Brief information about the project

Title	AP22684879 «Development of an intelligent information system optimal allocation of resources for production enterprises and forecasting the dynamics of its development»
Relevance	The relevance of the project lies in the need to optimize resource allocation in modern industrial conditions using intelligent technologies that take into account external factors and uncertainty.
Goal	Creation of an intelligent information system using the Cobb–Douglas production function and development of control algorithms taking into account external influences to optimize the allocation of resources of manufacturing enterprises and predict the dynamics of their development
Tasks	1. Development an economic and mathematical model based on the Cobb-Douglas production function and taking into account external influences on production. 2. Development of control algorithms that will ensure the allocation of resources in production, taking into account the uncertainty of external factors. 3. Integration of machine learning methods: Development of algorithms for integrating the Cobb-Douglas function into an information system in order to efficiently allocate resources, analyze data and predict the dynamics of enterprise development. 4. Development of an intelligent information system that includes a user interface, database and integration of all developed components. 5. Testing the information system on real data and evaluating its effectiveness to identify and eliminate possible errors and shortcomings. 6. Monitoring and analysis of the results of the implementation of the system at a specific enterprise to assess the impact of the system on the allocation of resources and forecasting the development of organizations.
Expected and Achieved Results	1. An intelligent information system that combines mathematical modeling methods, optimal control algorithms and machine learning to optimize resource allocation in manufacturing enterprises. 2. Algorithms and methods that allow efficient allocation of resources in conditions of uncertainty and external influences. 3. Opportunities for forecasting the dynamics of the development of organizations based on data and analysis conducted by the system. 4. Testing an intelligent information system on real data and evaluating its effectiveness, identifying and eliminating possible errors and shortcomings. 5. Analysis of the results of the implementation of the system in a particular enterprise, assessment of the impact of the system on the allocation of resources and forecasting the development of organizations. 6. An information system ready for commercial use and sale in various organizations and enterprises in the Republic of Kazakhstan. The expected results of this project focus on improving management and optimizing production resources, which should contribute to a more efficient economy and the development of organizations

Names and Surnames of Research Group Members with Their Identifiers (Scopus Author ID, Researcher ID, ORCID, if available) and Links to Corresponding Profiles	Project manager: Tussupova Kamshat Bakytzhanovna https://orcid.org/0000-0002-5254-3432 Research advisor: Mirzakhmedova Gul'banu Absamatovna
Publications list with links to them	1. Tussupova K.B., Mirzakhmedova G.A. Informatsionnaya sistema planirovaniya effektivnogo raspredeleniya investitsiy i trudovykh resursov mezhdu sektorami ekonomiki. IX Mezhdunarodnaya nauchno-prakticheskaya konferentsiya «Informatika i prikladnaya matematika», 2024, – S. 111-115. 2. Murzabekov Z.N., Tussupova K.B. Development of a model of efficient resource allocation in an open three-sector economy for balanced growth. Journal of Mathematics, Mechanics and Computer Science (ВЕСТНИК КазНУ, серия математика, механика и информатика), 2025, №124(4), 59-70 pp. DOI: https://doi.org/10.26577/JMMCS2024-v124-i4-a5 3. Tusupova K.B. Razrabotka algoritma chislennogo resheniya zadachi optimal'nogo upravleniya resursami v trekhsektornoy ekonomike, VESTNIK AUES, 2024, № 67(4), - S. 172-184. DOI: 10.51775/2790-0886_2024_67_4_172 4. Tussupova K, Murzabekov Z. Optimal Allocation of Resources in an Open Economic System with Cobb–Douglas Production and Trade Balances. *Economies*. 2025; 13(7):184. https://doi.org/10.3390/economies13070184
Patent information	