made by Rostow (1990), and (Yemelyanov et al., 2018a; Lacman et al., 2023).

Foreign researchers reviewed the reformatory activities of the second half of the twentieth century both positively to negatively. It should be highlighted that negative assessments were made more often.

Another wave of scientific interest in the management of the Soviet economy and individual industries was shown by foreign researchers (Remington 1984; Malle 2002) at the turn of the 1980s-1990s. This was, on the contrary, explained by the command economy crisis and the search for the reasons behind it. A special place in the discussions was given to the USSR authoritarian governance features, which began to form in the first years of the Soviet period. Besides, the cause-and-effect relations of the activities carried out were studied and analogies with subsequent historical periods were made.

The problems of the USSR are reinterpreted in the modern works of Nureev (2001). According to the authors, these problems are the inability of the system to adapt to new industries related to the use of computer technology, the exhaustion of labor resources, etc. Last but not the least of these reasons is the mistakes of the authorities.

METHODS

In this article, such general scientific methods of research as analysis and synthesis, deduction and induction, historical and logical processes connection, as well as special historical methods (historical and retrospective, system-structural) were used. Moreover, sociological survey and statistical processing of information were used as special methods. The applied methods allowed us to evaluate the degree of efficiency of the former (socialist) and modern model of Russian economic management.

We have created a questionnaire for the expert survey. Researchers and practicing economists engaged in the questions of historical and economic development of Russia and the Soviet period were chosen as experts. A total of 1,000 questionnaires were prepared and sent via email. The survey was anonymous, no private rights were violated. We received 352 responses. Processing was done using a licensed Microsoft Excel software product.

Based on the results of the survey, an expert opinion on the effectiveness of the Soviet and modern Russian economy was compiled. This data can be utilized for further analysis of opportunities to improve the management of the production and service sector of the country in modern conditions.

RESULTS

The socialist industry management system: principles, concepts, management bodies

Basic Principles of the Soviet Management System

Generally throughout the entire period of existence of the USSR the leading branch of the economy was industry. The development of other economic areas, as well as social, cultural, administrative and political construction depended on the condition of industry. Structurally, industry was represented by a set of diverse interrelated industries including many organizations and enterprises. Millions of workers were employed here and utilized costly equipment, buildings and structures, materials, etc. In order for this entire mechanism to function effectively, an elaborated management system was necessary.

We would like to emphasize that management has always served as one of the forms of production relations and reflected the specific social and economic situation in society (Gabdulkhakov et al., 2021; Oguilve et al., 2021; Shariati et al., 2013). The organizational forms and methods of management changed depending on the epoch and the changes of political and economic development laws. Consequently, it is important to consider the processes of management in specific historical conditions. However, the USSR management system had a number of fundamental differences. Socialist industry management was a type of government activity which consisted of a system of purposeful, authoritative actions on collectives of people engaged in social labor. The managing subsystem directed, coordinated, regulated and controlled the actions of the participants of this process. This influence was expressed in the decision-making and achieving particular goals. The correct organization of the management process was extremely important for the effective functioning of the whole management system. On the contrary, the shortcomings committed at the national level were compensated with great difficulty at the regional level.

When distinguishing the socialist management model from the market model, we can state that the former performed administrative functions aimed at the selection and placement of personnel, their management, disposal of state property, the use of economic and administrative methods of influence over the activities of the collective of workers. (Problems 1968: 23) Moreover, in accordance with the trends emerging in the country, the economic management bodies determined the direction, pace and proportions of growth of various industries taking into account the level of productive forces development and the achievements of science and technology.

The experience of leadership of socialist industry proves that management relations were shaped within the system which was a unity of legally related elements, objects, phenomena, etc. These relations ensured coordinated interaction between all structural elements of production relations within the system controlled by the central management bodies.

Management system and elements of organizational structure

The USSR management system of industry was a set of certain interrelated industries. Along with the management system taken on a national economic scale, there were local economic systems within the republics, industries, territorial industrial complexes, territories, associations and enterprises.

The conditions of the Soviet mobilization economy led to formation of centralized management systems for industries, complexes of enterprises, scientific, technical and economic organizations. The management system consisting of state and public institutions exercised the management of industry and served as the subject of management here. This system had an impact on the object of management, the industry, which consisted of branches, complexes, enterprises and labor collectives. Management consisted of the unity of numerous subordinated links, from the lowest level in the form of management of individual production areas or a relatively small group of direct executors up to the governing bodies of national importance heading relevant departments.

The construction of this system was conditioned by the fact that the state was the owner of the main means of production. As the subject of management, the government had to provide the conditions for the proper functioning of all industrial production areas at different levels of management. The key management bodies included central planning bodies and local planning commissions, central bodies of economic management of industry on the scale of the country and union republics, branch ministries, management of councils of national economy and territorial industrial complexes, branch production

associations. The closing link of this series at which the leadership was ultimately aimed was the industrial enterprise. As a result, an interconnected and interdependent organizational structure of management elements was formed.

Let us consider the concept of "organizational structure" in detail. It refers to a number of different links and stages of management, their subordination and interconnection. The structure represents one of the forms of their implementation and integrates the various elements of production and management into a unity.

Management bodies and links available both in the management system of the economy and in its branches such as industry, transport, agriculture and their sub-branches served as important elements of this structure. It is stated that the management unit included a group of employees belonging to a relatively isolated cell. The group was connected by relations of the labor division and implemented one of the management functions in the process of joint activity. The management units were a set of linear and functional bodies at a certain level of hierarchy in the system of economic management (Nureev, (2001). In our opinion, the different levels of management should be added to this scheme. The levels present the subordination sequence of the units from bottom to top (in other words, vertically). The level of management is a certain stage of the management hierarchy.

There were connections between bodies, links and levels of management. The type of connections in the organizational structure (between bodies and their constituent parts) depended both on the goals and functions of management and the character of the established relations. The external ties were the main element of the executive and administrative activity of the control body, while the intra-organizational relations between its constituent parts played a subordinate role. The internal and external relations of the governing body formed a unity and were naturally combined. These ties could often be characterized as authoritative because they were regulated by administrative and legal frameworks. The external and internal ties allowed public administration bodies to implement executive and administrative activity (Gabdulkhakov et al. 2021).

It should be noted that in addition to internal and external ties of organizational structures, vertical and horizontal, linear and functional ties and technical interaction ties were distinguished. They reflected the nature of relations between management bodies and their constituent parts. We can classify the structure of socialist economic system management bodies based on features such as type of bodies (state, public, party), state structure of the USSR (bodies of the Union or Union and autonomous republics), administrative territorial division (bodies of territories, regions, cities, districts, etc.), activity scale (central, regional and local bodies), nature of competence, method of formation and others. The management activity was held on national, inter-branch, territorial, sectoral, associations and enterprises levels. Each of these levels had its own features when shaping governing bodies at different times and transformations implementation conditions.

Industrial management bodies

The Soviet economic system was characterized by interaction and mutual influence of the following three elements of governance: the system of party power bodies, the system of state power bodies and the system of state administration bodies. The system of party power bodies included the Politburo, Communist Party of the Soviet Union (CPSU) Congresses, regional committees, city committees, etc. The system of state power bodies included the Supreme Soviet of the USSR, Supreme Soviets of Union republics, regional, territorial, rural Soviets of People's Deputies, etc. The system of state administration bodies included people's commissariats, ministries, associations, trusts, etc.

The system represented the interaction of the following elements: 1) the general management of industry - the All-Union Council of Ministers (at the early stage), the USSR Council of Ministers, the Councils of Ministers of Union and autonomous republics, executive committees of the Soviets of People's Deputies; functional inter-branch bodies of special competence - union, republican, local bodies (state committees of the USSR Council of Ministers (planning, science and technology, labor and social affairs), some ministries as well as planning commissions, financial departments of executive committees, etc.); 2) the branch structure consisting of: a) the higher level - ministries (so-called narkomats) and branch state committees, main administrations, commissions and other bodies (departments) of the USSR Council of Ministers, the Council of Ministers of Union and Autonomous Republics, branch departments and boards of executive committees of local Soviets of deputies; b) the middle level - all-union and republican production associations, branch departments of ministries and departments; c) the body for for managing the primary links of the national economy - production, scientific and production enterprises, departments

of state administration; 3) territorial management structure consisting of the Soviets of National Economy, territorial industrial complexes, etc.

The historical record of the USSR industrial management system construction showed a clear sequence of the way all-union and regional elements and mechanisms of the system form. On the level of individual republics, an identical model of management recreating elements of the state management system was built. This copying was largely explained by the possibility of facilitating control over functionally similar central and regional management bodies. Often the importance of the region was lost, which was explained by the subordination, for example, of the People's Commissariat of Heavy Industry of the republic to a similar Commissariat of the national level. As a result, we can assume that the republican (or regional) model of governance represented a scaled-down copy of the all-union model. The regional management models served as parts of the national administration by subordinating to the requirements of the central management bodies.

Transformation and current state of the Russian industrial management system

Stages of formation of the industrial management system

Let us consider the main stages of the industrial management system transformation from Soviet to Russian. The study content dictates three stages in the evolution of the management system of post-Soviet industry and the economy as a whole.

Firstly, we can observe the stage of the post-Soviet economic decline characterized by a lack of understanding of the long-term development goals, the intention to establish a market mechanism of industrial management and the lack of tools and resources for their realization. The time frame to which this stage belongs can be designated as the first half of the 1990s. This was the time of the Soviet economic degradation followed by the formation of the Russian Federation as the legal successor of the Soviet Union. The first market reforms of these times proved mostly ineffective. The works of both classical and new foreign economists such as J.B. Clark, A. Marshall, J.M. Keynes, M. Friedman, R. Solow, E.B. Atkinson, J. Stiglitz served as the theoretical basis for the transition to market reforms.

The government of young reformers led by E.T. Gaidar offered the immediate liberalization of prices on domestic and foreign markets as a way of improving the economic situation (Gaidar 1997). As a result, this stage led to the transition of the Russian economy to a market mechanism of management. According to scholars, the economic problems accumulated in the Soviet times made "shock therapy" reforms causing an abrupt transition to the market inevitable (Aganbegan 2010). Among the side effects of this stage were hyperinflation, declining living standards of the population and degradation of industry and the economy as a whole. During these years, the industrial management system gained some flexibility in decision-making but was deprived of the resources essential for its development.

Secondly, we can distinguish the stage of gradual market stabilization, transformation of the economy into the model of state capitalism and accumulation of the investment potential of the economy. This stage can conditionally be defined within the framework of the second half of the 1990s to the early 2000s. The economic crisis of 1998 was caused by the prior decisions of the government on reducing inflation, limiting the money supply on the one hand and increasing budget expenditures on the other hand (The real 2022). The technical default, the depreciation of the ruble, the change of government and leadership of the Central Bank marked the transition to the stabilization of the economic and industrial management system (Yemelyanov et al., 2020). The previously established market institutions such as private property, competition, entrepreneurship were developing during this time. The results of earlier privatization were stabilized, enterprises were consolidated, restructured, absorbed; inefficient owners were leaving. The government by E. Primakov came to power and pursued a consistent policy of developing and implementing a state-market management system (Nureev, 2001). These decisions allowed the government to understand the limitations and inefficiency of the market mechanism. As a result, a gradual return to methods of state regulation and medium- and long-term planning occurred. Three-year budget plans appeared in the budget policy. A number of state documents on scientific, technical, industrial policy and strategic planning were adopted (Official 2022).

The "iron curtain" collapsed as a response to the first two stages of the evolution of the management system. Enterprises, organizations and entire industries found themselves in a global competitive environment. The Russian market became open to foreign producers. Devoid of any state support, Russian manufacturers found themselves uncompetitive. Consequently, such domestic industries as electronics, electrical engineering, instrumentation, aircraft manufacturing, machine tool construction, and partially

mechanical engineering disappeared. The classical postulates of economy, according to which an open competitive space gives impetus to the development of production, did not work in this situation. In comparison with post-Soviet Russia, foreign competitors offered goods of a higher quality and variety, they had possibilities to reduce costs related to production. It led to suppression of domestic producers: they could not carry out the modernization of production, experienced lack of investments and growing inflation. Moreover, ties with the scientific sector, which also was in crisis, were lost.

Thirdly, we can mark the current stage of the Russian economy development. It is characterized by small fluctuations in GDP values, nevertheless, its gradual growth can be observed in the long term; the recovery of all industries, the improvement of the welfare of the population (also with some short-term fluctuations), and the strengthening of the geopolitical position of the Russian Federation. This period can be conditionally attributed to the time frame from the 2000s to the present. It was during this period that the post-Soviet economic collapse was halted.

Current stage of the economy and its management system development in Russia

The modern stage of industrial management in Russia is characterized by the application of all possible tools and mechanisms for the development of socio-economic activity. Firstly, as it has already been noted, long-term strategic planning is used. It provides extended production and growing investment into enterprises. Secondly, the sectoral and territorial structure of the economy is currently being improved. A lot of attention has been given to the structuring of the Russian economy according to its potential in science and innovation, industry and trade, education and creativity, infrastructure and technology, etc. Thirdly, tools such as project and process approaches, lean production, crisis management, investment design, benchmarking, reengineering of business processes, result-oriented budgeting, production automation based on MRP and ERP systems are used in industrial management. Fourthly, state policy uses both direct and indirect instruments of support. The indirect ones include tax, budget, fiscal and monetary policies. Direct participation of the state in the market activity is carried out through the creation of state corporations in the key areas of the economy, for instance, in extraction and processing of hydrocarbon resources, nuclear industry, space and rocket technology, shipbuilding and aircraft industry, information technology industry, innovation infrastructure and venture capital industry.

It is known that Russia's GDP grew by 14% from 2000 to 2020 and reached 106.97 trillion rubles (Russian Statistical 2021). In terms of meeting social goals, we can note the outpacing growth rate of per capita income (15.82%) over the growth rate of per capita GDP (14.65%). Naturally, there is still a gap between these indicators, which suggests the accumulation of significant economic resources generated by the population in the government's control (in 2020, the monthly per capita GDP amounted to 60,86 thousand rubles, compared to the average monthly income of the population - 36,07 thousand rubles). As a consequence, revenues of the consolidated budget of the Russian Federation are at the highest level against other indicators as it amounted to 18.28%. On the one hand, this could indicate an increase in the tax burden on business and natural rent extraction activities. On the other hand, this can be related to the strengthening of state presence in the economy. Thus, statistical indicators confirm the presence of a trend towards increasing centralization of the management system in the modern Russian economy. Outpacing growth rates of investment in fixed capital (17.2%) over GDP growth rates is a positive tendency, as it is a necessary condition for extended production and intensive economic growth. The declining growth rate of Russia's population is a negative trend. During the analyzed period, the population has decreased from 146.3 to 146.2 million people (Figure 1 and Figure 2).

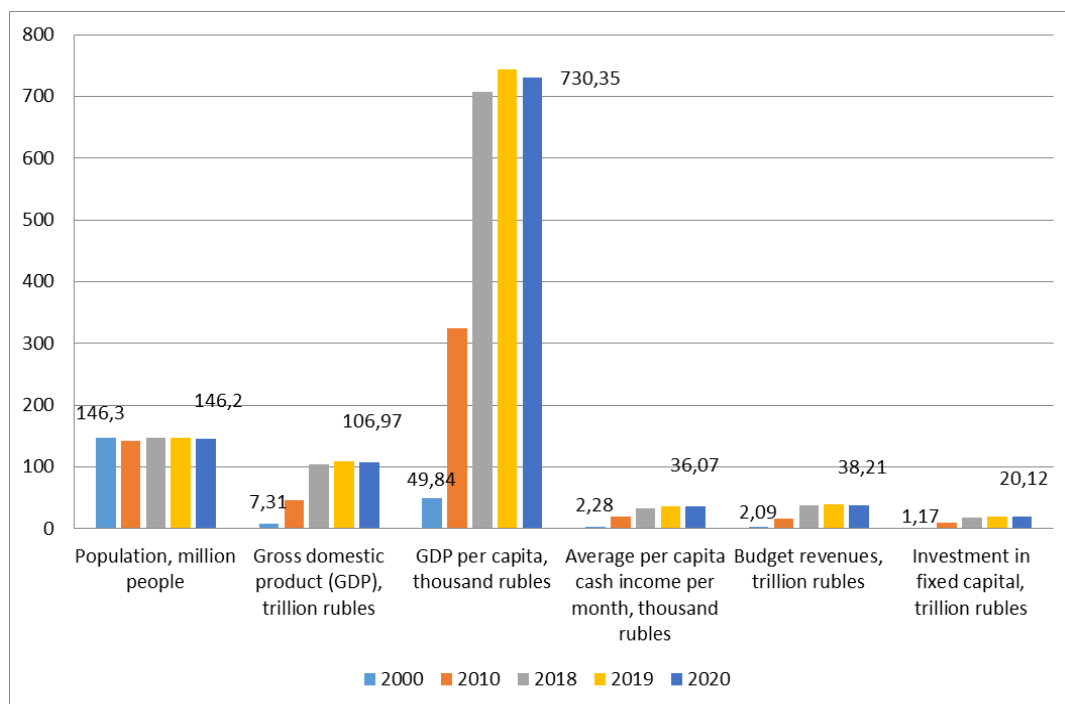


Figure 1. Main indicators of the modern Russian economy from 2000 to 2020 (compiled by the authors using the source: Russian Statistical Yearbook (2021) Statistical Collection / Rosstat. Moscow)

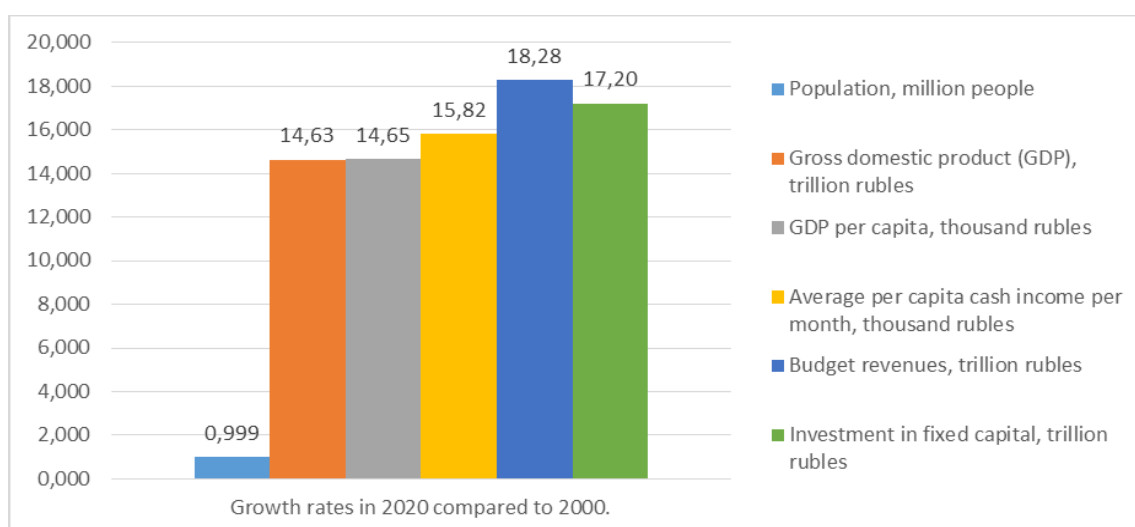


Figure 2. Growth rates of the main indicators of the modern Russian economy from 2000 to 2020 (compiled by the authors using the source: Russian Statistical Yearbook (2021) Statistical Collection / Rosstat. Moscow)

Therefore, it can be confirmed that the modern Russian economy has overcome the crisis of the transition period and moved from a planned administrative system of management to a market-state system utilizing all the innovative management and strategic planning methods. Meanwhile, such phenomena as the gained experience in effective national economy management, the high growth rate of the Soviet economy, large-scale mobilization of resources, the rapid recovery of the country after World War II, and the successful scientific and technological development, results of which are still used in Russia deserve in-depth study in order to identify the possibility of their application in modern conditions.

The conducted questionnaire on the effectiveness of the Soviet and modern Russian economy has shown the following results (Figures 3 - 6).

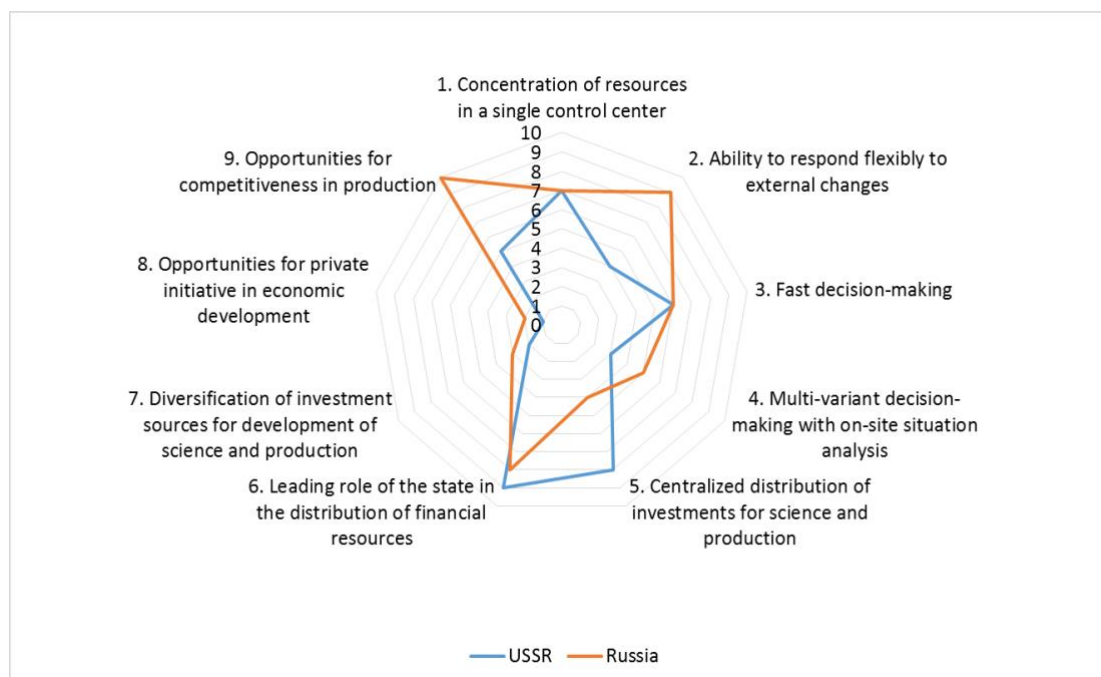


Figure 3. Comparative dynamics of advantages of the Soviet and modern Russian economies

Figure 3 shows that the modern Russian economy has gained a significant advantage in the organization of competitiveness among enterprises and flexible response to external changes. The case of multi-variant decision-making with analysis of the situation on the ground has slightly improved. On the other hand, such advantages as the leading role of the government in the distribution of material resources and the centralized distribution of investment for science and production were worsened. The advantage in fast decision-making has not changed. Such advantages as the possibility of private initiative and diversification of investment sources for development of science and production remained almost unchanged. It is connected to the fact that the modern Russian economy has not managed to create an effective market sector with active private investment, entrepreneurship and fair competition to its full extent. At the same time, the government has not found an alternative to the centralized measures of influence on the economy that would have dominated the Soviet economy. This did not improve the situation for private initiatives and the speed of decision-making.

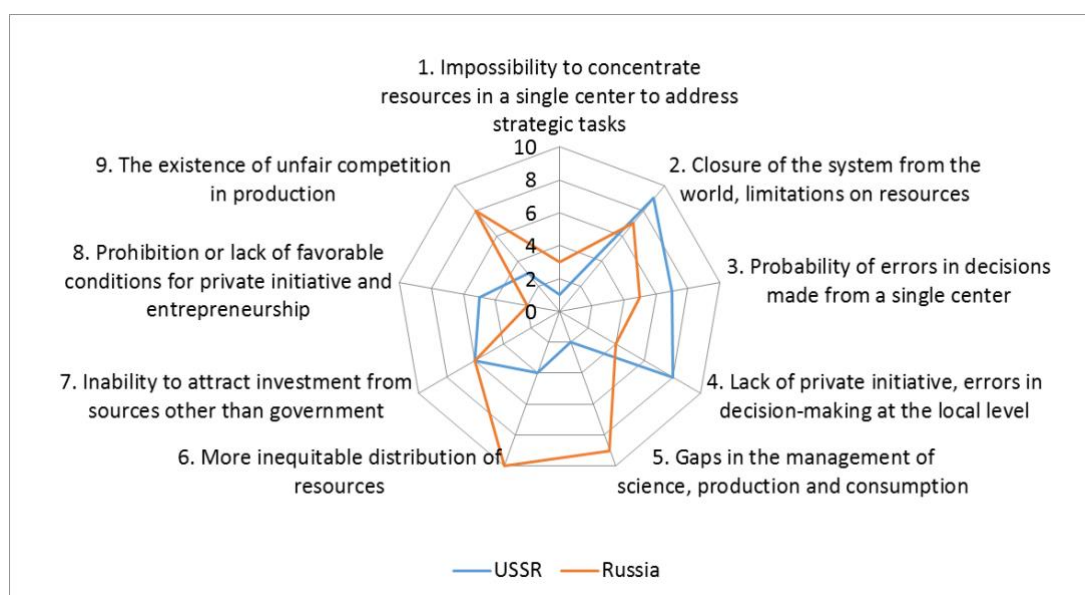


Figure 4. Comparative dynamics of disadvantages of the Soviet and modern Russian economies

Figure 4 demonstrates the emergence of positive effects associated with an increase in conditions for private initiative and entrepreneurship in the modern Russian economy. Nevertheless, shortcomings characteristic of the traditional market economy have increased, for example, the presence of unfair competition and gaps in the management of science, production and consumption. Reformers of the transition period understood rather late that the market cannot replace the role of the state in strategically important sectors and activities. This applies to social policy and distribution of financial resources. As a result, according to experts, the index of injustice in the distribution of material goods is off the scale in the modern Russian economy. A positive effect of increased liberalization of the economy has been the reduction of decision-making risks from a single center and an increase in the openness of the economy. The index of investment alternatives remained at the same level. This is explained by the fact that the risks of bankruptcy of enterprises remain quite high along with the market nature of economic relations. Accordingly, all private investment (including foreign investment) can be attracted only under state guarantees or with partial state subsidization of the costs related to investment attraction. At the same time, specialists believe that the Soviet economy accumulated investments for solving strategic problems more effectively.

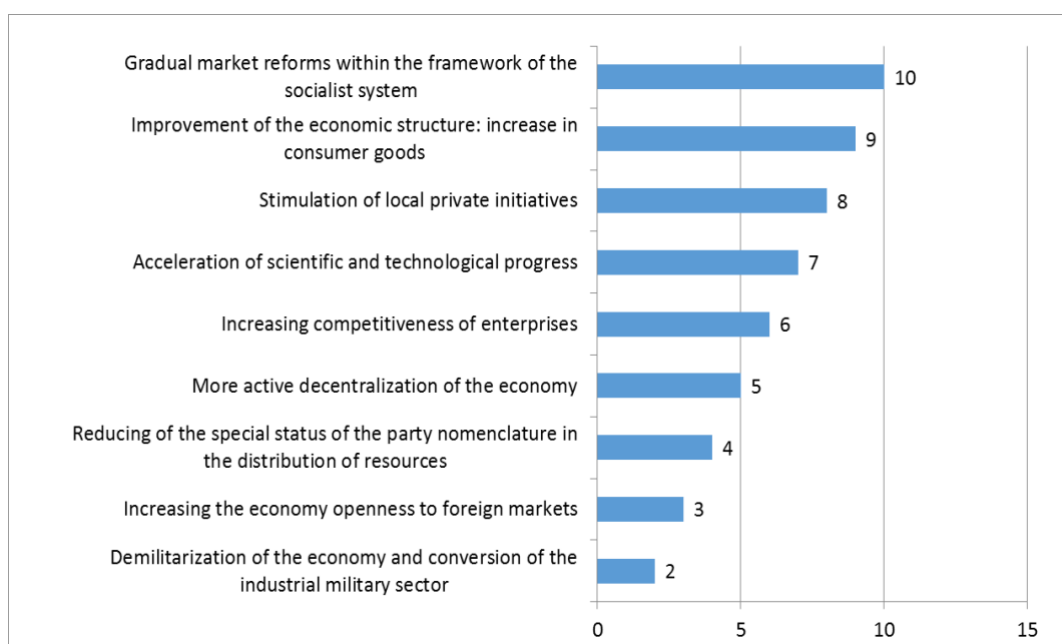


Figure 5. Rating of measures to maintain and modernize the Soviet economy

Figure 5 illustrates that according to experts, the rating of measures to maintain the economy of the USSR differs from the program implemented by the reformers of the transition period. It is possible to comprehend this now, after the market reforms have been carried out. Today, after many years, many experts believe that the most important thing was to preserve the socialist system, the ideological basis of society, and to move gradually to market reforms. The current economic policy should focus on increasing the production of consumer goods, stimulating private initiative and entrepreneurship, the acceleration of scientific and technological progress and competitiveness of enterprises. At the same time, the reasons that were prioritized by the reformers of the transition period (decentralization and opening (liberalization) of the economy, the special status of the party nomenclature, conversion of the military-industrial complex) according to experts, were not supposed to become the main goals of market reforms.

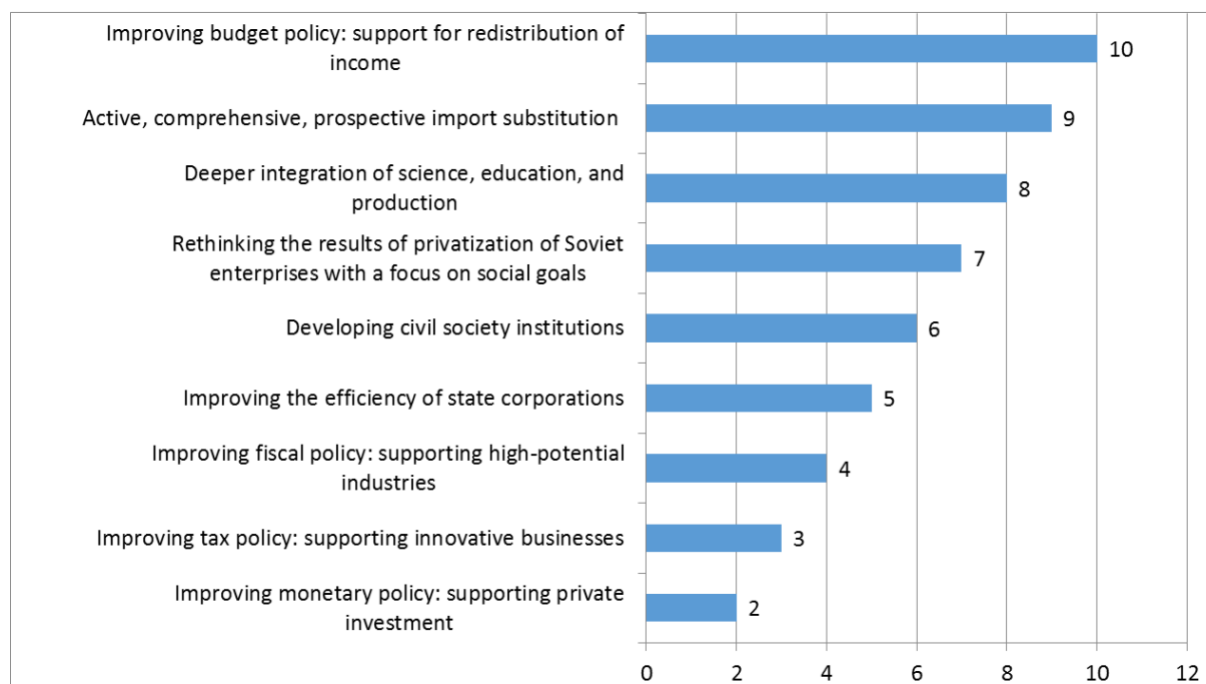


Figure 6. Rating of measures for the development of modern Russian economy

Figure 6 shows that according to experts the measures for the development of Russia's economy should be based primarily on social justice determined by social goals. Accordingly, it is necessary to first solve issues related to the equitable distribution of wealth and to rethink the results of the Soviet enterprises privatization. Only after increasing public and business confidence in the government economic reforms can be initiated. First of all, they must be linked to import substitution programs and the integration of science, education and production. It is also necessary to increase the performance of state corporations through the development of civil society institutions. Tactical economic measures should be associated with improvements of fiscal, tax and monetary policies. Development of prospective industries, innovative business, and private investment should be prioritized. The success of future reforms depends entirely on the consistency of decisions based on the list of the above-mentioned goals and the subordination of economic policy to the needs of society.

DISCUSSION

At different time stages of the Soviet economy evolution, different industries served as the driving force for modernization processes. For a long time, focusing on new prospective sectors of the economy allowed the Soviet Union to increase gross output. However, when the domestic economy for various reasons stopped responding to new challenges and started disregarding the global trends for developing the industries of microelectronics, robotics and others, the formation of stagnant trends took place. Consequently, the economic competitiveness of the state was reduced.

At the same time, it is worth mentioning that the Soviet Union developed in the general framework of economic processes taking place in the world. Under conditions of isolationism and in a relatively short period of time, the country was able to create a powerful industrial base that competed with the leading countries of the world on an equal basis. Nevertheless, the country's economy was predominantly of a catching-up nature. Its competitiveness was largely based on industries related to the military sector.

The uneven character of modernization processes was particularly evident at the regional level. The simultaneous growth of quantitative and qualitative indicators of all economic entities of the USSR was impossible because of different factors such as a huge territory, many administrative units and varying distances from the center, a large population and the specificity of its mentality, different economic potential of republics, territories, regions, and even different political views of the state and national elite.

CONCLUSION

The evolution of the Russian economy has a complex nature. Along with quantitative changes, there are profound, structural and qualitative changes. This is partly due to global trends as well as scientific and technological progress. There are also internal reasons associated with the distinctive characteristics of domestic economic relations originating from many centuries in history. The model of the Soviet economy was formed under the influence of the following factors: traditions of entrepreneurship, trade culture, attitude towards power, consumer expectations, level of trust, personal (both positive and negative) qualities of the people living in the country. The Russian economy in many respects was formed under the influence of economic mechanisms and the rules established in Soviet times. The considerable production, technological and infrastructural potential of the Soviet economy is still used in Russia. In this regard, it would be relevant to talk about the effect of the previous stages of development on the current economic situation. Therefore, only the consideration of all historical characteristics and trends will allow us to identify trends in the development of modern events and to form an effective social and economic policy of the Russian Federation by taking into account modern risks and threats.

As the conducted research has demonstrated, both the Soviet and Russian economic models had their strengths and weaknesses. The conducted sociological survey in combination with the analysis of scientific literature and statistical data allowed to form a rating of the advantages and disadvantages of different economic models. This, in turn, allowed us to identify ways for further modernization of the production sector and improvement of its management system.

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REFERENCES

- Aganbegyan, A. (2010). E. Gaidar as an outstanding reformer and Scholar. *Economic Policy*, 6, 23-31.
- Baykov, A. (1946). The development of the Soviet economic system: An essay on the experience of planning in the USSR (No. 5). CUP Archive. Carr E.H., *A History of Soviet Russia* (London, New York, 1950-1959).
- Dudukalov, E. V., Zolochevskaya, E. Y., Sorokina, M. Y., & Mangusheva, L. S. (2022). Structuring the economic space for small business in the agro-industrial complex. *Siberian Journal of Life Sciences and Agriculture*, 14(2), 176-215. doi:10.12731/2658-6649-2022-14-2-176-215
- Filonenko A.L., (2000). The origin of the Soviet system of industrial management (Magnitogorsk, 2000).
- Gabdulkhakov, R. B., Poltarykhin, A. L., Tsukanova, O. M., & Avdeev, Y. M. (2021). Regional competitiveness assessment: prospects for the agro-industrial complex of the region. *Siberian Journal of Life Sciences and Agriculture*, 13(6), 339-361. doi:10.12731/2658-6649-2021-13-6-339-361
- Gaidar E.T. (1997). Days of defeats and victories. (Moscow).
- Ghaderloo R.A. , Sirat A., Shoulaie A. (2023) A High Frequency Active Clamp Forward Converter with Coreless Transformer, arXiv preprint arXiv:2307.12804 <https://doi.org/10.48550/arXiv.2307.12804>
- Golovina, S. G., Poltarykhin, A. L., Zhuravlev, P. V., & Mikolaychik, I. V. (2022). Income of the rural population is a condition for the formation of human capital in rural areas. *Siberian Journal of Life Sciences and Agriculture*, 14(1), 83-102. doi:10.12731/2658-6649-2022-14-1-83-102
- Harper, S. N., & Thompson, R. B. (1949). The Government of the Soviet Union: Samuel N. Harper and Ronald Thompson. D. van Nostrand.
- Holzman, F. D. (1953). The Soviet Budget, 1928-1952. *National Tax Journal*, 6(3), 226-249.
- Korzikhina, T.P. (1992). Birth of the administrative-command control system. *Administrative-Command Control System: Problems and Facts* (Moscow, 1992).
- Lacman, A., Křístek, M. and Klempa, M., (2023). Study of Mechanical-Elastic Parameters of Reservoir Rocks with Respect to the Purpose of Permanent CO2 Storage. *Metallurgical and Materials Engineering*, 29(2), pp.36-52.
- Lutov, L. (1997). State Management of the Economy: Lessons from History. VOPROSY ECONOMIKI, 6. Lyutov L.N., *Private industry during the NEP years (1921–1929)* (Saratov, 1994).
- Malle, S. (2002). The economic organization of War Communism 1918-1921 (No. 47). Cambridge University Press.

- Nureev, R. M. (2001). *Social Subjects of Post-Soviet Russia: Past and Present*. World of Russia.
- Oguilve, V., Wen, W., Bowen, E., Abourehab, Y., Bermudez, A., Gaxiola, E., & Castek, J. (2021). Community Making: An Expansive View of Curriculum. *Journal of Curriculum Studies Research*, 3(1), 69-100. <https://doi.org/10.46303/jcsr.2021.8>
- Panova, E. P., Tjumentseva, E. V., Koroleva, I. A., Ibragimova, E. R., & Samusenkov, V. O. (2021). Organization of project work with the help of digital technologies in teaching russian as a foreign language at the initial stage. *International Journal of Emerging Technologies in Learning*, 16(22), 208-220. doi:10.3991/ijet.v16i22.20573
- Pogosyan, V. G. (2021). Problem of innovations diffusion: A historical retrospective. *Voprosy Istorii*, 2021(5-2), 24-32. doi:10.31166/VoprosyIstorii202105Statyi30
- Remington T., *Building Socialism in Bolshevik Russia: Ideology and Industrial Organization, 1917–1921* (Pittsburgh, 1984).
- Rostow, W. W. (1990). *The stages of economic growth: A non-communist manifesto*. Cambridge university press.
- Russian Statistical Yearbook Statistical Collection, *Rosstat* (Moscow, 2021).
- Shurygin, V., Saenko, N., Zekiy, A., Klochko, E., & Kulapov, M. (2021). Learning management systems in academic and corporate distance education. *International Journal of Emerging Technologies in Learning (IJET)*, 16(11), 121-139.
- Shariati, A., Azaribeni, A., Hajighahramanzadeh, P., & Loghmani, Z. (2013). Liquid–liquid equilibria of systems containingsunflower oil, ethanol and water. *APCBEE procedia*, 5, 486-490.
- Tightiz L., & Yoo J. (2022), A robust energy management system for Korean green islands project. *Scientific Reports*. 20;12(1):22005.
- Tightiz L., & Yoo J. (2023), A novel deep reinforcement learning based business model arrangement for Korean net-zero residential micro-grid considering whole stakeholders' interests. *ISA transactions*. 1;137:471-91
- Vertakova, Y., Mkrtchyan, V., & Leontyev, E. (2019). Information provision of decision support systems in conditions of structural changes and digitalization of the economy. *Journal of Applied Engineering Science*, 17(1), 74-80.
- Yemelyanov, V., Yemelyanova, N., & Nedelkin, A. (2018a). Neural network for decision support to determine the operating mode of lined equipment. In *MATEC Web of Conferences* (Vol. 224, p. 04005). EDP Sciences.. DOI: 10.1051/mateconf/201822404005.
- Yemelyanov, V., Emelyanova, N., Safonova, M., & Nedelkin, A. (2018b). The neural network to determine the mechanical properties of the steels. *AIP Conference Proceedings*. 1952. 020032. DOI:10.1063/1.5031994
- Yemelyanov, V., Nedelkin, A., & Yemelyanova, N. (2020). Expert System Software for Assessing the Technical Condition of Critical Lined Equipment. *Advances in Intelligent Systems and Computing*, DOI:10.1007/978-3-030-37916-2_92.