



Agency for Strategic planning  
and reforms of the  
Republic of Kazakhstan  
Bureau of National statistics

# Quality Report

Research and development Activities on the Republic  
of Kazakhstan for 2024

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## S.1 Contact Information

### S.1.1 Organization

Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan

### S.1.2 Structural Division

Department of Service and Energy Statistics

### S.1.3 Contact Person's Name

Kipshakova Kuralai Sovetzhanyzy

### S.1.3. Head of the Responsible Structural Division

Aigozina Gulzhikhan Kairatovna

### S.1.5 Contact Person's Postal Address

010000, Astana, Left Bank of the Ishim River, 8 Mangilik El Street, House of Ministries, Entrance 4

### S.1.6 Contact Person's Email Address

k.kipshakova@aspire.gov.kz

### S.1.7 Phone number of the contact person

+7 7172 749770

## S.2 Introduction - Relevance

Science statistics aim to develop and improve science indicators, systematize them, introduce new definitions and interconnections, contributing to a more complete and comprehensive understanding of the state of the scientific sector, as well as its impact on the country's socio-economic development.

Science is a field of human activity whose function is the study of the laws of nature, society, and thought, and the development and theoretical systematization of objective knowledge about reality, for the purpose of rational use of natural resources and effective governance of society.

Classification of enterprises engaged in research and development by economic sectors: business sector, government sector, non-profit and higher education sector.

1) the business sector includes enterprises, organizations, and private institutes engaged in the production or provision of market goods or services (excluding higher education services) for sale to consumers at economically justified prices;

2) Government sector includes institutions funded by the state budget, created to provide non-market individual services in healthcare, social security, culture and the arts, recreation (excluding educational services), as well as collective services in public administration, law enforcement and security, defense, science and scientific support, road infrastructure; also includes state social insurance funds and other government funds established and managed by the state;

3) Non-profit sector includes legal entities funded by private non-profit organizations;

4) Higher education sector includes universities, institutes, academies, colleges, and other post-secondary institutions, regardless of their funding

sources and legal status; research institutes, experimental laboratories, and clinics directly managed by or affiliated with institutions of higher education. Research and development includes basic research (BR), applied research (AR), and experimental development (ED).

The foundation of science statistics is the statistical survey using Form 1-science «Report on research and development Activities». The main goal of the statistical survey is to determine the number of enterprises and organizations engaged in scientific research and development in the Republic of Kazakhstan.

Main users of the data Committee of Science of the Ministry of Science and Higher Education of the Republic of Kazakhstan, Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan, Ministry of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan

The Bureau of National Statistics (hereinafter – the Bureau) organizes working group (focus group) meetings with the participation of potential users and respondents, and representatives of interested government agencies. During these meetings, indicators of nationwide statistical forms are thoroughly analyzed to assess their relevance and eliminate duplication with departmental statistical forms and administrative data.

### S.3 Metadata Update.

#### S.3.1 Last Confirmation of Updated Metadata

October 18, 2022

#### S.3.2 Last Publication of Metadata

October 18, 2022

#### S.3.3 Last Update of Metadata

October 18, 2022

### S.4 Presentation of Statistical Information

#### S.4.1 Description of Data

Main indicators of the statistical survey in the field of research and development include:

- 1) internal and external expenditures on research and development;
- 2) sources of funding for internal research and development expenditures;
- 3) number of research and design units;
- 4) Number of personnel involved in research and development.

#### S.4.2 Classification System

The following statistical classifiers are used in the survey:

- 1) CATO – Classifier of Administrative-Territorial Objects;
- 2) OKED – General Classifier of Economic Activities;
- 3) CFS – Classifier of Forms and Types of Ownership;
- 4) CRP – Classifier of the dimension of legal entities;
- 5) CSE – Classifier of Economic Sectors.

These classifiers are available on the Bureau's website: [www.stat.gov.kz](http://www.stat.gov.kz) / «Home» / «Classifiers».

#### S.4.3 Sectoral Coverage

Scope of respondents: legal entities and/or their structural and separate subdivisions with primary and secondary types of economic activity according to codes 72 and 85.4 of the General Classifier of Types of Economic Activity, as well as organizations, regardless of activity type, that performed research and development according to the designated list.

#### S.4.4 Statistical Concepts and Definitions

1) Instrument: Statistical form «Report on research and development Activities» (Code 241112123, Index 1-science, annual frequency)

2) Type of observation: Panel-based.

3) Submission deadline: No later than January 25 (inclusive) following the reporting period. The statistical form can be submitted in paper or electronic format. Electronic submission is done via the online data collection system available on the Bureau's website [www.stat.gov.kz](http://www.stat.gov.kz), section «For Respondents» / «Respondent's Cabinet»«»

The last revision of the form was in 2022. It is published on the Bureau's website in the section: «For Respondents» / «Statistical Forms for 2025» / «Annual Forms».

Definitions:

1) External expenditures – the cost of research and development carried out by external organizations under contracts or the acquisition of research and development results from other enterprises during the reporting period;

2) Internal expenditures – research and development expenditures carried out within the enterprise during the reporting period, as well as those outside the enterprise but serving its internal research and development.

#### S.4.5 Statistical Unit

Legal entities and/or their structural and separate subdivisions that conducted research and development.

#### S.4.6 General total (The principle of choosing survey units).

The panel is formed based on the Statistical Business Register, a list of enterprises created from the results of annual surveys using Forms 1-science, 1-PF, and 2-MP. It includes enterprises that answered positively in the reporting year about planning research and development activities in the following year. Additional sources include lists of subsoil users and state-funded scientific projects provided by administrative sources.

#### S.4.7 Territorial Coverage

Republic of Kazakhstan (all regions and cities of republican significance)

#### S.4.8 Time Coverage

Science surveys in Kazakhstan have been conducted annually since 2003.

Time series data are available from 2003 to 2024.

#### S.4.9 Base period

The base period is the year preceding the survey year.

#### S.5 Unit of Measure

Person, thousand tenge and units.

#### S.6 Reporting Period

Year

## S.7 Legal Framework

### S.7.1 Legal Basis

1. Law of the Republic of Kazakhstan dated March 19, 2010 No. 257-IV «On State Statistics».
2. Rules for the submission of primary statistical data by respondents, approved by Order No. 173 of the Chairperson of the Agency of the Republic of Kazakhstan for Statistics dated July 9, 2010 (registered in the State Register of Regulatory Legal Acts under No. 6459)
3. Statistical Work Plan, approved by the Order of the Head of the Bureau.
4. Schedule for Dissemination of Official Statistical Information, approved by the Order of the Head of the Bureau
5. «Methodology for the Formation of Indicators of Research and development and Innovation Statistics» approved by Order No. 232 of the Chairperson of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan dated October 6, 2016.

## S.8 Confidentiality and Data Protection

### S.8 Confidentiality and Data Protection

#### S.8.1 Confidentiality Policy

Article 8 of the Law of the Republic of Kazakhstan dated March 19, 2010 “On State Statistics” guarantees the confidentiality and protection of data submitted by respondents.

2. Article 28 of the Entrepreneurial Code of the Republic of Kazakhstan dated October 29, 2015 ensures the protection of information that constitutes a commercial secret.

3. The Information Security Policy (hereinafter – the Policy), approved by the Order of the Head of the Bureau dated February 10, 2021 No. 20, defines the goals, objectives, guiding principles, and practices in the field of information security.

The primary objective of the Policy is to ensure the availability of official statistical information, confidentiality of information stored and processed by the Bureau’s computing systems, and integrity and authenticity of this information.

#### S.8.2 Confidentiality - Data Handling

Rules for the provision of de-identified databases for use in scientific and scientific-technical activities, approved by the Order of the Chairperson of the Agency for Statistics of the Republic of Kazakhstan dated July 2, 2010 No. 168 (registered with the Ministry of Justice of the Republic of Kazakhstan on August 13, 2010 No. 6388).

## S.9 Publication Policy

### S.9.1 Publication Calendar

Items 1 and 2 of Article 26 of the Law of the Republic of Kazakhstan “On State Statistics” dated March 19, 2010 No. 257-IV. The Statistical Work Plan and the Schedule for Dissemination of Official Statistical Information are published on the Unified Platform of Internet

Resources of Government Agencies (UPGO) [www.gov.kz](http://www.gov.kz), in the Bureau section.

#### S.9.2 Access to the Schedule

Simultaneous and equal access for all users through the Unified Platform of Internet Resources of Government Agencies (UPIR GA) [www.gov.kz](http://www.gov.kz) Bureau section / «Home» / «Key Documents».

#### S.9.3 User Access

The Bureau's website [www.stat.gov.kz](http://www.stat.gov.kz) «Home» / «Statistics» / «Social Statistics» / «Statistics of Education, Science, and Innovation» / «Electronic Tables».

#### S.10 Frequency of Dissemination

Annually

#### S.11 Format of Dissemination, Accessibility, and Clarity

##### S.11.1 News Publications

##### S.11.2 Publications

1) Electronic tables titled «Research and development Activities in the Republic of Kazakhstan», available on [www.stat.gov.kz](http://www.stat.gov.kz)/ «Statistics»/«Social Statistics»/«Statistics of Education, Science and Innovation»/«Electronic Tables»/«Science»;

2) Indicators for Sustainable Development Goals, available on [www.stat.gov.kz](http://www.stat.gov.kz) / «Statistics» / «Sustainable Development Goals»

3) Key indicators and dynamic tables, available on [www.stat.gov.kz](http://www.stat.gov.kz) «Statistics» / «Social Statistics» / «Statistics of Education, Science and Innovation» / «Dynamic Series» / «Science».

##### S.11.3 Online Databases

The Bureau's website: [www.stat.gov.kz](http://www.stat.gov.kz) Information and Analytical System «Taldau» / «Science Statistics» / «Scientific and Technical Activities of Organizations».

##### S.11.3.1 AC1. Data Tables – Consultations

Not implemented.

##### S.11.4 Access to Microdata

Rules for the provision of de-identified databases for use in scientific and scientific-technical activities, approved by the Order of the Chairperson of the Agency for Statistics of the Republic of Kazakhstan dated July 2, 2010 No. 168 (registered with the Ministry of Justice of the Republic of Kazakhstan on August 13, 2010 No. 6388).

##### S.11.5 Other

Not applicable.

##### S.11.5.1 AC2. Metadata - Consultations

Not implemented.

#### S.12 Documentation Availability

##### S.12.1 Methodological Documentation

1) Methodology for the Formation of Indicators of Research and development and Innovation Statistics, approved by Order No. 232 of the Chairperson of the Committee on Statistics of the Ministry of National

Economy of the Republic of Kazakhstan dated October 6, 2016 and registered with the Ministry of Justice on November 8, 2016 No. 14404. Available at [www.stat.gov.kz](http://www.stat.gov.kz) «Methodology» / «R&D and Innovation Statistics».

2) Methodological Position on Statistics 2018, fourth edition, with addendum. Available at [www.stat.gov.kz](http://www.stat.gov.kz) «Methodology»;

3) Frascati manual, «Science, Technology and Industry Sector – Committee for Scientific and Technological Policy» 2015, available at [www.oecd.org](http://www.oecd.org).

#### S.12.2 Quality Documentation

1. Quality Policy approved by the Order of the Chairperson of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan dated November 16, 2020.

2. Quality objectives of the relevant structural division.

3. Documented information of the quality management system: Quality Manual; Documented Procedures; Instructions; Process Maps.

4. Standard Methodology for Describing the Process of Statistical Information Production by State Agencies, approved by Order No. 53 of the Chairperson of the Committee on Statistics dated March 30, 2015.

5. Methodology for Evaluating the Quality of Official Statistical Information, approved by Order No. 63 of the Chairperson of the Committee on Statistics dated May 23, 2018.

#### S.13 Quality Management

##### S.13.1 Quality Assurance

The quality and reliability of science statistics data are maintained through commonly accepted procedures:

- compliance with the basic principles of primary data accounting; Use of standard statistical classifications for goods, products, and services;
- development and implementation of various controls (format-logical, arithmetic) during the collection and processing of primary data;
- obtaining additional information from respondents to verify the accuracy of primary data;
- conducting comparative analysis of statistical data over time;
- implementation of accuracy checks at the data entry stage in electronic format, including various format-logical controls within the software used for processing primary statistical information, to improve data quality, verify correct completion of the statistical form, and minimize missing responses in certain fields.

##### S.13.2 Quality Assessment

«The Methodology for the Formation of Indicators of Research and development and Innovation Statistics» complies with international standards.

#### S.14 Relevance

##### S.14.1 User Needs

Users of the information include: Committee of Science of the Ministry of Science and Higher Education of the Republic of Kazakhstan, Ministry of



Industry and Infrastructure Development of the Republic of Kazakhstan, Ministry of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan, Local executive bodies and other government agencies – for analytical purposes, Individuals and legal entities.

#### S.14.2 User Satisfaction

A user questionnaire is available on the Bureau's website [www.stat.gov.kz](http://www.stat.gov.kz) «Home» / «Surveys» / «User Questionnaire».

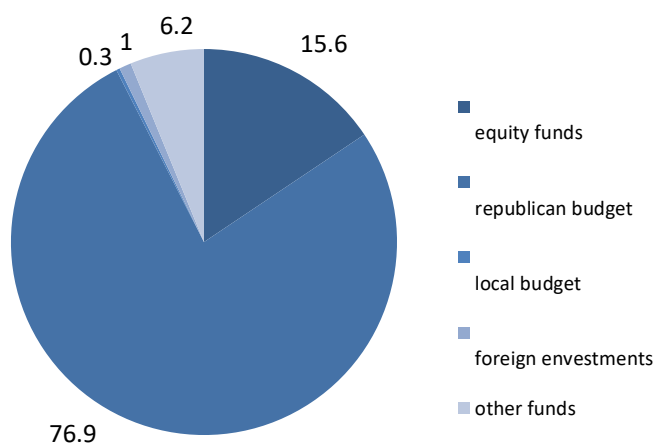
#### S.14.3 Completeness /R1. Data Completeness – Share

#### S.15 Accuracy and Reliability (based on observation type)

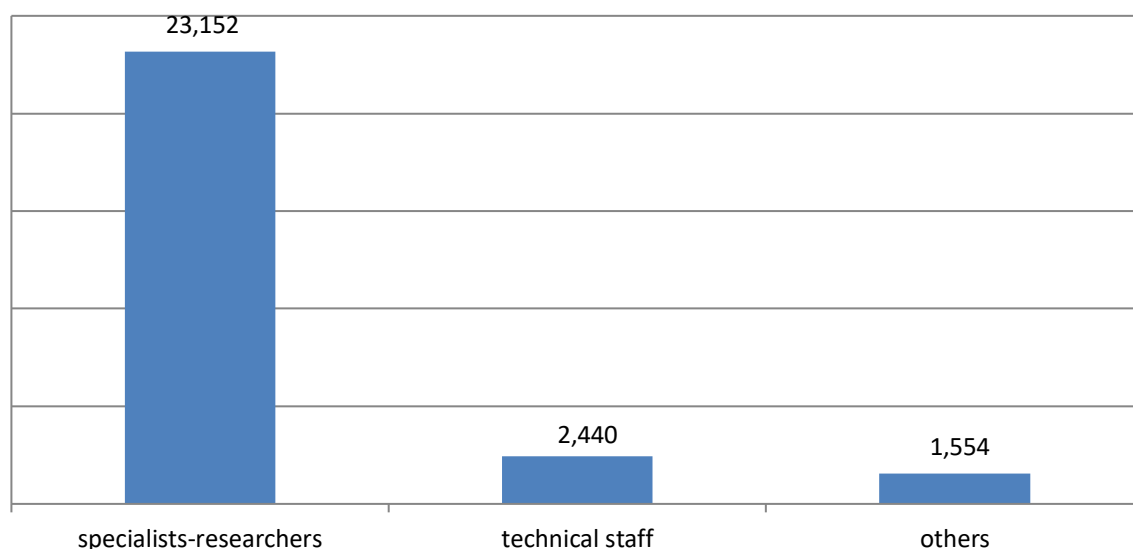
##### S.15.1 Overall Accuracy

The nationwide survey on science statistics is structured to minimize and control possible errors. During data collection, random errors may occur (e.g., incorrect data entry on costs, operator input errors, etc.). Such errors are identified and corrected by the regional statistical departments of Almaty, Astana, Shymkent, and the Bureau during the statistical observation process. The number of organizations that reported in 2024 was 1988, of which 423 carried out research and development. In 2024, 27146 people were engaged in research and development, of which 23152 people are research specialists, 2440 people are technical staff, and 1554 people are others. The largest shares in the sources of financing internal research and development costs come from the republican budget – 76,9%, enterprises own funds – 15,6% and funds from other sources – 6,2%.

#### Structure of internal research and development Expenditures for 2024



### Number of Employees Engaged in research and development by category for 2024



#### S.15.2 Sampling Errors – Indicators A1.

Not applicable.

#### S.15.3 Non-Sampling Errors

Due to the mandatory nature of submitting primary statistical data, non-response during the survey is absent. In the science survey, there were no non-sampling errors.

##### S.15.3.1 Coverage Error

Not applicable.

##### S.15.3.1.1 A2. Over-coverage – Share

Not applicable.

##### S.15.3.1.2 A3. Common Units – Ratio

Not applicable.

##### S.15.3.3 Non-Response Errors

##### S.15.3.3.1 A4. Unit Non-Response – Share

Not applicable.

##### S.15.3.3.2 A5. Item Non-Response – Share

Not applicable.

#### S.16 Timeliness and Punctuality

##### S.16.1 Timeliness

##### S.16.1.1 TP1. Time Lag – First Results

The time taken to process the first results from the date of submission by respondents to the first publication averages 51 days.

Results are published annually, in accordance with the schedule approved by the Statistical Work Plan and the Schedule for Dissemination of Official Statistical Information.

##### S.16.1.2 TP2. Time Lag – Final Results

The results are published annually in accordance with the current year's Statistical Work Plan. These results are final.

## S.16.2 Punctuality

### S.16.2. Punctuality /TP3

Data are published and disseminated on time, according to the Statistical Work Plan and the Schedule for Dissemination of Official Statistical Information, approved by the Order of the Head of the Bureau.

## S.17 Comparability

### S.17.1 Geographical Comparability

Data are comparable across the regions of the Republic of Kazakhstan.

#### S.17.1.1 Mirror Flow Asymmetry – Coefficient /CC1

Not applicable.

### S.17.2 Length of Comparable Time Series /CC2

Dynamic indicators on science statistics are comparable and continuous since 2003. Time series for 2003–2024 are available at [www.stat.gov.kz](http://www.stat.gov.kz) «Statistics» / «Social Statistics» / «Statistics of Education, Science, and Innovation» / «Dynamic Series» / «Science».

## S.18 Coherence

### S.18.1 External Cross-Coherence

The methodology for forming research and development and innovation statistics indicators was developed in accordance with international recommendations received under the KAZSTAT Project (Project for Strengthening the National Statistical System) and Eurostat standards. The experience of the Statistics Office of Finland was used.

### S.18.2 Internal Coherence

## S.19 Load

Data collection is carried out in electronic or paper form, at the respondent's discretion.

For online data submission, automated arithmetic and logical controls are built in to prevent typical data entry errors.

Information processing is automated using local software systems, with input and output controls in place. The average time required to complete the form is 1–2 hours. Duplication with other surveys is excluded. Administrative data are not used.

## S.20 Data Revision

### S.20.2 Data Revision / A6

No revisions or re-publications were made for 2024.

## S.21 Processing of Statistical Data

### S.21.1 Source Data

Statistical information on science is formed based on primary reports from respondents using Form 1-science “Report on Research and development Activities.” The survey is conducted on a panel basis.

The panel is formed using the Statistical Business Register – a list of enterprises generated from the results of annual surveys (Forms 1-science, 1-PF, 2-MP), including those that reported plans for research and development in the subsequent year. Additional sources include lists of subsoil users and state-funded scientific projects provided by administrative sources.

#### S.21.2 Frequency of Survey

Annual

#### S.21.3 Method of Primary Statistical Data Collection

Research and development statistics forms are submitted in paper or electronic format.

Electronic completion is carried out via the online data collection system on the Bureau's website [www.stat.gov.kz](http://www.stat.gov.kz)

#### S.21.4 Reliability of Primary Statistical Data

To improve data quality, ensure accurate completion of the statistical form, and minimize missing responses to certain questions, data validation checks are implemented at the stage of electronic entry of primary data. Additionally, various format-logical controls are built into the software used for processing primary statistical information.

Format-logical controls are applied: between sections, modules, fields.

#### S.21.5 Imputation – Share /A7

Not applicable.

#### S.21.6 Adjustment

##### S.21.6.1 1 Seasonal Adjustment

Not applicable.

#### S.22 Comments

Continue efforts to ensure the quality of data.