PUBLIC ADMINISTRATION

DURING A PANDEMIC

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The study "Public Administration During a Pandemic" was carried out by the Academy of Public Administration under the President of the Republic of Kazakhstan (hereinafter - Academy) as part of a project of the Astana Civil Service Hub (hereinafter - Hub) to support the Scientific School of Public Administration.

This research report is available on the Hub’s website in the author's edition in three languages. In case of queries, it is advised to address the original version in Russian or contact the heads of the research team.

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ANNOTATION

The aim of the project: to formulate the «Agenda» for Kazakhstan in the sphere of public administration in the crisis and post-crisis recovery period.

Methods of work. To study and summarize government approaches in the context of a pandemic, a comparative analysis of measures taken by governments of a number of States was conducted. the modeling method is used to develop recommendations.

The research is based on a systematic approach and implementation of the Evidence-based policy principle:

- Desk research *(working with open databases)*;
- event analysis of event series on the government's measures taken during the pandemic;
-semi-structured expert interview *(30 experts-representatives of Central state bodies and local Executive bodies, small and medium-sized businesses, NGOs)*;
- mass survey of the population *(online survey)* for a target sample using the «snowballtechnology», ototal capacity-1700 people in the country *(regional coverage)*;
- methods of economic and mathematical modeling *(rank correlation analysis with verification of the statistical significance of the results on theSpearman, hierarchical cluster analysis, and variance analysis)*.

The study was performed using the application software package SPSS, Statistica, Power BI.

Novelty: The study was conducted independently by the project team using scientific methods of analysis, the results of the study are reliable, the conclusions are logically justified. The novelty of the research is characterized by the complexity of tasks that are being studied for the first time. It is determined by the objective needs of developing an anti-crisis strategy of Kazakhstan in the context of a pandemic.

Results of the work:

- a snapshot of public opinion was obtained based on the results of a mass and expert survey on the public's perception of the assessment of the effectiveness of public administration during a pandemic;
- a comparative analysis of the measures taken by governments during the pandemic was carried out;
- the analysis of the impact of measures taken by the state in the context of a pandemic on the activities of economic entities is performed;
- a cross section of public opinion was obtained based on the results of a mass and expert survey on the company's assessment of the effectiveness of public administration during the pandemic;
- an assessment of the effectiveness of measures taken in Kazakhstan in the context of a pandemic was made (*based on an analysis of data from a population survey and an expert interview)*;
- development of a set of recommendations for public administration in the crisis and post-crisis recovery period.

DEFINITIONS

The following terms, abbreviations and definitions are used in this report:

Adaptive efficiency of society	The ability to respond to changes in the external environment and create productive, honest and stable institutions, and if necessary, replace them with new ones
Adaptive efficiency of public administration	Public administration to adequately respond to changes in the external environment
Infodemia	An overabundance of online and offline information of an unreliable nature for the purpose of spreading false information
Conflict-prone	disagreements, unmet expectations, tensions caused by the actions of various social communities or political leaders
Lockdown	A situation in which people are prohibited from freely entering and leaving a building or a certain area due to an emergency.
Open data	Data that is freely available and distributed on the Internet free of charge, the format of such data is machine-readable - it can be analyzed, compared and combined with other data from other sources
Social conflicts-prone	Aa set of tensions of a social, mental and socio-psychological nature, which, under certain conditions, can lead to conflicts in society
The strategy of large-scale lockdown	A ban on movement between regions and cities; a ban on leaving home; restrictions on the operation of institutions other than banks and shops; a focus on mass testing.
Focused lockdown strategy	A ban on movement outside the place of isolation for some social groups - those infected, with obvious symptoms or those who have been in contact with the infected; the ban on the work of educational and religious institutions; testing the entire chain of infected and voluntary testing.
Big data	Big data refers to structured and unstructured data of huge volumes and considerable variety that is efficiently processed by horizontally scalable software tools
Evidence-based policy	Evidence-based policy – government policy based on strictly established objective evidence.

ABBREVIATIONS

API	Application programming interface
AR	Artificial respiration
BA	Bundesagentur für Arbeit
BEEPS	The Business Environment and Enterprise Performance Survey
CCS	Central Communications Service
CCTV	China Central Television
CGB	Central government body
CIC	Commonwealth of Independent States
COVID-19	Coronavirus disease 2019
CPI	Corruption Perceptions Index
CVI	Coronavirus infection
DBK	Development Bank of Kazakhstan
EGDI	E-Government Development Index
EPI	Electronic Participation Index
EU	European Union
FB	Facebook
FDA	Food and Drug Administration
FRG	Federal Republic of Germany
GDP	Gross domestic product
GRICS	Governance Research Indicator Country Snapshot
HIF	Health insurance fund
HIV	Human immunodeficiency virus
EKR	East Kazakhstan Region
IDC	Interdepartmental Commission
IT	Information technology
KPMG	Global network of professional firms providing Audit, Tax and Advisory services
LEB	Local executive body
MCI	Monthly calculation index
MDDIAI	Ministry of Digital Development, Innovations and Aerospace Industry
MERS	Middle East respiratory syndrome coronavirus
MES	Ministry of education and science
MH	Ministry of Health
MIA	Ministry of Internal Affairs
MIPD	Ministry of information and public development
MLSPP	Ministry of Labor and Social Protection of Population
MNE	Ministry of national economy
MS Power BI	Microsoft Power (Business Intelligence)
NCE	National Chamber of Entrepreneurs
NGO	Nongovernmental organization
NKR	North Kazakhstan region
NPC	The National People's Congress
NSC	National security certificate
ODB	Open Data Barometer
OECD	Organization for economic cooperation and development
PRC	People's Republic of China
RK	Republic of Kazakhstan
RMAF	Results-Based Management Accountability Framework
RNA viruses	Virus containing ribonucleic acid

SA	South Africa
SAR	Special administrative region
SE	Emergency
SMB	Small and medium-sized businesses
SME	Small and medium-sized enterprises
SPSS	Software platform «Statistical Package for the Social Sciences»
UK	United Kingdom
UN	United Nations Organization
US	United States of America
USD	US dollar
VAT	Value added tax
VK	Russian social network VKontakte
WBES	The World Business Environment Survey
WGI	The Worldwide Governance Indicators
WKR	West Kazakhstan Region

INTRODUCTION

Relevance of the research.

The rapid spread of the coronavirus and the introduction of a state of emergency in many countries have brought issues of effective public administration to the fore. The pandemic was a catalyst for the transformation of the state apparatus, contributed to the rapid implementation of reforms in public administration, large-scale digitalization and revision of the human resource management system of the public service.

Common measures taken by governments around the world include switching to remote work, restrictions on movement, bans on public gatherings, funding for medical facilities, new forms of social security, contact tracing, and other measures to contain the spread of the virus. Despite the General trends that governments are taking, measures vary significantly, both in form and speed of response. These differences in strategies cause discussion, as politicians and the public face the question of the appropriateness of certain response actions, their effectiveness, timely acceleration or cancellation.

In this regard, it is necessary to conduct a comparative analysis of the measures taken by governments during the pandemic. To develop a package of anti-crisis and post-crisis measures for Kazakhstan based on the results of the analysis and assessment of the effectiveness of public administration during the pandemic.

The purpose of the study: to formulate the «Agenda» for Kazakhstan in the sphere of public administration in the crisis and post-crisis recovery period.

Object of research – strategies, government policies to combat the pandemic and economic recovery.

Objective of the study:

- comparative analysis of government responses to the pandemic, including economic support measures;
- analysis and generalization of approaches to measuring the effectiveness of measures taken in the context of a pandemic;
- assessment of the effectiveness of measures taken in Kazakhstan in the context of a pandemic *(based on the analysis of data from a population survey and expert interviews)*;
- analysis of the measures taken by the state in the context of a pandemic on the activities of economic entities;
- development of a set of recommendations for public administration in the crisis and post-crisis recovery period.

Chapter 1 provides an analysis of government support measures for a number of countries in the fight against the coronavirus pandemic. Experience in implementing state policy in the fight against the consequences of coronavirus infection of several states *(China, Turkey, Republic of Korea, Germany Italy, Spain, USA)* was studied. For analysis, government strategies are divided into large-scale *(maximum)* and focused *(medium-level)* lockdown strategies.

Chapter 2 analyzes and summarizes approaches to measuring the effectiveness of measures taken in the context of a pandemic. The results of event analysis,

correlation and regression analysis of assessing the effectiveness of government agencies and structures in Kazakhstan during the pandemic are presented. Using the method of cluster data analysis, the potential of public trust in public authorities was assessed. We also evaluated the effectiveness of government agencies through the prism of their openness and availability of databases.

An important part of the study is to assess the effectiveness of measures taken in Kazakhstan in the context of the pandemic, based on a set of indicators obtained from a sociological survey and a series of semi-structured expert interviews. The results of the survey and interviews can be considered one of the grounds for forming the «Agenda» in the crisis and post-crisis recovery period.

In Conclusion, the conclusions of the analysis of the actions of the world's States to combat the epidemic are formulated, and approaches to combating the new biological threat in the form of political, medical, administrative, economic, informational, social and digital measures are summarized. Based on these conclusions and approaches as well as the results of mass survey and experts' interview **recommendations** are given for public administration in the crisis and post-crisis recovery period in Kazakhstan.

In **Appendices** the program of sociological research «Public administration in the context of a pandemic», questionnaire of the mass survey and expert interview guide are included.

Research methods. To study and summarize government approaches in the context of a pandemic, a comparative analysis of measures taken by governments of a number of States was conducted. the modeling method is used to develop recommendations.

The research is based on a systematic approach and implementation of the Evidence-based policy principle:

- Desk research *(working with open databases)*;
- event analysis of event series on the government's measures taken during the pandemic;
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- methods of economic and mathematical modeling *(rank correlation analysis with verification of the statistical significance of the results on theSpearman, hierarchical cluster analysis, and variance analysis)*.

The study was performed using the application software package SPSS, Statistica, Power BI.

The information base includes strategic documents, regulatory legal acts of the Republic of Kazakhstan, foreign countries, materials of international organizations, rating agencies, statistical data, analytical and scientific publications.

The report consists of an introduction, 2 chapters, conclusion, list of sources used, and appendices.

1. STRATEGIES OF GOVERNMENTS IN THE CONTEXT OF A PANDEMIC

The rapid spread of coronavirus infection in the shortest possible time has led to an aggravation of the emergency situation in the health sector, the economy and is testing the effectiveness of the functioning of the state institution in general. In comparison with previous crises, which were, mainly, related to problems in the financial markets, economic cycles or "bubbles" in the real estate market , the economic downturn in 2020 is largely characterized by the result of political decisions of governments, reflecting an attempt to contain the spread of the epidemic and reduce the potential number of its victims.

As of October 30, 2020, the number of deaths worldwide from COVID-19 has exceeded 1.2 million people, with virtually no countries that have not been affected by this unprecedented crisis [1,2]. Today, different countries are coping with the first wave of the epidemic with varying degrees of success – the primary sources of livelihood have been severely affected, which has negated the small progress in development made in recent years. Not only semi-peripheral and peripheral countries, but also the most developed and advanced countries can barely cope with the negative impact of coronavirus. Poor countries, along with the destabilization of the health system, mass unemployment, and low levels of basic services, are already beginning to face a food collapse. The issue of the continued existence of the most vulnerable segments of the population, the disabled, the elderly, children, labor migrants, refugees has become acute.

"The pandemic and shutdown of advanced economies could push as many as 60 million people into extreme poverty – erasing much of the recent progress made in poverty alleviation," said World Bank Group President [3]. The Sustainable Development Goals Report 2020 states that 71 million people will fall back into extreme poverty. Most of these people work in the informal economy, where global incomes fell by 60% in the first months of the crisis. It is also estimated that in 2020, the volume of world trade may decrease by up to 32%, foreign direct investment – up to 40%, and remittances to low-and middle-income countries – up to 20% [4].

In general, governments around the world have been extremely pressed for time to **quickly develop responses to the COVID-19 pandemic** and have typically used **reduced administrative procedures** and new coordination forms to urgently enact a number of crisis-related regulations. A number of countries have refocused human resources towards developing an immediate response to the crisis and abandoned regulatory management tools and practices, including regulatory oversight functions.

Governing structures have tried to move **to adjust to regulatory practices** to reduce the burden on regulated entities, including the flexibility of the rules and compliance e regulatory requirements, especially in relation to the supply of essential commodities. Outdated regulatory measures have been canceled if they have not been directed to the provision of a potentially life-saving services, testing e or providing e PPE.

The new situation required the **urgent and very swift adoption of new laws** *(outside the timeframe of normal constitutional procedures)* in order to **legitimize the government's** response to the **crisis** and to take an extraordinary response to the epidemic.

For example, because of the specificity of the political system in ***China***, the Chinese authorities have not made great political effort to simultaneously close the first Wuhan City with population of 11 million people, then the whole province, where the city is located, and then – and the whole country with 1.4 billion inhabitants. The vertical of power built and honed in China made it possible to mobilize the forces and funds of the state in a short time to mitigate the consequences of CVI in Hubei province and to carry out preventive measures throughout the country. Due to the strong central authority and unity of command, the continuity of supply of the necessary resources and medical personnel to the centers of infection was ensured. Timely response to the emergency situation has also contributed to a psychological readiness of residents of China to extreme measures by the state, living under the existing hard political regime.

But this is possible only in China, so other countries with more liberal political systems had to **find a legitimate political and legal compromise** between the need for tough restrictive measures, improving the security of the population and ensuring human rights.

In the ***UK***, in March 2020, the government passed emergency legislation *(the Coronavirus Act)*, as well as 70 bylaws and a number of out-of-court changes. Legislative changes have given police, immigration and health officials new powers to detain potentially infectious individuals, and to prohibit and restrict gatherings and public events in order to contain the spread of COVID-19. The rules for public and health services have been changed to allow for optimized approaches *(for example, to medical prescribing)*; and temporary relaxation of competition laws in certain areas *(eg., ensuring better coordination of food supplies)* and relaxation of vehicle testing regulations. Most of the provisions of the Law expire in two years, although this period can be extended by six months or reduced.

In ***France,*** parliament passed a state of emergency law to tackle the COVID-19 epidemic in March 2020, declaring a health emergency in the country to counter the spread of the coronavirus. This gives the government great powers to control the spread of the disease. The provisions of the law allowed the French government to restrict the freedom of movement of people and to administer its decree of requisitioning certain goods and services for two months. The law also empowers the government to take special economic measures to support French companies hardest hit by the outbreak. It was originally planned that the state of emergency would last two months from the date of its adoption, although in May 2020, parliament passed a law extending the state of emergency until July 2020. At the end of October 2020, a lockdown was reintroduced in the country.

In ***the Netherlands,*** the response consists of a number of legislative and non-legislative measures and more decentralized approach. This is one of the countries that did not impose a state of emergency and did not apply special legislative fast-track procedures. Instead, the government relied on the use of existing flexibilities in

the lawmaking process *(eg., high-urgency interagency draft legislation, shortened consultation periods, etc.)* and the ability to enact regional emergency rules. Mayors of major cities in these regions are empowered to enact these states of emergency. However, the regions agreed on the vast majority of provisions with the participation of the central government.

The response to the epidemic has highlighted **regulatory problems at almost all stages**.

Governments around the world have faced a particularly difficult choice of compromises when developing force majeure rules for the population, for example: what restrictions should states impose on work, play and freedom of movement. When should they open for business? How open should they be and for how long?

The COVID-19 crisis has made the need for well-thought-out, evidence-based and strictly enforced regulations particularly acute. Governments around the world have been forced to develop emergency regulatory responses in a complex context where the clinical picture of the virus has not been fully understood and in the absence of a reliable database of the effectiveness of containment measures. Each state acted at its own discretion and based on the possibilities.

This chapter provides an overview of government strategies of a number of countries in the fight against the coronavirus pandemic. Both positive and "unsuccessful" *(from the point of view of morbidity, mortality and recovery statistics)* the experience of implementing state policy in combating the consequences of coronavirus infection has been studied.

It should be emphasized that while country leaders are trying to contain the spread and strengthening of coronavirus, the collection of statistics on the incidence of diseases in the field is subject to serious interruptions. Consequently, national governments are somewhat limited in their ability to provide accurate monthly and quarterly statistical reports. In this regard, it can be assumed that the data from open Internet resources *(in particular, the online map of COVID-19[1] distribution and the Corona Tracker platform created by experts at Johns Hopkins University[2])* show approximate statistics of morbidity and mortality.

To date, the highest mortality rate from coronavirus, according to data from Johns Hopkins University and the Corona Tracker platform *(figure 1)*, is observed ***in the United States***.

This is most likely due to a number of reasons, including:

– the country's leadership initially did not take the threat from the coronavirus seriously – it delayed mass testing, with the calculation of the real number of infected, therefore, by the beginning of the outbreak of infection, there was not enough test systems, medical masks, ventilators and other equipment necessary for rapid response;

– lack of a centralized policy to contain and counter COVID-19-States implemented policies to combat the epidemic on their own.

– lack of strict restrictions on the mobility of the population.

– private healthcare system and bureaucratization of medical institutions that restrict access to rapid response to rapidly spreading COVID-19 infections.

– the high mortality rate was particularly pronounced among low-income, illegal migrants, refugees who did not have health insurance and, consequently, were unable to receive qualified assistance [5].

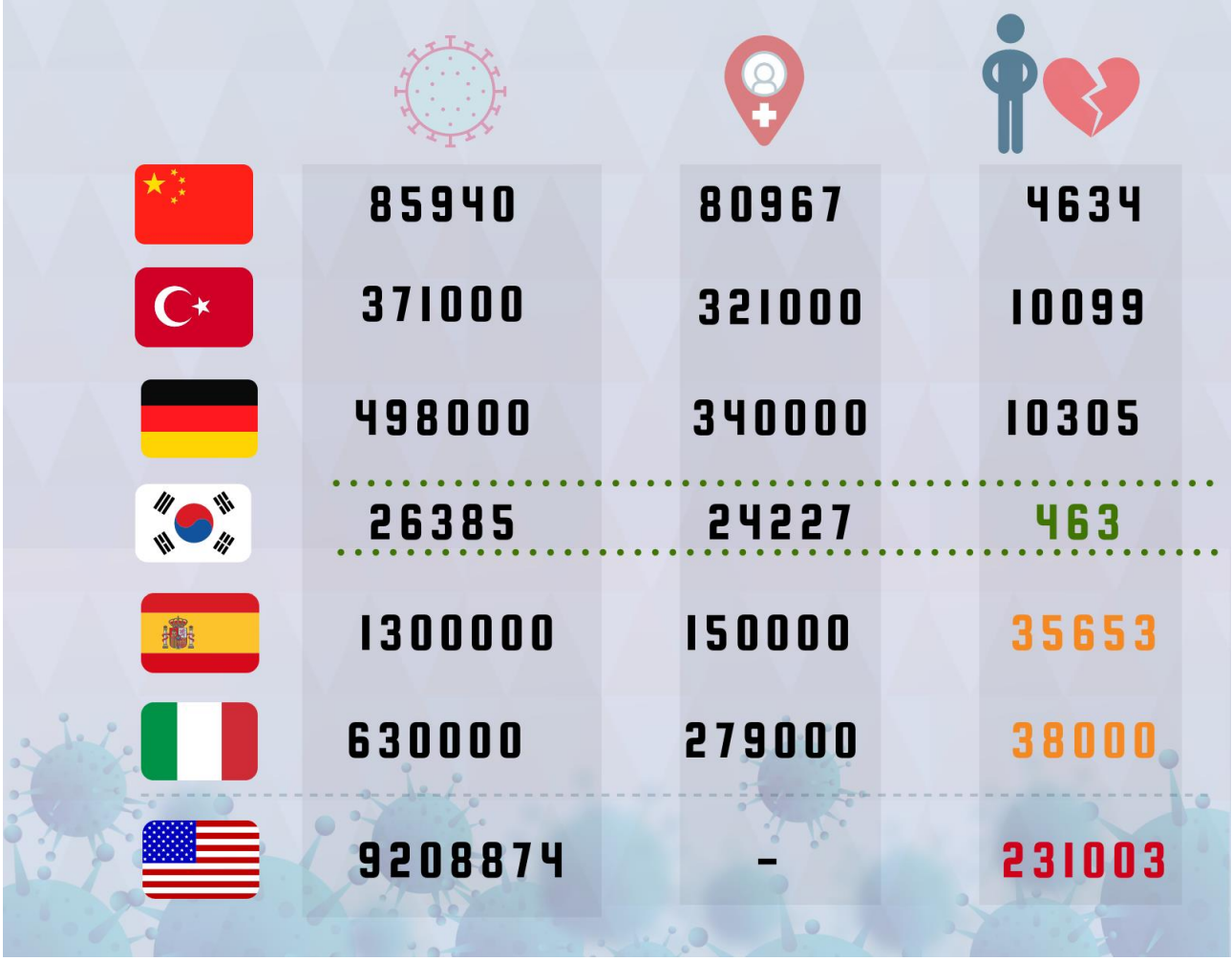


Figure 1. COVID-19 mortality rate by country (as of Oct. 30, 2020 [1,2])

Moreover, the number of people who died from coronavirus in the United States was determined without counting the deaths in nursing homes, in fact, the actual death toll from COVID-19 in the country could be double that. For example, only in New York City, about 30,000 elderly people living in nursing homes have died from COVID-19. With a more accurate count of coronavirus deaths in nursing homes, the total number of victims may rise to 60,000 [6].

In China and South Korea, the mortality rate was high only in the early stages of the coronavirus outbreak, after which it declined. For example, in China, the mortality rate from January 1-10, 2020 was 17%, and in the period January 23 – February 11 – 2.3% [7]. In these countries, large-scale testing was used even for people who did not show symptoms. All those who came into contact with the infected person were also strictly monitored.

As a result of the first wave of coronavirus, ***Italy*** and ***Spain*** also showed a high mortality rate. In Italy, as in the United States, regional authorities have introduced preventive measures in the fight against coronavirus in different ways. For example, the situation in the Veneto region after rapid mass testing and restrictions on

movement was much better than in the neighboring region of Lombardy, where such measures were not taken.

The strategies of the governments of these countries during the pandemic are discussed below. For analysis, government strategies are divided into large-scale *(maximum)* and focused *(medium-level)* lockdown strategies.

The large-scale *(maximum)* **lockdown strategy** provides for: a ban on movement between regions and cities; a ban on leaving home; restrictions on the operation of institutions other than banks and stores; and a focus on mass testing. A similar model of quarantine regime has been introduced in a number of countries, such as Germany, Spain, Italy, China, Turkey, and the United States.

A focused *(medium-level)* **lockdown strategy** involves: banning movement outside the isolation area for certain social groups-infected people with obvious symptoms or people who have come into contact with infected people; banning the work of educational and religious institutions; testing the entire chain of infected people and voluntary testing. This model was chosen, for example, by South Korea.

1.1 Positive experience of government strategies during the pandemic

People's Republic of China – large-scale (maximum) lockdown strategy

Support measures taken by the Chinese government.

At the first stages of the virus spread, along with the introduction of restrictive measures of a recommendatory nature, mass testing of people was carried out. Not only those citizens who had symptoms of the virus were subject to testing, but also those who had a high probability of contacting it. Most of the testing was funded by the state. Repeated tests were performed in 2-3 days. The temperature was measured not only in hospitals, at the entrance to buildings, but also on the street. In some cities, temperature measurement was practiced using drones.

Quarantine was imposed in all cities of Hubei province without exception. Residents of the province were forbidden to leave their homes, and everything they needed was delivered by drones or volunteers. The movements and contacts of citizens in other regions who were placed under strict quarantine were tracked using an app in their phones.

It should be noted that the legislation of the People's Republic of China provides for severe penalties up to the death penalty for those who during the pandemic will be caught in corruption, the production and distribution of counterfeit medicines, malicious infection of other citizens with the virus and causing serious harm to medical workers [8].

Chinese law provides penalties for 21 offences related to the outbreak of a new type of coronavirus, four of which may result in capital punishment:

- patients with confirmed infection by coronavirus, as well as carriers of the pathogen, who refuse to quarantine and treatment or violate the quarantine regime spontaneously, and visit public places and transport;

- those who during the epidemic will cause deliberate harm to medical workers with serious consequences or intentionally damage the protective clothing of the medical staff, spit into the medical worker, as a result of which the latter will be infected with coronavirus;

- those who abuse authority to embezzle, steal, defraud or otherwise misappropriate assets and funds intended for the prevention and control of disasters, including infectious epidemics;

- as well as those in charge of the production and sale of medicines if they produce and market counterfeit or substandard drugs for the treatment and prevention of infectious diseases [8].

Those who refuse to pass quarantine control when entering the country can be fined 700 USD [9].

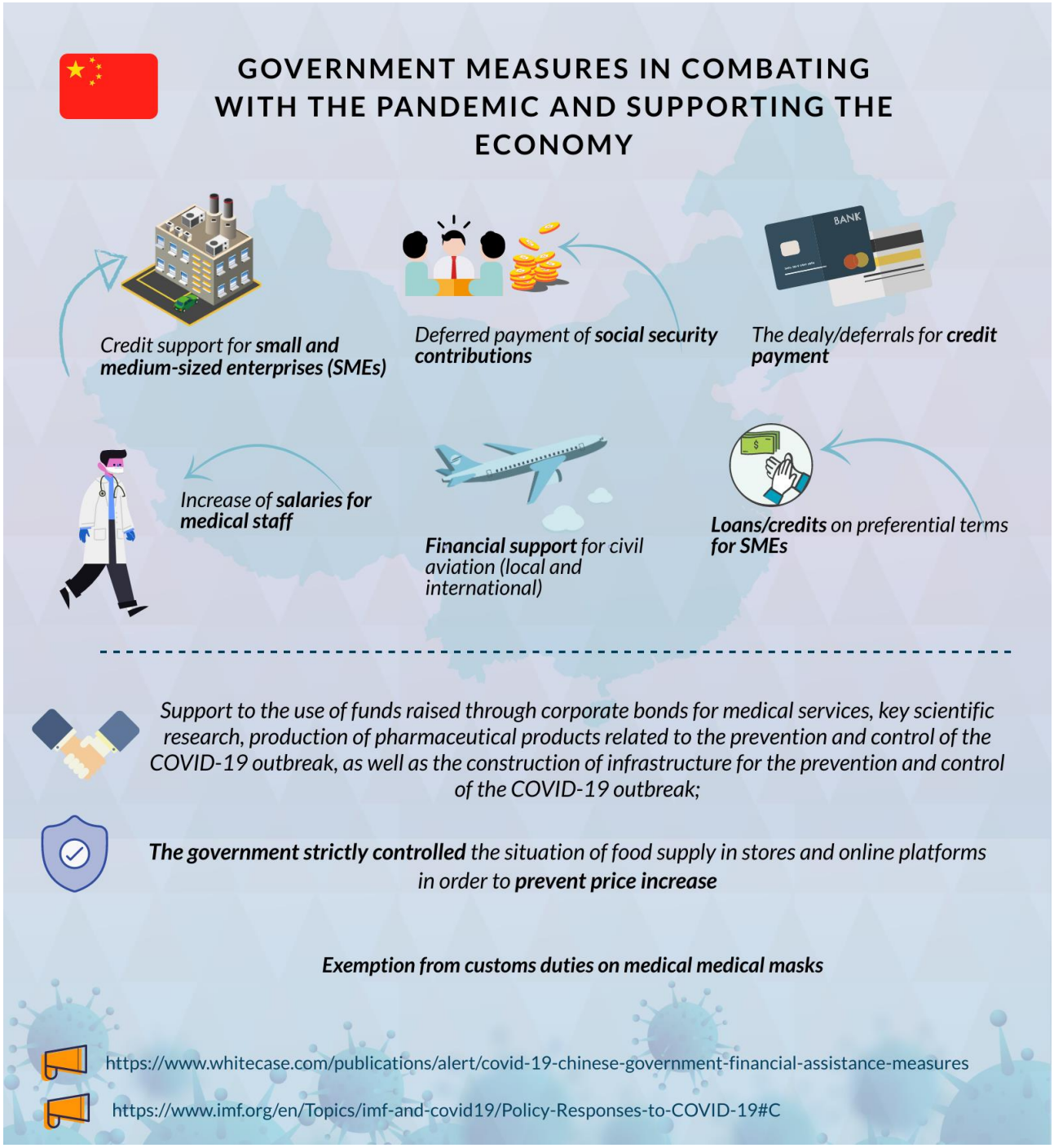


Figure 2. Support measures taken by the Chinese government to combat the pandemic and support the economy

Support measures for citizens:

- increase the production of personal protective equipment and basic necessities, as well as their distribution to citizens free of charge;
- allocation of 15 billion USD to increase salaries for medical staff, and installation of the latest equipment in hospitals, including 100% installation of artificial lung ventilation devices [10];
- production of medical equipment;
- accelerated provision of unemployment benefits, as well as for migrant workers;

- in Hubei province, local authorities paid residents up to 1,400 USD if they reported the disease in advance and it was later confirmed; those who did not have the coronavirus were paid 150 USD [11];

- the administration of the Hong Kong administrative region paid a lump sum of 1,200 USD to local citizens aged 18 and over *(this is almost 7 million people)*; in total, Hong Kong spent us 15 billion USD [12].

- tax breaks and waivers for social security contributions;

- monthly payment is compensated for those who live in state-owned homes.

Key Support Measures for Business:

- the latest tools to support lending to small and medium-sized businesses *(SMEs)* were introduced, including a zero-percent "Financing for lending" scheme;

- from local banks – increase in the target growth rate of lending to large banks for SMEs from 30% to 40%;

- introduction of deferred loan payments with an extension of the deadline until the end of March 2021;

- reducing restrictions on the size of loans for online lending.

Thus, the People's Republic of China is the first country to encounter the new coronavirus, and the first country to be able to localize its spread. The state took over the management and control of all processes, institutions, even private enterprises during the pandemic. But since the mobilization economy could not function for a long time, the Chinese authorities gradually removed the harsh measures and returned to the market system.

Turkish Republic – large-scale** (maximum) **lockdown strategy

As of October 30 this year, COVID-19 coronavirus disease has been confirmed in Turkey 371 000 people. 321 000 people recovered and 10 099 people died [2].

According to the world Bank, Turkey's state policy in the fight against COVID-19 has become quite successful, due to the operational and systemic measures taken [14]. Short-term solutions to contain and spread the virus have been particularly effective, including:

- serious economic support was provided, both for socially vulnerable segments of the population and businesses;

- measures for public distancing were quickly introduced;

- limited mobility;

- improved mechanisms of the health system.

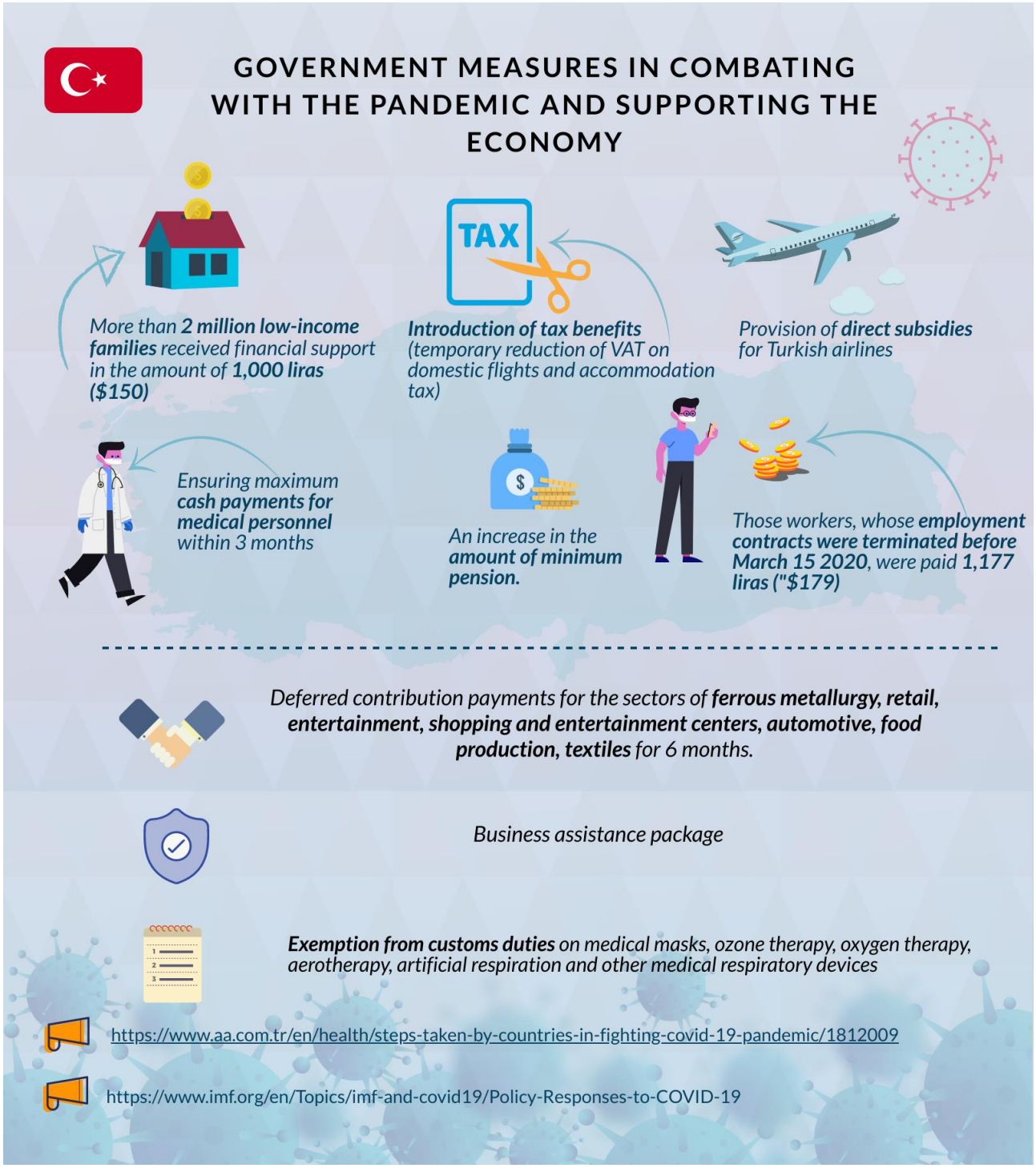


Figure 3. Support measures taken by the Turkish government to combat the pandemic and support the economy

In addition, the Turkish leadership considered it acceptable to use a targeted approach, rather than large-scale isolation methods. Such targeted support became evident when Turkey began to reallocate the budget, taking into account the priority of solving key problems of ensuring public health and business development.

Turkey is one of the countries that has realized in a timely manner the need for state support for business by reducing taxes and deferring repayment of loans, income tax and corporate taxes for those companies that are in a state of emergency. All these measures were implemented only on the condition that these companies will not terminate employment contracts with the employee for 3 months. Moreover, in such

cases, these companies were provided with additional state support in the amount of 10 to 100 million liras. The package of assistance to Turkish businesses called "Shield of economic stability" provided for the allocation of 600 billion Turkish liras. In total, until the end of June 2020, Turkey has allocated about 498 billion Turkish liras to fight COVID-19. In other words, about 10.8% of GDP, or 72 billion USD [15].

However, it is worth noting that not all sectors of the country successfully coped with the epidemiological situation – if the manufacturing industry was not affected during the 3 months of quarantine, the level of profitability of the service sector has significantly decreased during this time.

The following restrictive measures were introduced during the pandemic:

- the curfew was strictly enforced for persons over 65 years of age, as well as for those under 20 years of age;

- internal travel was carried out only with the permission of the provincial Governor's administration.

Main measures in the framework of social assistance and business support [16]*:*

- those workers whose employment contracts were terminated before March 15, 2020, were paid 1,177 liras by the state *(≈179 USD)*;

- Ban of Work Termination Extended for 3 Months.

- increase the amount of funds provided to social assistance and solidarity funds to 180 million liras *(26 million USD)* with additional investment resources in these funds to the amount of 353 million liras *(about 51 million USD)*;

- tax incentives *(temporary reduction of VAT on domestic flights and accommodation tax)*.

- the strengthening of employment protection at the expense of weakening some short rules;

- reduction of deferred tax payments for affected industries, in particular the tourism industry, as well as for people over 65 years of age with confirmed chronic diseases;

- ensuring maximum cash payments for medical personnel within 3 months;

- exemption from customs duties on medical masks, ozone therapy, oxygen therapy, aerotherapy, artificial respiration and other medical respiratory devices;

- assistance in the financing of the inventory for importers;

- deferred contributions for the sectors of ferrous metallurgy, retail, entertainment, shopping and entertainment centers, automotive, food production, textiles for 6 months;

- providing direct subsidies for Turkish airlines.

In terms of humanitarian aid, Turkey has sent medical equipment to 30 countries around the world. For example, to countries such as the United Kingdom, Spain, Italy, and the Balkan region. More than 25,000 Turkish citizens from 59 countries were returned due to entry bans.

According to optimistic forecasts, economic growth in Turkey will recover by Q4 2020, and by the beginning of 2021, according to “Fitch” ratings [17], growth will

be 4.5%. According to the world Bank, the country's economy will shrink by almost 4% by the end of 2020 but will gradually recover in 2021 [13].

Note that before the beginning of the epidemiological situation, Turkey's economic indicators were 6%. According to experts, the country's net exports will face a certain decline, which will significantly slow down GDP growth until 2021. And an equally important aspect for the Turkish economy is the current account deficit, which can become a serious problem in the face of possible new waves of coronavirus. Economists suggest that some additional boost to the economy is possible if the fiscal package is properly distributed in order to increase the credit capacity of banks through the "Shield of economic stability" of Turkey.

Republic of Korea – focused** (mid-level) **lockdown strategy

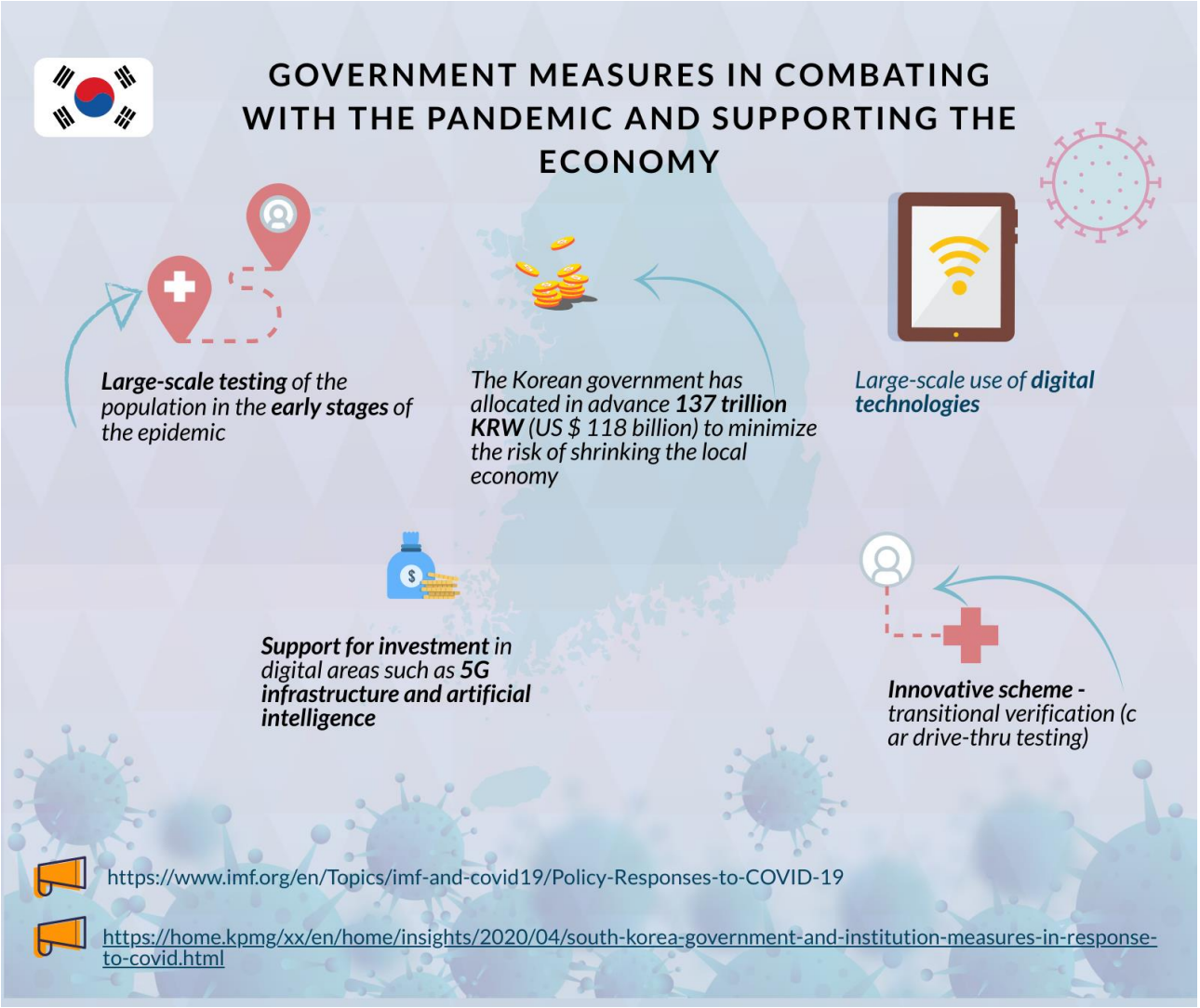


Figure 4.Support measures taken by the South Korea government to combat the pandemic and support the economy

As of October 30, this year, COVID-19 coronavirus disease has been confirmed in South Korea 26 385 people. People recovered 24 227 people and died 463 people [2].

Seoul first reported confirmed cases of coronavirus infection in their country at the end of January 2020. The leadership of South Korea, like China, in the early stages of the epidemic began to introduce large-scale testing of the population and tracking those who came into contact with the infected.

Key measures of state support:

- support and expansion of employment;
- support for low-income families;
- development of digital and green industries;
- financial support for enterprises;
- extended lending to small and medium-sized enterprises, large and medium-sized firms.

In total costs of 6.3 trillion won are included in the extra budget 2020. By 2022 g ode be invested in total 67.7 trillion won *(accumulated),* and 2025 g ode be invested in total 160 trillion won *(114.1 trillion won accumulated cost of investment)* [2]. A total of 1.9 million jobs are expected to be created.

In general, South Korea, in comparison with other countries, was able to prevent a major outbreak of the epidemic without closing its borders, without introducing a complete blockade and without paralyzing its economy. The country had a complex pandemic plan, developed after past experience, that included rapid testing, strict contact tracing, patient isolation and consistent government communication to ensure broad collaboration.

South Korea has been particularly adept at using technological tools, including camera footage, smartphones, location data and credit card records, to track and limit the spread of the infection. The government also announced a policy of "zero tolerance" and «maximum penalties» for people who violate laws created to combat coronavirus, for example, from wearing a mask to violating quarantine [18]. The overwhelming majority of the public was ready to cooperate with the state; there have been no mask protests in South Korea.

The world took notice of the success of South Korea, which was dubbed "K-Quarantine" like "K-pop". South Korea's infectious disease physician Jung Eun-Ken, head of the Korean Agency for Disease Control and Prevention, was included in the list of 100 most influential people of the magazine “TIME”, 2020. The Wall Street Journal writes about this: “South Korea stopped transmission of the virus better than any other wealthy country in the early months of the pandemic. According to a recent report by the United Nations-affiliated Research Network, it was about twice as effective as the US and UK at preventing the spread of infection to others. South Korea's economy is expected to contract just 0.8% this year, which is the best forecast by the Organization for Economic Cooperation and Development *(OECD)* for member countries [18].

In South Korea, the second wave of the spread of coronavirus took place in mid-August. The number of new infections, which fell from 900 to 10 per day from late February to late April, rose again to three-digit numbers. The virus spread, mainly, in the churches and in large anti-government rallies. But the leadership

reacted quickly and harshly, tightening restrictions again, banning church gatherings and mass street protests, and closing nightclubs and bars.

The second wave revived the urgency of vaccine production. The government simultaneously promotes the work of local companies and works with them internationally. Several South Korean companies are currently developing vaccines against Covid-19, all of which are already in clinical trials or are set to begin before the end of the year. In a video message to the UN General Assembly, President Moon called for a regional infectious disease and public health initiative involving China, Japan, Mongolia and North Korea to tackle the pandemic.

Federal Republic of Germany – large-scale** (maximum) **lockdown strategy

As of October 30 this year, COVID-19 coronavirus disease has been confirmed in Germany in more than 498 000 people. 340 000 people recovered and 10 305 people died [2].

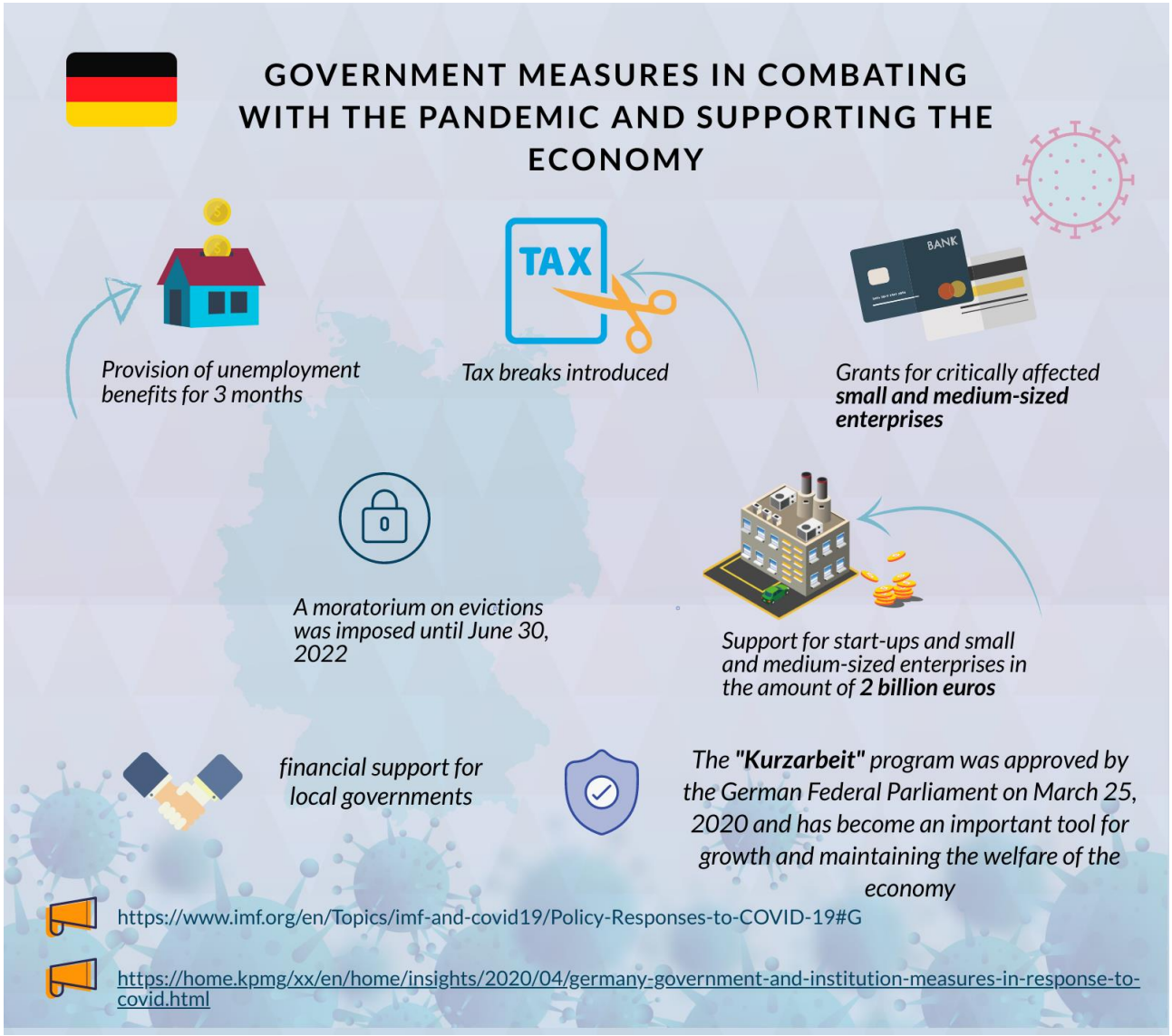


Figure 5. German government measures to combat the pandemic

During the first wave of COVID-19 spread, the Federal Government adopted two budgets: € 156 billion *(4.9% of its own GDP)* in March and € 130 billion *(4% of its own GDP)* in June with a debt of about € 218 billion to finance it [19].

Key measures to support citizens [20, 21, 22]:

- maintaining employment and income levels;
- access to benefits under the reduced working hours compensation program was facilitated;
- provision of unemployment benefits within 3 months;
- payment of compensation for persons unable to work due to quarantine / COVID -19 disease;
- a moratorium on evictions was introduced until June 30, 2022;
- introduced tax breaks;
- the requirements for receiving child benefits for low-income families have been reduced;
- payment to citizens in the amount of up to 67% of the lost income, who are forced to stay at home with their children due to the closure of schools;
- payment of a one-time bonus in the amount of 100 euros to employees who provide care for the elderly, etc.

The term "Kurzarbeit" is translated as "reduced working time' or "part-time work". But it should be emphasized that the German model of state support "Kurzarbeit" is significantly different from what is understood in general as "part-time work" [23].

At the end of April 2020, 751 thousand companies applied to participate in the Kurzarbeit program – which is about 1/3 of all enterprises registered in the country that pay contributions to social insurance funds and are eligible to use the services of this program. According to the Federal labor Agency *(Bundesagentur für Arbeit, BA)*, 10.14 million people are registered to participate. It is obvious that this program is very relevant and in demand in society. It is necessary to highlight the fact that Kurzarbeit has already tested its effectiveness during the global financial and economic crisis of 2008-2009 and has become known in the world as the largest anti-crisis program in the history of Germany [23].

The main content of this model is that the state assumes the payment of salaries to employees of the company for the period when it is temporarily unable to do it itself due to the crisis in order to avoid mass layoffs. This model of state aid contributes to solving two important tasks for the economy.

First, companies are helped to retain qualified personnel at the time of partial or even complete downtime and avoid mass layoffs. This is extremely important, for example, for medium-sized and small highly specialized engineering companies that are very typical of Germany.

Secondly, employees of enterprises are helped to maintain regular income at an acceptable level. After all, if they have to apply for unemployment benefits, it may cost the state even more.

In practice, the payment of compensation is as follows: as long as there is a job, the employee is paid by the company. If orders end *(in the industry)* or the business

has stopped *(for example, due to quarantine)*, the state compensates for 60% of the previous net earnings, and in the presence of a child – 67% [23].

In August 2020, an ode to the coalition government of Germany Commission decided that the employees who are forced to because of the pandemic on a reduced work schedule, will be able to receive compensation for it for 24 months.

Thus, many experts agree that as a result of the first wave of coronavirus, Germany coped with the crisis quite well, especially given the funds invested in the fight against the spread of the virus. But despite this, there is also criticism regarding not so strict approaches to social distancing and the fact that testing in the country was carried out not by state, but by private laboratories at high prices. In addition, the criticism concerned the issue of the state's lack of responsiveness in relation to tourists, migrants who arrived from dangerous countries-zones of the spread of COVID-19 *(for example, from Austria, Italy)*. There have also been reports of shortages of protective gear, contact tracing problems and huge demand for tests in regions such as North Rhine-Westphalia and Bavaria.

According to the statement of the Federal Minister of Economy and Energy P.Altmeier, the policy applied against the pandemic was called successful, and the measures – "tough and difficult, but necessary" [24]. The Ministry's report indicates that Germany has begun to recover from the first wave of coronavirus since September 1, 2020. In this sense, Germany has been able to save the public health system in a way that not only allows it to be better prepared for the next wave, but also allows policies to be more targeted and effective at both the Federal and regional levels.

Mr. Altmaier does not deny the fact that the negative economic consequences will be felt in the long term, especially considering this in the context of the global crisis, which hit the world economy harder than 10 years ago.

There are still some concerns about the projected decline in the country's GDP to 5.8%, despite even worse forecasts made at the beginning of April at 6.3%. By comparison, during the 2009 financial crisis, Germany experienced a decline in GDP of about 5.7%. As for the year 2021 for Germany, it is expected to have optimistic forecasts. The country is likely to recover from GDP growth of 4.4%, but this growth will also depend on trade agreements with the United States, especially in connection with the question of whether German exports will grow in the future, as exports fell this year to 12,1%, and imports – to 8,1% [24].

Another report from the Institute for economic research expects Germany to recover in 2021 with economic growth of more than 10% if the economic recovery lasts until the beginning of 2021 for about 5 months, if restrictions are gradually lifted and there are no lockdowns. However, if it takes longer, say about 16 months, the economy will fall by 5.7%, and by 9.3% in 2020 [25]. Thus, at the end of the recovery period, the German economy will last longer than expected, and a full recovery is expected by 2022. This was aggregated from the sum of prospective studies conducted with 9,000 German companies.

1.2 Experience of "unsuccessful" strategies[1] during a pandemic

Italian Republic – large-scale** (maximum) **lockdown strategy

As of October 30, this year, COVID-19 coronavirus disease has been confirmed in Italy 630 000 people. People recovered 279 000 and 38 000 people died [2].

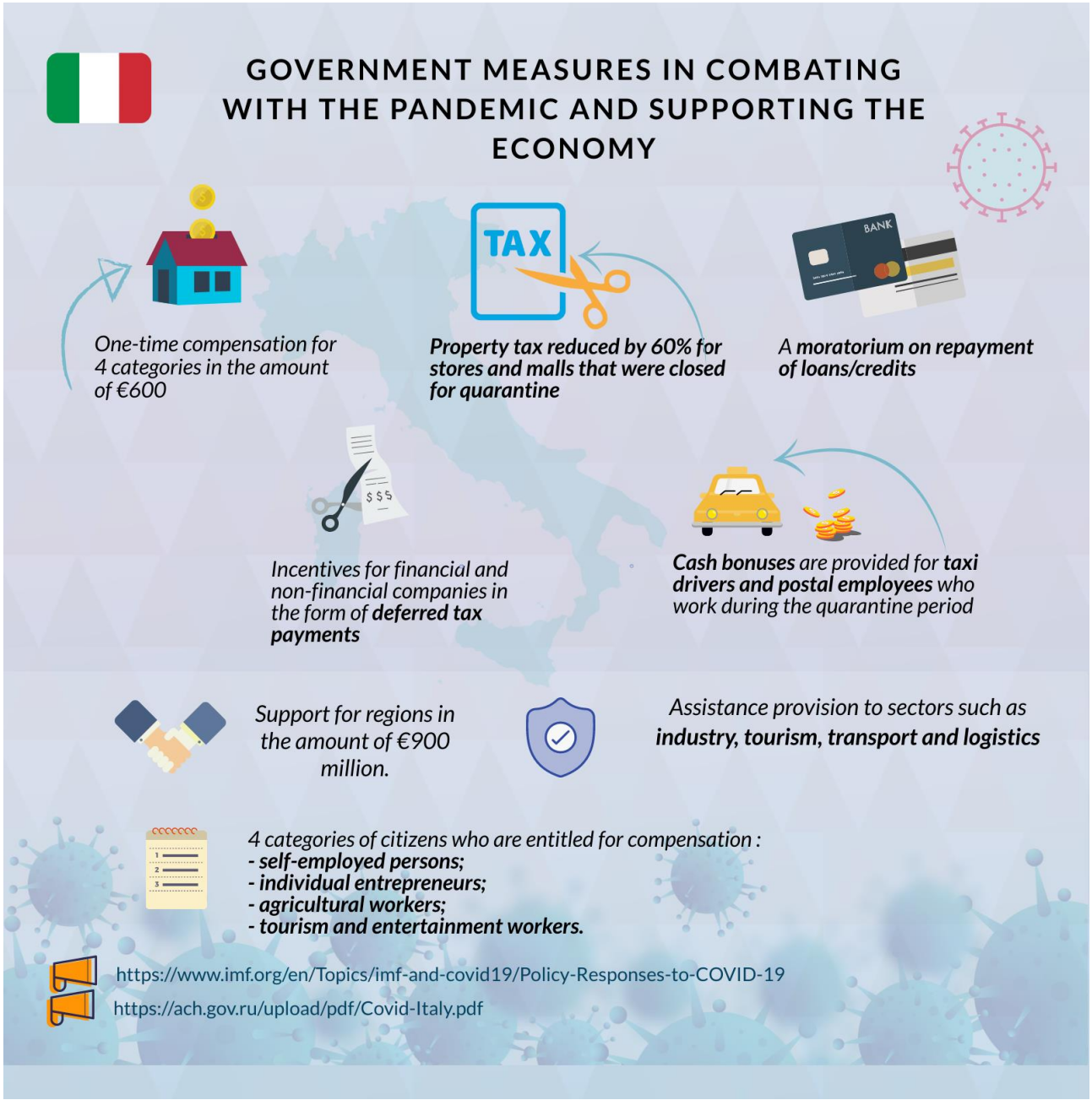


Figure 6. Support measures taken by the Italian government to combat the pandemic and support the economy

In Italy, the state of emergency was introduced on January 31, 2020 for a period of 6 months. And on March 9, the quarantine regime was extended with stricter and more decisive measures to combat the spread of the virus. All northern

[1] Conditionally in the sense that this refers to countries whose governments have failed to cope rapidly with the rise in morbidity and mortality during the pandemic.

regions of Lombardy were isolated, as well as 14 northern provinces of other regions [26]. Restrictive measures included restrictions on movement, bans on public events, closings of schools and public spaces, and restrictions on restaurants and bars.

It was forbidden to leave the house, except for going to a nearby store *(while only one family member went out every 2-3 days)*, to the pharmacy, clinic, to work, walking the dog *(only near the house and for one person)*, classes sports *(only in solitude and in compliance with the passers-by a distance of 1 m)*. Violation of the quarantine regime is subject to a fine ranging 206 euros. The authorities of Lombardy, Bologna and others have raised the fine to 5,000 euros. According to the court decision, the fine can be changed to imprisonment up to 3 months [27].

The first wave of the nationwide quarantine expired on May 4. After an increase in the number of confirmed cases of the disease that began in early August, the government reintroduced some containment measures, including the closure of nightclubs and restrictions on the capacity of cultural sites.

In terms of *support measures for citizens,* the Italian government has designated 4 categories of citizens [29], who are entitled to compensation due to the pandemic:

- self-employed persons.
- individual entrepreneurs.
- agricultural workers.
- workers in tourism and entertainment.

The National Social Security Institute paid a one-time compensation to these categories in the amount of 600 euros, tax-free. Non-staff and contract workers are also compensated.

For those workers who work in the private sector, the quarantine period is equal to the period spent on sick leave, and the employer's expenses will be reimbursed by the government [29].

For public and private workers with income below 40,000 euros, a one-time compensation of 100 euros was allocated for everyone who continued to work at their workplace [30].

One of the key measures to support citizens was the temporary suspension of payments on mortgage loans for those who buy housing for the first time, including for the self-employed, whose expenditure accounted for more than a third of their turnover in the last quarter.

For working parents with children under 12 years of age, paid *(50% of wages)* leave of up to 15 days to care for a child is provided. An alternative to parental leave is a nanny voucher of € 600 if both parents are working. If one or both parents are doctors, then the voucher is increased to 1000 euros. Unpaid leave is also granted to employees with children aged 12 to 16 [31].

Key Support Measures for Business [29]:

- a moratorium on loan repayment for some households and SMEs, including mortgage loans;
- government loan guarantees for all enterprises;
- deferred tax payments for financial and non-financial companies;
- the volume of the guarantee fund for SMEs increased to 100 billion euros;

Thus, some experts attributed the high mortality rate from coronavirus in Italy in the first wave of its spread to a noticeable increase in the number of elderly people, as well as to the fact that doctors did not have high-quality protocols for responding to coronavirus in a timely manner. In the areas most affected by the epidemic, the health care system was close to collapse. This, according to experts, was the result of many years of fragmentation of the system at the regional level, a decrease in funding, privatization and a reduction in technical and human resources. Today, it is believed that the peak of the epidemic in the country has passed, and the health care system is gradually entering a stable mode of operation.

Kingdom of Spain** – **large-scale** (maximum) **lockdown strategy

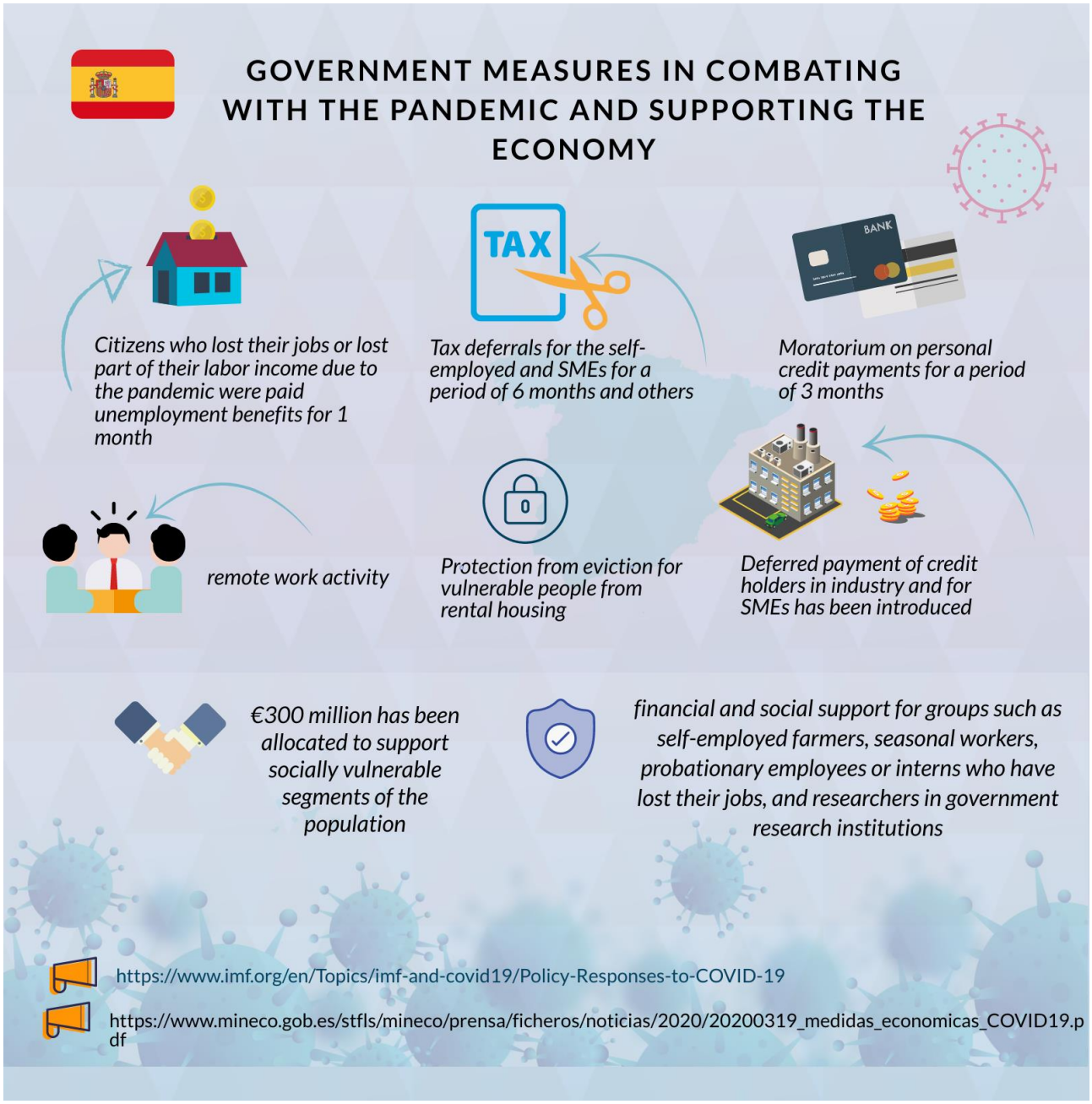


Figure 7. Support measures taken by the Spanish government to combat the pandemic and support the economy

As of October 30, 1.3 million people have been diagnosed with COVID-19 coronavirus in Spain. Recovered some 150 000 people and 35 639 people were victims of a pandemic [2].

On the entire territory of the state, the Spanish leadership introduced a national quarantine on March 14, 2020, which was then extended several times. Places of potential gathering of people were closed, mass events were prohibited, catering establishments were closed, with certain exceptions. Grocery stores, supermarkets, markets, medical institutions, pharmacies, train stations, airports, postal and courier services continue to operate. It should be noted that the number of air travel, rail, and shipping flights has been halved [32]. Also, movement within the country was limited, except for force majeure [33], it was allowed to leave the house for those who go to work, to the grocery store, pharmacy, as well as caring for the disabled, children and the elderly.

For violation of the quarantine regime, monetary fines ranging from 600 to 10.5 thousand euros, or criminal liability were provided. Severe punishments are justified by the fact that for a short period from the beginning of the introduction of the state of emergency, the Spanish police made more than 600 thousand protocols on its violation [34].

Key Measures to support citizens [35,36]:

- from mid-March 2020, enterprises have been recommended to organize work activities remotely; there was a practice of reducing working hours *(up to 100%)* for those employees who were caring for their sick relatives;
- Citizens who lost their jobs or lost part of their labor income due to the pandemic were paid unemployment benefits for 1 month;
- Infected persons were provided with payments due to temporary disability.
- 25 million euros were allocated to provide meals for children from low-income families.
- 300 million euros were allocated to support socially vulnerable groups of the population.
- introduced financial and social support for such groups of the population as self-employed farmers, seasonal workers, probationary employees who have lost their jobs, researchers in public research institutions.
- payments on mortgage loans were temporarily suspended for persons in difficult financial situations.
- a moratorium on payments on personal loans for a period of 3 months was introduced.
- protection against eviction of vulnerable persons from rental housing, etc.

Key Support Measures for Business [37]:

- a delay in payment of taxes was introduced for a period of six months;
- a special line of credit in the amount of euro 400 million was formed for self-employed and enterprises in the tourism industry;
- a deferral was introduced for the payment of debt on loans in the industry and for SMEs;
- introduced a deferral of tax payment for self-employed and SMEs for a period of 6 months, etc.

In general, the Spanish public health system turned out to be poorly prepared for the epidemic and did not properly cope with the flow of patients with coronavirus during its first wave of spread. So, in the medical institutions of the country there was a lack of mechanical ventilation, medicines, tests, protective equipment for medical personnel, police and military. According to a public opinion poll conducted by the newspaper "Vanguardia", 77.5% of Spanish residents believe that the state was unprepared for the epidemic [38].

The shortage of protective equipment in Spain, according to experts, is a consequence of the fact that "there is only one small workshop in the country that produces surgical masks" [38]. Regarding the conventional sewing industry, it «was long ago withdrawn - for greater profitability - in third world countries».

Since the end of September, the second wave of the coronavirus epidemic began in Spain. The Madrid leadership in September 2020 resisted the introduction of restrictions, and also made an attempt to stop their introduction through the courts. According to the Madrid Minister of Justice, «the introduction of even partial quarantine will cost the capital's economy 8 billion eu» [39]. However, due to the high level of infection and morbidity in the country *(100 thousands new cases daily; the country is in 7th place in the world in the number of registered cases of COVID-19 infection)*, certain measures were nevertheless taken by the federal government of Spain:

- limiting public gatherings to 6 people;
- residents of Madrid can travel outside their areas only in case of emergency;
- restaurants and bars will be open until 22:00

M. Hernan, an epidemiologist at Harvard University, who consulted Spain during the first wave, argues that the main mistake of the country's leadership is that it «quickly removed restrictions and then reacted extremely slowly to contain the new growth of infections» [39].

Today, there are more than 100 class and individual lawsuits against the government in courts at all levels of the country in connection with unsatisfactory work during the COVID -19 pandemic. More than 20 lawsuits were filed with the Supreme Court alone, demanding significant financial compensation. So, for example, on June 5 this year. For the first time in the history of Spain, the court of the province of Teruel handed down a verdict against the country's authorities because the province did not receive any assistance *(in particular, protective equipment for medical facilities)*. As emphasized in the court ruling, as a result of the negligence of officials responsible for health care among the population, including the medical staff, numerous victims have been identified [39].

Thus, the COVID-19 pandemic has exacerbated the economic plight of Spain, which is still not recovering from the 2008 crisis. Antagonistic sentiments are expressed between the government and society, the government and the opposition. Investment and production, tax revenues have decreased, the budget deficit is growing, and the government's debt has grown to 98.9% of GDP [40].

United States of America – large-scale** (maximum) **lockdown strategy

As of October 30, more than 9 million people have been diagnosed with COVID-19 coronavirus in the United States. Dead more than 300 000 people [1].

Today, the United States ranks first in the ranking of countries for the number of infections and deaths associated with the coronavirus.

Washington confirmed its first case of COVID-19 on January 21, 2020. Despite the fact that the United States entered the first wave of the epidemic later than other states, today it is leading in terms of the number of infections. And as one of the main reasons for this situation, experts call the uncoordinated work of the health care system. In hospitals, there was an acute shortage of ventilators, infectious wards and beds. New York also used mobile morgues, which were last needed during the September 11, 2001 terrorist attack [41].

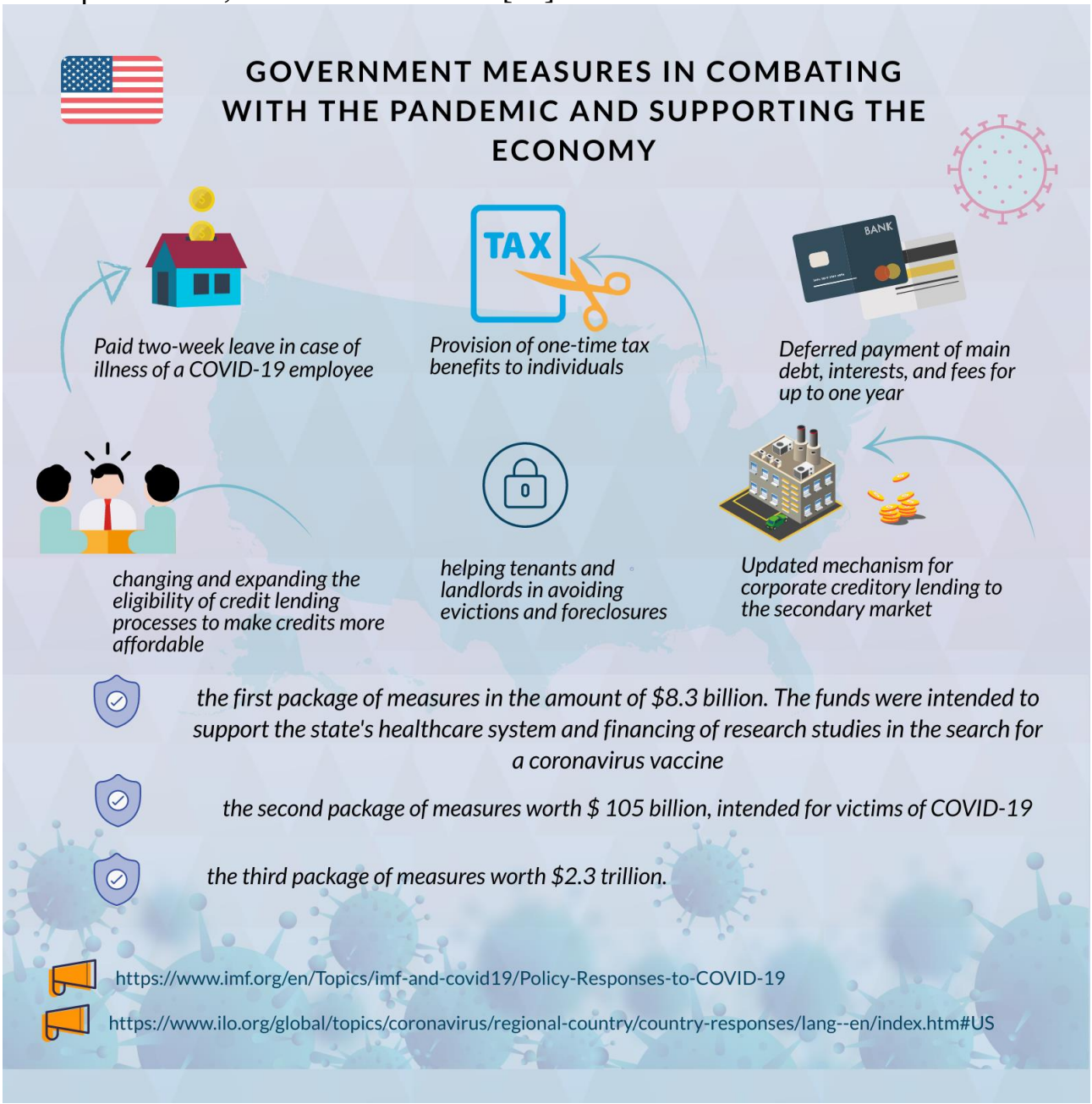


Figure 8. Support measures taken by the USA government to combat the pandemic and support the economy

Another, no less important factor is the fact that high-tech medicine, scientific and innovative research *(especially in oncology)* receive significant funding in the country, however, primary health care remains underfunded.

The state of emergency was declared by President Donald Trump on March 13, 2020, and on April 12, for the first time in the history of the United States, the federal authorities of the country adopted a declaration of emergency simultaneously in all American states and the capital District of Columbia [42].

Main measures to support the population and business [13, 43]*:*

1) March 6 of this year the first package of measures in the amount of US $ 8.3 billion was adopted to support the public health system and fund scientific research in the search for a vaccine against coronavirus;

2) On March 18, a second package of measures worth USD 105 billion was adopted for victims of COVID -19, which included:

- paid labor leave in case of emergencies;
- reimbursement of expenses by insurance companies;
- paid two-week leave in case of illness of an employee of COVID -19;
- covering the cost of unemployment benefits for a period of 6 months.

3) On March 27, a third package of measures worth $ 2.3 trillion was adopted, which provided for:

- payments for unemployment *(increase in the size of payments, inclusion of additional categories of citizens, increase in the duration of payments)*;
- direct payments to persons with income up to USD 75 thousand per year;
- providing loans and grants for small businesses, large corporations and government bodies;
- deferral and reduction of taxes for business;
- increasing funding for health care systems, education, the Federal Agency for Emergency Management;
- provision of one-time tax benefits to individuals;
- ensuring food security for the most vulnerable groups of the population;
- testing for viruses; the development of vaccines, therapeutics and diagnostics; support for the Centers for Disease Control and Prevention;
- Helping tenants and homeowners to avoid evictions and foreclosures;
- rendering assistance to the international community.

On April 2, statistics were published on claims for unemployment benefits *(6.6 million cases)*, which became a record in the history of the United States: in just 2 weeks, 10 million applications were filed – this is 1 million more than during the crisis years from 2008 to 2010 years [44].

In case of violation of mandatory self-isolation and infecting other people, the offender in the United States faces a fine of 100 thousand US dollars, or 1 year in prison. In case of death, a fine of US $ 250,000 or a year in prison. For legal entities – USD 200 thousand and USD 500 thousand, respectively [45].

Thus, despite significant attempts to counter the spread of COVID -19, there are obstacles in the face of a federal state structure and a strong market economy. For example, scarce ventilators are becoming more expensive amid competition between states. New York State Governor E. Cuomo said: “Literally today, companies are calling us and denying us, saying California has offered them a higher price. It's ineffective! And on top of that, *(FEMA)* comes in and starts participating in the auction on a par with the states” [44].

Conclusions

On the basis of the analysis, it can be concluded that, to date, there are no general regulatory rules for the control and containment of the proliferation of Covid-19 – each state takes its own measures, **based on the level of development of their economy and the quality of their health system**. **The political factors** that influenced the choice of strategy are also important. For example, in countries where state policy was previously most centralized, the fight against coronavirus has been harsh, even to the point of concealing the true number of infected citizens. The imposition of strict measures had shown some effectiveness. In China, for example, the closure of Hubei Province and surrounding communities has enabled the rest of the country to prepare for the epidemic. However, the same harsh measures have not worked in other countries. For example, despite the declaration of a state of emergency and the allocation of considerable financial resources to the health system, Italy and Spain led the European countries in the number of deaths from coronaviruses. The situation was grave and most serious in the United States of America, where the emergency was introduced somewhat later than the situation required, and the quarantine measures were independently determined by each State. South Korea, in comparison with other countries, was able to successfully prevent a massive and prolonged epidemic, thanks to the speed, innovative leadership and awareness of its citizens. It is likely that the **effectiveness of a state's response to a pandemic depends not only on the level of severity of the restrictive measures, but also on such indicators as the intensity, duration and adequacy of their implementation, the preparedness of the health system, Governments, businesses and citizens to these measures.**

2. EFFICIENCY OF PUBLIC ADMINISTRATION IN THE PANDEMIC PERIOD

2.1 Generalized approaches to measuring the effectiveness of measures taken in a pandemic

In world practice, several schools and approaches have been formed that allow to systematically consider the possibilities of analyzing and measuring the effectiveness of public administration. These issues in one form or another rise in the writings of authors such as V. Wilson [46], Y. Habermas [47], M. Castels [48], P.Drucker [49], D. Waldo [50], I. Bartsits [51] and others. These analytical procedures acquire a new meaning in a pandemic, due to the growth of instability, which negatively affects the efficiency and manageability of a large system, which is the state [52].

R. Meyton in his work "Social theory and social structure" formulated a rule according to which organizations that are unable to achieve their goals replace them with other goals that can be achieved [53]. With regard to management in a pandemic, it is worth noting that **those structures and institutions that are not able to effectively respond to the challenges of a pandemic must be reorganized and reformed**, based on the tasks that they currently face. This can justify the need to create an Interdepartmental Commission whose tasks include coordinating the activities of all bodies and structures in the fight against coronavirus.

The key procedure for crisis management is performance monitoring. The theoretical basis of management control is the **feedback principle** developed by N.Wiener. He races – regarded as a unique feedback "feature that allows you to regulate the future behavior of the previous execution of orders" [54]. According to Wiener, **the combination of direct management actions with a feedback mechanism creates the necessary prerequisites for the optimal functioning of socio-economic processes in a crisis**.

When analyzing management efficiency, the emphasis is usually shifted to economic aspects. Evaluate mainly results in relation to costs. However, the effectiveness of public administration can also be characterized by social, political categories. It should also be borne in mind that the object of performance measurement may be indirect results that cannot be calculated. We are talking about the opportunity costs of decision-making and targeting the state.

When analyzing the effectiveness of public administration, **the social effect** is particularly important. Within the framework of the study, it was the assessment of the social effect of public administration that was relevant. Russian sociologist G.Atamanchuk, speaking about approaches to measuring efficiency, suggests focusing on a set of certain social criteria, which include general social efficiency, which reveals the results of the functioning of the public administration system. In addition, he considers orderliness, safety and reliability of social relations, their reproduction with an increasing positive result among the estimated parameters [55].

It is advisable to recall the definition of D. North, the creator of the theory of

institutional change, who speaks of the **"adaptive efficiency"** of society, meaning the ability to respond to changes in the external environment and create productive, honest and stable institutions, and if necessary, replace them with new ones [56].

With the growing uncertainty and unpredictability of external conditions *(coronavirus 2019 pandemic)* in which the policy is being implemented, the state is forced to solve new problems with new methods, with the involvement of new forces and often with unpredictable results. **The ability of public administration to adequately respond to changes in the external environment, by analogy with North's ideas**, [57] can be defined as the **adaptive efficiency of public administration**, which comes to the fore in crisis conditions.

The adaptive efficiency of public administration is characterized by the following indicators PP_i (i=1,4):

- the speed of decision making (P_1);
- quality of decisions made (P_2);
- engaging with society at all stages of policy development and implementation to maximize compliance with public needs (P_3);
- informational openness of power (P_4).

To determine the weights of each indicator *(factor)* W_i (i = 1.4), you can use the *analysis of Saaty hierarchies*. When applying this approach, experts draw up a matrix of priorities of compared factors, which allows calculating weight interfactor ratios. This method provides an opportunity to assess the consistency of data on the relationship of priorities of pairs of compared factors. At the same time, the quality of calculations depends on the competence of experts and the level of organization when conducting surveys [58].

The overall assessment of the adaptive efficiency of public administration - *OAAEPA***, can be calculated using the following formula**:

$$\text{OAAEPA} = \sum_{i=1}^{4} W_i * \text{assessment} P_i$$

This will make it possible to work with a set of measurable criteria, while minimizing the uncertainty factor in assessing performance. Accuracy and measurability make it possible to organize management based on analysis and monitoring of constantly updated data.

The ***quality of decisions*** is improved if they are made on the basis of data analysis, the presence of conscious algorithms by which the decision was made, the assessment of the effectiveness of the decision made, the description of lessons learned and the creation of a knowledge base based on them, as well as the quality of the data.

The concept of "quality" is very ambiguous when applied to statistical data. As defined by Eurostat, it includes a set of six quality parameters that can also be applied to many other types of data [59]:

- *relevance* – the degree to which statistics correspond to current and potential user needs;

- *accuracy and reliability* – the degree of absence of errors in the data caused by various factors; in the context of statistics, accuracy means the proximity of the estimated value to the true *(unknown)* value in the aggregate;
- *timeliness and punctuality* – how soon the data is published as to what it is measuring and how closely the data updates match the planned publication schedule;
- *accessibility and clarity* – the ease with which users can access the data, and the extent to which they can be explained using metadata;
- *comparability* – the degree to which data can be compared over time, region or other area;
- *consistency* – the degree to which the data are consistent with recognized definitions and methodologies.

The ***speed of decision-making*** is ensured by the availability of an accessible representation of the aggregate of data in the form of an end-to-end analytics system; the data should be automatically updated immediately after they are published on the site. Data can have the following attributes: update frequency, place of publication, data presentation form *(statistical forms),* file type excel, word, pdf.

Interaction with society at all stages of policy development and implementation in order to maximize compliance with its public needs should be reflected in a positive change in the characteristics and indicators of the population's quality of life. When analyzing expenditures, such spending of budgetary funds will be recognized as effective, in which the degree of satisfaction of the society will be greater than budgetary expenditures, but this approach requires a high degree of openness of state bodies.

The ***informational openness*** of the authorities allows citizens and organizations to get an adequate idea and form judgments about the state of society and public administration, contributes to the effectiveness of public control, and is also a means of increasing the efficiency of the government bodies themselves. This is especially true in a crisis, where the main requirements are efficiency and openness.

The indicators for measuring the responsiveness are speed, time of order execution, reflection and communication.

The indicators for measuring response quality are the availability, openness and quality of data.

Indicators for assessing the effectiveness of public administration from the point of view of the communicative potential of power structures and the possibility of reflection on the part of citizens can be estimated based on *the quality index of the work of a public administration body* proposed by A. Nagimova [60]:

$$K_p = \frac{4*x_1+3*x_2+2*x_3}{3} * 100\%$$

where K_p is the quality index of the work of the state body; X_1 – the share of positive ratings; X_2 – the share of neutral assessments; X_3 – the share of negative assessments.

Its main feature is the assessment solely by citizens who have received public services, by calculating the average level of satisfaction with the quality of these services.

At the same time, this index cannot be considered universal in the development of assessment criteria, since on the one hand, it provides a reflection of public opinion, and on the other hand, it reduces the assessment of the effectiveness of the management body's activities solely to a subjective assessment, which is also not a positive fact, since it should be comprehensive [61].

Management can only be effective when it is in constant and continuous development. Effective management is focused on ensuring the vital stability of the system and the accumulation of resource potential, including innovation. All this is practicable subject to continuous self-reflection system. This is important for developing the most optimal strategies and tactical options for their implementation.

The basis for the accumulation of data contributing to self-reflection of the system is a set of information sources, which include:

- *reports of state authorities*, management structures, as well as officials on the results of their activities;
- *public opinion*, which is a set of judgments, views, positions, points of view of many people;
- assessment of the effectiveness of public administration is given *by the mass media*, which in their essence are designed to mirror the events taking place in the life of society and, therefore, the results of management;
- *appeals of citizens*, the content of which forms ideas about people's lives, their needs, specific interests, violations of their rights, etc., which, to a certain extent, allows one to judge the effectiveness of public administration, to reveal shortcomings, omissions, weaknesses in the system of state management.

In a crisis, the importance of studying public opinion and a quick response to citizens' appeals provide feedback and the ability to act in a proactive manner, reducing the impact of uncertainty that increases during a pandemic and negatively affects the efficiency and quality of governance.

The necessary conditions for the effectiveness of management activities are:

1) coordination of goals *(General and specific, related to different areas, stages and types of activities);*
2) thorough justification of target priorities *(what needs to be achieved and what can be ignored);*
3) correlation of time frames for achieving individual results *(the time factor in social management structures often turns out to be decisive, and sometimes acts as a goal).*

Assessment of the effectiveness of public administration is a multi-faceted and multi-level process that involves the use of General, sectoral and other, more specific, additional criteria. Along with approaches that reflect the cost or organizational performance of the state apparatus, its institutional and quantifiable parameters, the assessment of the professional activity of officials in the exercise of public authority involves the use of qualitative criteria that allow us to understand and explain various processes and mechanisms of the public administration system.

Thus, **the assessment of the effectiveness of public administration** involves a system of indicators and criteria that reflect the diversity of tasks solved by the state-social, political, and economic. Almost all existing systems for evaluating and measuring the effectiveness of public administration are based on an ***integrated approach*.** The most famous ones include:

- the GRICS index *(Governance Research Indicator Country Snapshot)* and The Worldwide Governance Indicators *(WGI)* of the World Bank;
- the Corruption Perceptions Index *(CPI)* and the Global Corruption Barometer by Transparency International;
- the Index of Economic Freedom, developed by the Heritage Foundation in collaboration with the Wall Street Journal;
- Global Competitiveness Index *(of The of Global Competitiveness the Index),* proposed by the World Economic Forum *(World Economic Forum)*
- WGI *(Worldwide Government Indicators)* of the World Bank;
- the *Fragile States Index* developed by the Fund for Peace and Foreign Policy magazine, etc.

All these assessment systems are united by the diversity and versatility of approaches; measurement is carried out according to various criteria and levels. The assessment system can include data on the activities of individual entities *(organizations, departments, employees)* in the selected areas, linked to the strategic goals of the development of the territory and the relevant authority; methods for assessing the quality of the provision of state and municipal services; tools and information, reporting the main participants, reporting and accountability mechanisms, etc.

One of the main characteristics of many evaluation systems is **the openness of reporting** on them, such as management based on the results *(the Results-Based Management Accountability's Framework, the RMAF, Canada).* The RMAF concept implements the principle of openness and transparency through open access on the Internet to the reports of ministries and departments, as well as audit reports with revealed violations for Canadian citizens. Based on the management efficiency assessment system, the personnel policy in relation to civil servants of Canada is being built.

Another approach to measuring the effectiveness of public administration is based on the principle of determining the quality of management through the **characteristics of the relationship between the state and business.** Thus, the **BEEPS** (*The Business Environment and Enterprise Performance Survey*) and **WBES** *(The World Business Environment Survey)* indices demonstrate a comparison of government policies through the quality of interaction between business and government. The comparison is based on indicators such as the level of corruption, the business climate, the quality of public services in terms of interaction between business and the state, the quality of governance and regulation, and the competitive environment [52]. And these are important indices, since successful, open and barriers-free interaction between the state and business shows the successful policy of the state, effective management at the macro level.

To analyze and measure the effectiveness of public administration, a set of methods and techniques is used, conditionally reduced to ***general*** and ***special*** ones.

Table 1. Methods for assessing the effectiveness of public administration

Common methods	
Individual surveys and interviews	Polls to assess the effectiveness of government programs and decisions. The objects of the survey are households, businesses, the nongovernmental sector, civil servants, etc.
Focus groups	Structured discussion with a group of people on pressing issues of socio-political and socio-economic life
Analysis of use cases *(case-study)*	In-depth study of specific special cases of the implementation of projects or government programs in a specific sector of the macrosystem
SWOT analysis and other types of strategic analysis	Identifying the strengths and weaknesses of programs or solutions, as well as policy opportunities a managerial agent to eliminate threats from the external environment
Factor analysis	Multivariate statistical analysis, Execu - operated to the structuring of a large array of information data about target groups and identify the interdependence of a number of indicators
Regression analysis	Quantifying the effect of multiple factors on a variable to be determined
Delphi and PATTERN expert methods	Interactive consultation procedure for individualistic - duality survey experts previously known problems
Specific methods	
Entry-exit method	Compilation of a matrix of connection between the resources spent, the results obtained *(services, goods)* and their consumption by the population
Cost-benefit method	Comparison of the amount of benefits obtained with the costs required to implement the adopted management decision
Cost-effectiveness method	Evaluation of the efficiency of spending financial resources in the process of implementing projects and programs

If there is a lack of information in the format of large series, approaches based on the analysis of event series can be used in building models of the future. To assess the dynamics of the response of state bodies and structures, **an event analysis** is effective, giving results related to the activity of state bodies and structures in the fight against the pandemic.

An event analysis was carried out based on event series, based on the development of the situation in the management of the coronavirus crisis *(Table 2)*. Grouped by time, type of event and scope *(Table 3)*.

Table 3. Column encoding

Sphere	**The code**
Medicine	1
Education	2
Social sphere	3
Civil service, management organization, strategy	4
Economy	5

Logistics	6
Event type	**The code**
Specific measure	1
Event	2
Program	3

Table 2. Event series on measures to counter the coronavirus crisis

Month	Period	Characteristic	Event ID	Action code
January	January 2020	Communication with China stopped	6	1
	January 2020	International traffic stops	1	1
	January 2020	Shortage of masks, speculation	1	1
	01/20/2020	A methodology has been introduced for ranking countries into 3 categories, depending on the degree of risk of the spread of coronavirus infection.	1	3
	01/26/2020	Sanitary and epidemiological control at checkpoints across the state border has been strengthened, training exercises have been held	4	3
	01/27/2020	An interdepartmental commission has been established to coordinate measures to prevent the emergence and spread of coronavirus infection (IAC)	4	2
	01/29/2020	IAC's decision to suspend the issuance of visas to Chinese citizens	1	1
	31.01.2020	The second stage of strengthening sanitary and epidemiological control	1	3
March	March-May 2020	Increase in the share of public services received in electronic format	1	1
	March-May 2020	Reorientation of the activities of government agencies to combat the pandemic	5	1
	March-May 2020	Switching to online meetings in government agencies	2	1
	March 2020	Introduction of a special procedure for public procurement	4	1
	March 2020	New format of interaction between government agencies and the population	1	1
	03/10/2020	Zhandarbek Bekshin, the country's chief sanitary doctor, said that according to forecasts based on mathematical models, COVID-19 will arrive in the country on March 11-16.	1	2
	03/13/2020	Registration of the first cases of infection	5	2
	03/14/2020	Transfer to distance learning of students; development of scenario lessons for TV, production of videos, organization of the educational process through ZOOM, electronic applications	3	2
	03.16-11.05. 2020	Restrictions on entry and exit from the country have been established, quarantine or other restrictive measures have been introduced in all regions, the activities of large non-food trade facilities, cinemas and other places with a mass gathering of people have been suspended	2	1
	03/20/2020	Implementation of support measures for entrepreneurs, 600 billion tenge was allocated through the placement of conditional deposits in second-tier banks. Providing second-tier banks with preferential loans to replenish working capital to small and medium-sized businesses, individual entrepreneurs affected by the introduction of a state of emergency, for up to 12 months at a rate of no more than 8% per annum	1	3

	03/22/2020	On March 22, Almaty akim B. Sagintayev said that in order to support the townspeople who were in difficulty, the city akimat came to an agreement with the monopolists on deferring payments for all utilities, including the elevator and garbage collection. Service providers did not cut off electricity, water, heat, gas and telephone connections for arrears during the quarantine	1	3
	27.03 2020	To ensure employment within the framework of the Employment Roadmap for 2020-2021, 45 billion tenge was allocated for the implementation of 325 infrastructure projects with the creation of 11.3 thousand temporary and 441 permanent jobs	5	3
	03/28/2020	In Nur-Sultan and Almaty, the exit of citizens from their places of residence is limited, with the exception of the purchase of food, medicine and going to work, all crowded places are closed, the work of public transport is limited, a ban on gathering on the streets and in public places in groups of more than three a person, with the exception of family members, is prohibited from moving unaccompanied minors. Also, a 14-day quarantine was introduced in the residential area "20 Years of Independence" of the Abai district of Shymkent with the organization of a house bypass; in Shymkent, the activities of the airport, railway and bus stations, kindergartens were suspended; a ban on entry and exit to the territory of Shymkent was introduced from 21:00 to 07:00; the work of public catering and transport facilities is limited	5	3
	03/30/2020	Decision to establish a monthly fixed wage supplement for medical workers involved in anti-epidemic measures. Lump sum payments are provided: in case of illness of a medical worker, KZT 2 million, in case of his death - KZT 10 million	5	2
	30.03-13.04. 2020	In Nur-Sultan and Almaty, the activities of all enterprises and organizations, regardless of their form of ownership, were suspended, with the exception of central state bodies, akimats, law enforcement agencies, health organizations, the media, grocery stores, pharmacies and life support organizations	5	3
	03/31/2020	President K. Tokayev on the air announced additional measures to support the population and business in connection with the state of emergency, set the task of indexing pensions and state benefits, including targeted social assistance, by 10% in annual terms; expand coverage with additional social benefits; to extend from April 1 to July 1 the right of uninsured citizens to receive medical care in the system of compulsory social health insurance; to expand the list of categories of citizens who should be provided with free food and household sets; support farmers to carry out spring field work in a timely manner; to provide jobs for the unemployed population around large cities, which were closed for quarantine; for small and medium-sized businesses for 6 months, cancel the accrual and payment of taxes and other payments from the wage fund	1	2
April	April to December 2020	Training courses and workshops for children, parents and educational psychologists on parent-child relations during COVID-19	2	2
	04/01/2020	Change in the size of MCI, increase to 2778 tenge	2	1
	04/03/2020	The decision to build three infectious diseases hospitals for 200-300 people from pre-fabricated structures in the cities of Nur-Sultan, Almaty and Shymkent	6	1

	04/06/2020	Introduction of distance learning. Broadcast of video lessons, El Arna - in Russian, Balapan - in Kazakh. It was planned to conduct online classes through specialized Internet platforms, but technically this turned out to be impossible	2	2
	04/08/2020	Development of methodological recommendations: on the organization of distance learning; on carrying out summative work in the conditions of distance learning	5	2
	04/09/2020	A team of doctors from China flew to Nur-Sultan for consultations, humanitarian medical aid arrived (masks, gloves, thermal imagers, ventilators, medicines)	6	1
	04/10/2020	Final exams for students of grades 9 and 11 have been canceled, the decision of the Ministry of Education and Science of the Republic of Kazakhstan is to issue certificates based on annual assessments	6	2
	04/21/2020	Under the program of concessional lending "The Economy of Simple Things", 2,492 projects were approved for the amount of 603 billion tenge, 2192 projects were subsidized for the amount of 364.5 billion tenge	3	3
	04/27/2020	The quarantine regime has been relaxed	6	2
May	05/01/2020	Flights between Nur-Sultan and Almaty were resumed, subject to passengers passing the PCR test for coronavirus, on May 4 - from Nur-Sultan and Almaty to Kyzylorda, Petropavlovsk, Ust-Kamenogorsk and Semey	6	2
	05/04/2020	Sports activities and outdoor training are allowed; opened non-food shops with an area of up to 500 m², photo salons, flower stands, hairdressing salons (by appointment), medical centers (by appointment), dental clinics (by appointment), real estate companies, advertising agencies, lawyers, notaries, microfinance organizations, insurance companies, pawnshops, exchange offices, information and communication technology companies	4	2
	05/11/2020	Easing the quarantine regime, in regions and cities where the situation with the spread of the virus was under control	1	2
	05/19/2020	A comprehensive plan has been adopted to restore economic growth. The comprehensive plan consists of 10 directions and 172 systemic and sectoral measures to stimulate business activity, support employment and increase incomes of the population.	6	3
June	June-July 2020	Closure of testing rooms for government service	4	2
	06/01/2020	The movement of passenger trains within Kazakhstan is resumed.	3	2
	03.06-30.06. 2020	The number of asymptomatic carriers detected was counted separately from symptomatic carriers. 17,642 asymptomatic carriers identified	1	2
July	July 2020	5,200 teachers improved their qualifications on 7 educational programs, 30 thousand teachers took courses on IT competencies	4	3
	07/05/2020	Lockdown, all facilities closed, except for supermarkets, pharmacies, cafes (while maintaining social distancing), airports (domestic flights). Not completely filmed	4	3

	07/16/2020	Admission company of applicants in a remote format, admission was carried out according to the total score of compulsory and specialized subjects, a certificate of education; exclusion of medical certificates 086	4	2
	07/30/2020	0.9 billion tenge allocated to support entrepreneurship within the framework of the "Business Roadmap - 2025"	5	2
August	08/14/2020	Financing from local budgets has been allocated to provide laptops for schoolchildren from a socially vulnerable category	1	2
	08/17/2020	In preparation for the new academic year, training was organized in a combined mode, online, offline (depending on the regional location and contingent)	4	3
September	09/01/2020	Message from the Head of State to the people of Kazakhstan	1	1

Based on the analysis, the **following conclusions were made**:

– the state's activity in the direction of *medical regulation* of the crisis is high in the first months of the crisis and is more complex in nature. While the measures are targeted, certain events related to the strengthening of epidemiological control are typical for later periods;

– anti-crisis management *in education* is characterized by the adoption of point-based measures, and the time range of dates is wider, it covers the period from March of this year to the present;

– analysis of the event series suggests that *social measures* were not so active, they are much less both in number and in the nature of their application;

– in the field of *organizing the public service*, the situation is similar to social regulation. The main events are point-based, and there are no events that are programmatic or extended in nature;

– *anti-crisis economic policy*, as the event analysis shows, is mainly associated with the adoption of program documents;

– *logistics measures* are highlighted in a separate area of analysis, since it is the issue of movement control that determines the construction of a strategy to combat coronavirus infection. The type of measures is monotonous and is associated with opening or closing a message.

The analysis was based on a set of situational data series related to events of a national nature. It is concluded that there is a **bias towards local and point-based response measures**, based on the fact that the number of events that have a prolonged or programmatic nature is less than the number of situational control measures. The analysis shows that **the effectiveness of anti-crisis management measures is low in terms of consistency, frequency, and even distribution across management areas**.

There is a gap related to the application of social regulation and support measures, which is confirmed by the data of the conducted sociological survey, which showed that **citizens do not feel enough support from the state during the pandemic**.

Another interpretation can be visualization of event series that give a clear vision of the cause-and-effect relationship between the management action and the result *(figure 9)*.

Result	At the end of 5 months, GDP decreased by 1.7%. Production of goods increased by 4.8%. Production of services decreased by 6.2%. Annual inflation was 6.7%	To implement this program, 600 billion tenge was allocated through placement of conditional deposits in second-tier banks. The business support mechanism is implemented by providing second-tier banks with preferential loans for working capital replenishment to small and medium-sized businesses and individual entrepreneurs	Providing employment under the "employment Roadmap for 2020-2021" - 45 billion tenge for the implementation of 325 infrastructure projects with the creation of 11.3 thousand temporary and 441 permanent jobs upon their completion	As of October 19 this year, 2492 projects worth 603 billion tenge were approved under the program of preferential lending "Economy of simple things", 2192 projects worth 364.5 billion tenge were subsidized. the Leaders in developing new projects were the city of Almaty, Kostanay and East Kazakhstan regions, the lowest indicators were recorded in Akmola, Mangistau and West Kazakhstan regions.	The comprehensive plan consists of 10 areas and 172 systemic and sectoral measures to stimulate business activity, support employment and increase incomes.	to support entrepreneurship in the framework of the "Business Roadmap-2025" — 0.9 billion tenge.
Date	March 16, 2020	March 20, 2020	March 27, 2020	April 21, 2020	May 19, 2020	July 30, 2020
Event	A state of emergency was introduced from 16.03.20 to 11.05.20 in connection with the coronavirus pandemic	Program of concessional lending to small and medium-sized businesses[1]	Employment road map	Economy of simple things 5 package of measures	Comprehensive plan to restore economic growth in 2020.	Business road map-2025

Figure 9. An example of building an event series

To assess the effectiveness of the work of state bodies and structures during a pandemic, **a correlation analysis** was carried out between the data of a sociological survey on questions No. 1 “How do you assess the work of state bodies and structures during a pandemic” and № 19 “epidemiological situation on measures of state support ”.

Table 4 shows the multifactorial relationship between the assessment of government performance and trust in information sources.

Table 4. Multi-factor relationship between the assessment of government performance and trust in information sources

Source of information	**Estimate**	**Std. Error**	**t value**	**Pr(>|t|)**
Official site	0.173501	0.029937	5.796	8.11E -09 ***
Facebook	-0.04855	0.032265	-1.505	0.133
Instagram	0.054932	0.03426	1.603	0.109
VK	-0.02824	0.040322	-0.7	0.484
Classmates	0.185076	0.03731	4.96	7.74E -07***
TV	0.060578	0.037339	1.622	0.105
Radio	-0.03733	0.037549	-0.994	0.32
Youtube	-0.01325	0.035264	-0.376	0.707
Messenger	0.005244	0.0318	0.165	0.869
Newspapers	0.014013	0.037539	0.373	0.709
Official broadcasts of briefings in the CCS and at the regional level	0.131615	0.032139	4.095	4.42E -05***
Relatives and family	0.173501	0.029937	5.796	8.11E -09
Friends	-0.04855	0.032265	-1.505	0.133
Neighbors	0.054932	0.03426	1.603	0.109
Missing value	1.873841	0.078848	23.765	< 2e -16 ***
Multiple R -squared: 0.2058				
Note: Level p -value: *** - 0.000 ** - 0.001 * - 0.005				

The analysis shows that the **increased assessment of the work of state bodies and structures during the pandemic is associated with increased confidence in the following sources:** official websites, “Odnoklassniki” *(Classmates)*, official broadcasts of briefings in the CCS and at the regional level. Thus, with the growth of confidence in these sources by 1%, the assessment of the work of state bodies and structures increases by 0.17%, 0.18% and 0.13%, respectively. Level p -value 99,9%.

$$assessment = 0{,}17Trust_{\text{of.sites}} + 0{,}18Trust_{OK} + 0{,}13Trust_{\text{of.broadcast of briefings in the Central communications Service and at the regional level}}$$

At the same time, it is worth noting that official sites are often rated low by representatives of the private sector, 43% of respondents who gave 1 point, and 39% of respondents who gave 2 points *(Figure 10)*.

At the same time, out of all respondents who gave 5 points to the level of trust in official websites, 37% belong to state and non-governmental employees, and only 26% belong to the private sector.

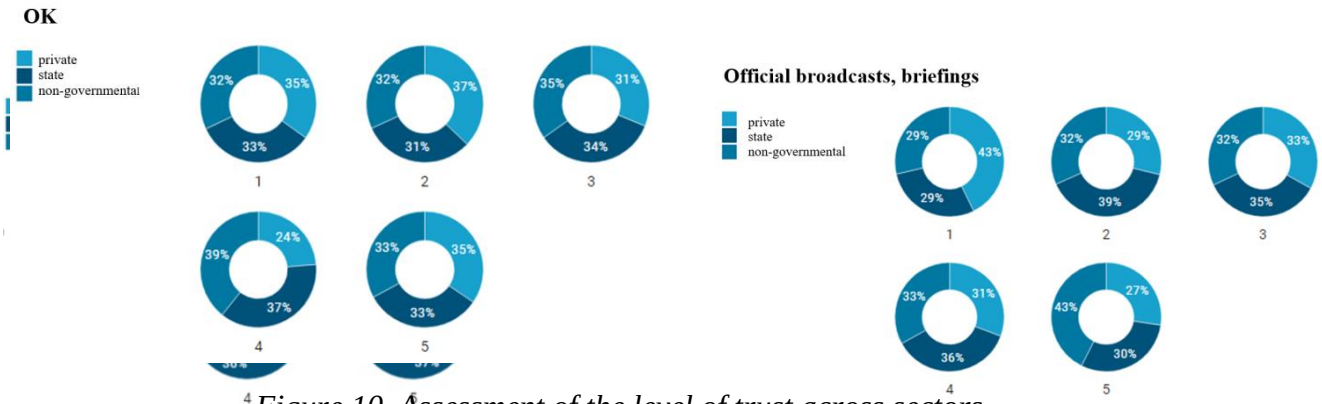


Figure 10. Assessment of the level of trust across sectors

Out of all respondents who gave 1 point, 43% trust official broadcasts from the private sector; among respondents who gave 5 points, 43 % are representatives of the public service and 30% are representatives of non-governmental organizations.

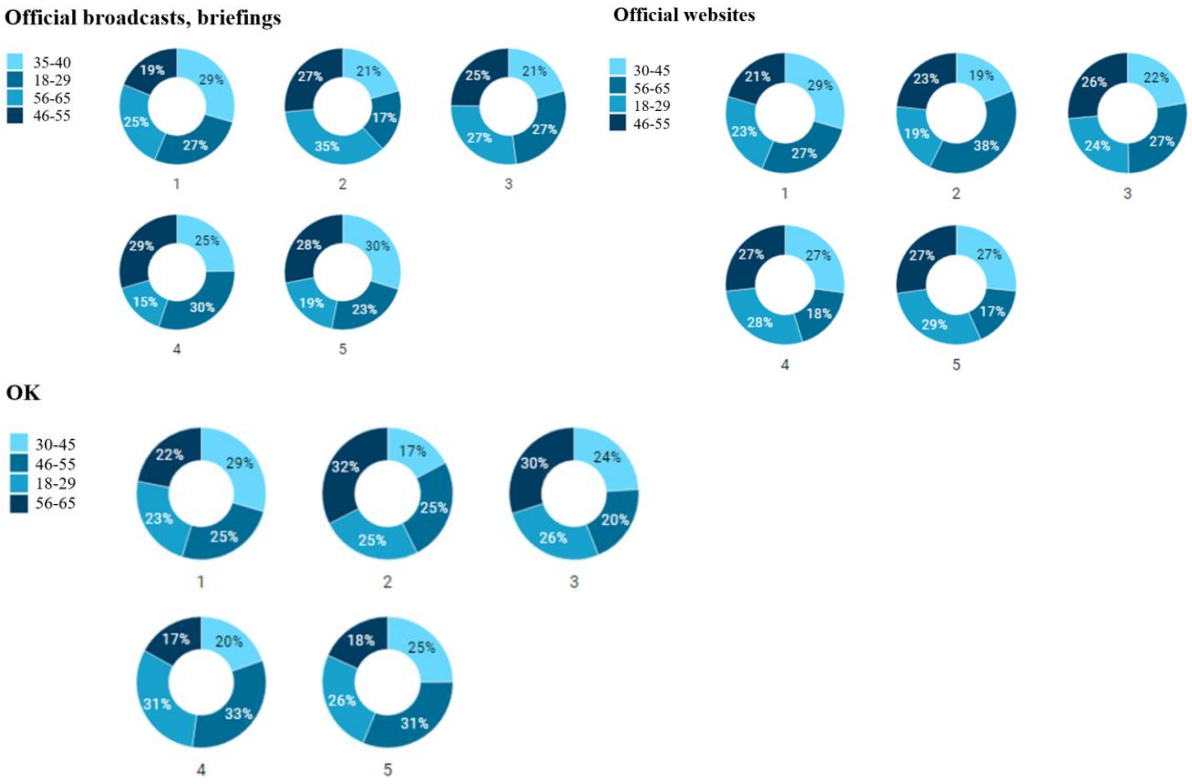


Figure 11. Assessment of the level of trust by age

Considering the age content, it is noticeable that he rated official broadcasts and briefings by 1 point – 29% at the age of 30 to 45 years old, rated it by 5 points – 30% at the age of 30-45 years. The official sites were rated 1 point by 29% of those aged 30 to 45, the respondents aged 56 to 65 were least trusted by the respondents aged 56 to 65 – 17% *(Figure 11).*

Least of all trust «Odnoklassniki» *(5 points)* are respondents aged 56-65 years *(18%)*, while 31% of respondents who rated trust highly – aged 46 to 55 years.

Analysis of variance allows you to find differences in the means for groups. When analyzing the effectiveness of management, the use of this method allows us to show the characteristics and trends of perception of representatives of different social groups, based on a certain set of parameters. Within the framework of this study, a variance analysis of the data from the results of the expert survey was carried out *(Figure 12).*

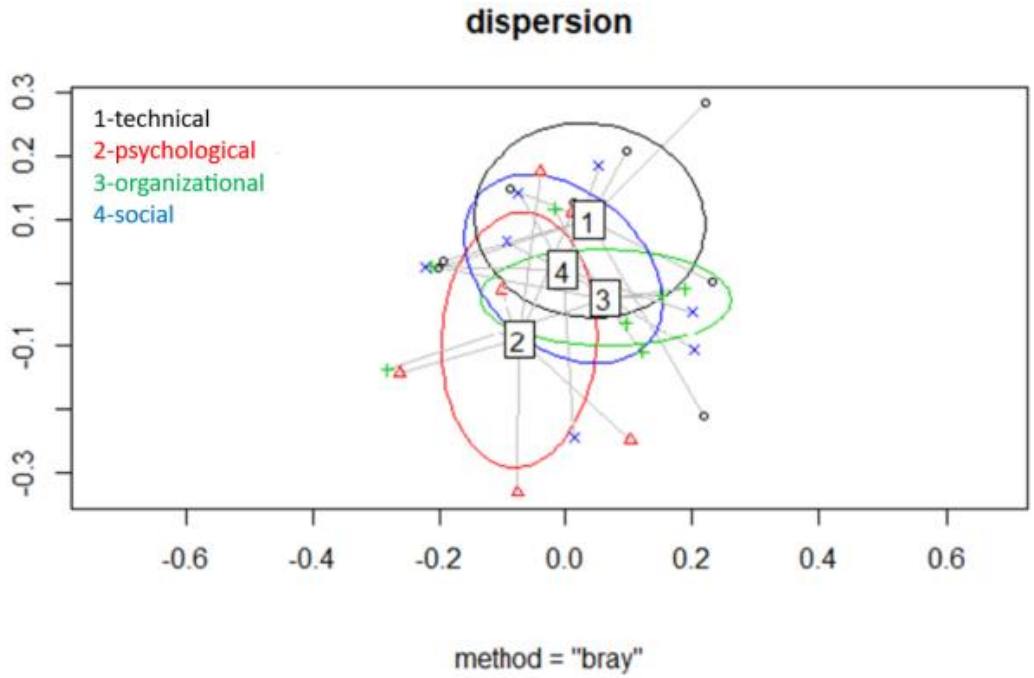


Figure 12. Dispersion distribution of assessing the effectiveness of government agencies depending on the types of difficulties

The distribution result shows that the assessment by experts of the effectiveness of state bodies does not differ from the assessments of the difficulties that experts faced with the transition to a remote mode of work. At the same time, there is a noticeable deviation from the general trend, the relationship between the psychological difficulties faced by the experts, and the assessment of the effectiveness of state bodies. **This fact shows the importance of considering psychological factors that influenced the assessment of the effectiveness of the work of state bodies.**

Evaluation of the efficiency of government agencies during a pandemic highly and positively correlates with the frequency of responses from respondents that «The

assessment is rather positive, approval is expressed on key points» and «The assessment is positive, high level of trust in the authorities».

Table 5. Evaluation of the effectiveness of government agencies during a pandemic

Assessment characteristic	**Estimate**	**Std.**	**Error**	**t -value**	**Pr(>|t|)**
Sharply negative assessment, growth of social tension	1.7500	0.9174	1.908	0.068	
The assessment is rather negative, the majority are dissatisfied with the work of government agencies	1.1818	0.8143	1.451	0.1591	
The assessment is rather positive, approval is expressed on key points	1.8333	0.8091	2.266	0.0324	*
Positive assessment, high level of trust in the authorities	3.0000	1.2974	2.312	0.0293	*
(Intercept)	1.0000	0.749	1.335	0.1939	
Multiple R -squared: 0.2519					
Note: The level of p -value : *** - 0.000 ** - 0.001 * - 0.1					

The performed **regression analysis** shows that NGO representatives often faced organizational problems during the pandemic, the coefficient is negative 1.8.

Table 6. The frequency of occurrence of organizational problems depending on the type of activity of the respondents

Assessment characteristic	**Estimate**	**Std.**	**Error**	**t -value**	**Pr (> | t |)**
(Intercept)	1.8	0.6499	2.77	0.0102	*
LEB	-0.3	0.7959	-0.377	0.7093	
NGOs	-1.8	0.919	-1.959	0.0591	*
Business	-0.6	0.7959	-0.754	0.4577	
Multiple R -squared: 0.2519					
Note : The level of p -value: *** - 0.000 ** - 0.001 * - 0.1					

At the same time, the assessments of the effectiveness of government bodies by NGOs differ significantly from the assessments of representatives of central and local government bodies, as well as business *(Figure 13).*

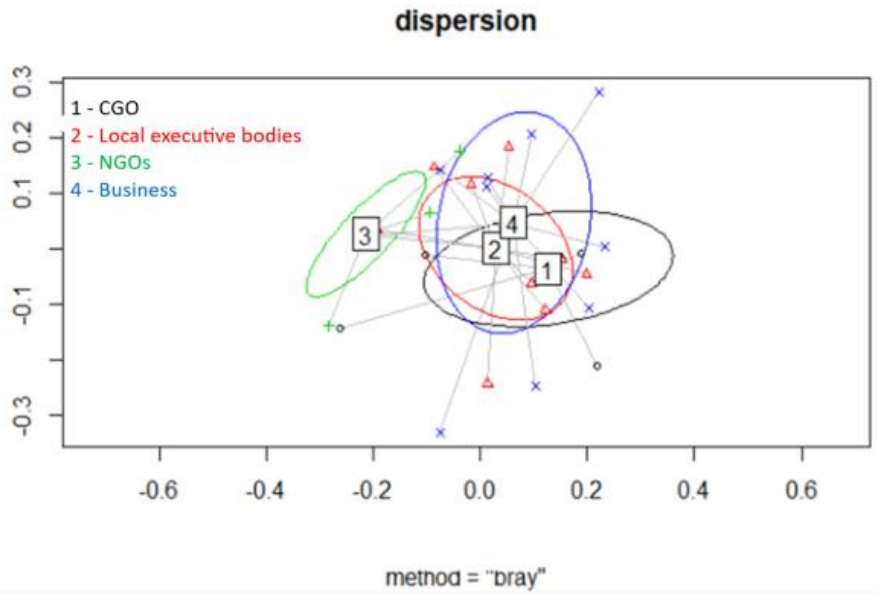


Figure 13. Dispersion distribution of assessing the effectiveness of state bodies depending on the sphere of employment of experts

The conducted analysis of variance allows you to see how the participants of the expert survey evaluate the effectiveness of government agencies. Based on the constructed model, it can be seen that the opinion of experts from the field of NGOs has certain differences with the opinion on evaluating the effectiveness of representatives of CGBs, LEB and business. Thus, modeling methods confirm one of the research hypotheses related to the need **to more actively involve representatives of the public sector in crisis management**. The example of the presented model shows the possibility of using one of the types of factor analysis to determine the criteria for the effectiveness of public administration.

One of the most effective tools for modeling the effectiveness of government measures is **cluster analysis.** Within the framework of this study, the potential of public trust in public authorities was assessed using cluster data analysis.

Let's take a closer look at the technique. Based on the data set obtained as a result of a mass survey, a table of the "object – attribute" type is constructed, where the objects are the questionnaires completed by the Respondent, and the signs are their opinions on various questions in the questionnaire. Each feature generates a breakdown of respondents on a set of questionnaires by the number of gradations of this feature. In opinion polls, in addition to the percentage of votes, it is necessary to count not the number of people who give a certain rating from 1 to 5, but the measure of similarity, that is, to determine groups of people who think about the same. Cluster analysis procedures can be used to identify some actual relationships of features based on survey data and generate their typology on this basis [62].

The initial data set for clustering contains information on the average level of perception of the management efficiency of public and quasi-public sector organizations

in 17 regions of Kazakhstan. The data were obtained after encoding the responses of respondents to question 4 of the questionnaire "Evaluate from 1 to 5 the effectiveness of Central government agencies and the quasi-public sector in the context of a pandemic". The score is discrete from 1 to 5, where 1 is completely inefficient and 5 is effective.

Table 7 contains the encoding of state and quasi-state bodies.

Table 7. Coding of state and quasi-state bodies

State (quasi-state) body	**№ переменной**
Interdepartmental Commission on the Nonproliferation of Coronavirus	1
Ministry of Health	2
Ministry of Education and Science	3
Ministry of Trade and Integration	4
Ministry of National Economy	5
Ministry of Internal Affairs	6
Ministry of Labor and Social Protection of Population	7
Ministry of Information and Social Development	8
Ministry of Digital Development, Innovation and Aerospace Industry	9
National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken"	10
SK "Pharmacy"	11
Health insurance fund	12

The initial data for the analysis, containing region codes and average levels of perception of the management efficiency of public and quasi-public sector organizations in 17 regions of Kazakhstan, are shown in Table 8. It contains the average scores given by residents of the regions for each state and quasi-government body. The lines are coded numbers of regions by columns of controls.

Thanks to the use of statistical tools, all regions were divided into classes based on a certain set of parameters

The purpose of this analysis is to break down regions into classes, each of which corresponds to a certain risk group. Observations that fall into one group are characterized by the same level of potential for conflict *(activity).* Cluster analysis makes it possible to identify groups *(clusters*) of objects for given variables. The program automatically determines the number of existing clusters.

Table 8. Initial data for analysis

Region	Interdepartmental Commission on the Nonproliferation of Coronavirus	Ministry of Internal Affairs	Ministry of Information and	Social Development	Ministry of National Economy	Ministry of Education and Science	Ministry of Trade and Integration	Ministry of Labor and Social Protection of Population	Ministry of Digital Development, Innovation and Aerospace Industry	Ministry of Health	National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken"	SK "Pharmacy"	Health insurance fund
1	2,65	2,85	2,75	2,57	2,65	2,7	2,6	2,72	2,62	2,54	2,2	2,35	
2	2,67	2,82	2,69	2,49	2,67	2,58	2,63	2,55	2,74	2,62	2,1	2,26	
3	2,88	2,99	2,81	2,61	2,78	2,93	2,77	2,65	2,91	2,93	2,61	2,71	
4	3,08	3,16	2,99	2,86	2,95	3	2,85	3	3,08	2,9	2,5	2,76	
5	2,61	2,8	2,74	2,35	2,74	2,54	2,69	2,67	2,74	2,69	2,43	2,65	
6	2,63	2,72	2,91	2,69	3	2,81	3,13	2,59	2,81	2,78	2,34	2,47	
7	2,74	2,73	2,82	2,56	2,86	2,5	2,85	2,71	2,82	2,73	2,5	2,78	
8	3,18	3,18	3,18	3,1	3,2	3	3,13	3,04	3,31	3,08	2,77	2,73	
9	3,08	3,15	3,19	3,07	3,08	3,09	3,17	3,15	3,11	3,13	2,69	2,89	
10	3,04	3,04	2,96	3,09	3,09	2,91	3,2	3,09	3,32	3,05	2,02	3,31	
11	3,02	2,97	3,13	2,77	2,95	2,95	2,93	2,95	2,97	2,92	2,65	2,72	
12	3,33	3,42	3,35	3,3	3,28	3,28	3,33	3,28	3,26	3,33	3,05	3,16	
13	2,83	3,26	2,87	2,79	3,36	2,66	3,15	2,85	2,87	2,72	2,45	2,53	
14	2,6	2,79	2,77	2,52	2,8	2,66	2,63	2,61	2,52	2,54	2,06	2,23	
15	3,15	3,31	3,29	3,25	3,08	3,42	3,04	3,1	3,29	3,04	3,04	3	
16	3,42	3,52	3,52	3,29	3,19	3,14	3,76	3,57	3,38	3,29	3,33	3,38	
17	3	2,91	2,88	2,96	3	2,8	2,93	2,97	3,07	2,91	2,81	2,89	

All regions are divided into three clusters according to the numbers given in Table 9. For example, Nur-Sultan – c1, Shymkent – c2.

Table 9. Coding of state and quasi-state bodies

Region	The average	Std. deviation	Cluster	Cluster average
1.Nur-Sultan	2.6	0.1675327	1	2,638
2.Almaty	2.57	0.1961959	1	
5. Aktobe region	2.64	0.1290404	1	
6. Almaty region	2.74	0.2089834	1	
7. Atyrau region	2.72	0.1224471	1	
14. Mangystau region	2.56	0.2105728	1	
3. Shymkent	2.8	0.1262698	2	2,886
4. Akmola region	2.93	0.1687132	2	
11. Karaganda region	2.91	0.1286429	2	
13. Kyzylorda region	2.86	0.2638212	2	
17. Turkestan region	2.93	0.0755344	2	
8. East Kazakhstan region	3.08	0.1724415	3	3.183
9. Zhambyl region	3.07	0.1338877	3	
10. West Kazakhstan region	3.1	0.1248582	3	
15. Pavlodar region	3.17	0.1330804	3	
16. North Kazakhstan region	3.4	0.1666194	3	
12. Kostanay region	3.28	0.0910647	3	

The visualization of cluster analysis on the map is shown in figure 14.

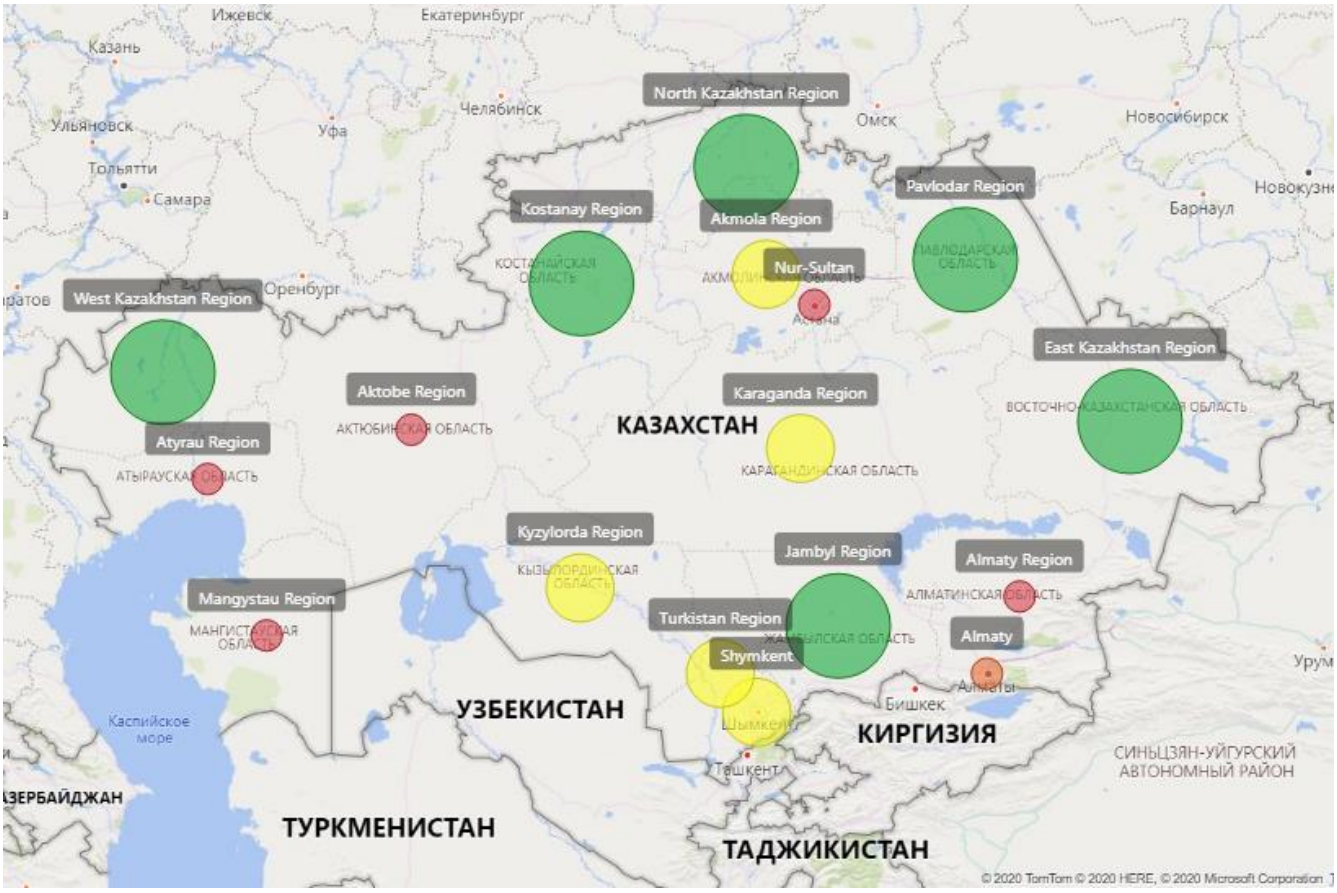


Figure 14. Cartogram of cluster analysis results.

Interpretation of cluster analysis results:

The first cluster *(6 regions):* Nur-Sultan, Almaty, Aktobe region, Almaty region, Atyrau region, Mangystau region. The respondents from the regions included in this cluster give the lowest assessment of the efficiency of the state. organs during a pandemic. The cluster characterizes **regions with a potential for conflict** *(civil activity)* – on average, at the level of 2.638.

The second cluster *(5 regions):* The cluster characterizes **the regions with an average factor of conflict potential** *(civic activity)* – on average at the level of 2.8.

The third cluster *(6 regions):* The cluster characterizes **the regions with the lowest factor of conflict potential** *(civic engagement)* – an average of 3.18.

Clustering made it possible to measure **the level of social conflic**t *(tension)* **in the territorial context**. Social conflict potential is defined as a set of tensions of a social, mental and socio-psychological nature, which, under certain conditions, can lead to conflicts in society. Conflict-relatedness is a mismatch, unmet expectations, tensions caused by the actions of various social communities or political leaders [63].

The results of the cluster analysis showed the zones where the likelihood of social conflicts is high, which makes it possible to develop a set of preventive measures to

prevent them. On the other hand, the "red regions" are potentially promising in terms of the development of civil society. “Green regions” have a pronounced level of social optimism due to the action of other factors: population density, economic situation, supply of medicines, etc.

The information obtained as a result of cluster analysis can serve as an evidence base for balanced decision-making by public authorities. We are talking about the correct interpretation of the results of any analysis and **implementation of approaches and principles of differentiated management and organization of communication with the population**.

The modeling database can become an evidence base **for developing a communication strategy in a crisis**. The criteria for measuring the effectiveness of the communication activities of a state body are information openness, the degree of media activity, the level of trust in information coming to citizens from this body.

For the indicator characterizing “Interaction with society at all stages of policy development and implementation to maximize its compliance with public needs (P_3)”, the ***“Voice and Accountability”*** index can be used. The index includes indicators that measure various aspects of political processes, civil liberties and political rights. Indicators of this category measure the degree to which citizens can participate in the choice of government and other authorities, the degree of independence of the press, an assessment of the level of freedom of speech, freedom of association, and other civil liberties.

For the indicator characterizing "Informational openness of power (P_4)", you can use the ***international ratings of information activity*** E-Government Development Index [64], The Networked Readiness Index[65], Open Data Barometer[66], The Global Innovation Index[67].

The analysis of the dynamics in these ratings is indicative in assessing the effectiveness of state bodies through the prism of their openness and availability of databases. For example, the deterioration of indicators in the Open Data Barometer (*ODB*) *(from 37th place in 2013, 49 – 2014, 56 – 2015, 59 – 2016 and Kazakhstan's non-participation in the 2017 ratings)* may be insufficient work in terms of the use of open data in public administration, business and the non-profit sector of Kazakhstan, and the selectivity of its participation in international processes in the development of the Open Government.

The Open Data Barometer is an international index that measures how willing countries are to open data. It has three parts. First, the legislative base is analyzed for the existence of a law on access to information, protection of personal life, freedom of speech, and the quality of performance is assessed. It is checked whether communication is established between government agencies, private business, civil society and journalists. The second part of the barometer looks at how important data can be obtained – land registry, transport schedule, information about the state budget and public procurement, and also checks their openness *(how often they are updated, is there a*

license, is the data free). The third part examines the impact on real life, how the presence of this data develops the business and organizations.

The study of the positions of Kazakhstan and Sweden for 2016 allows us to draw conclusions about the readiness of countries to use open data in 4 directions, makes it possible to identify the problems and growth zones of the country *(Figure 15)* [68].

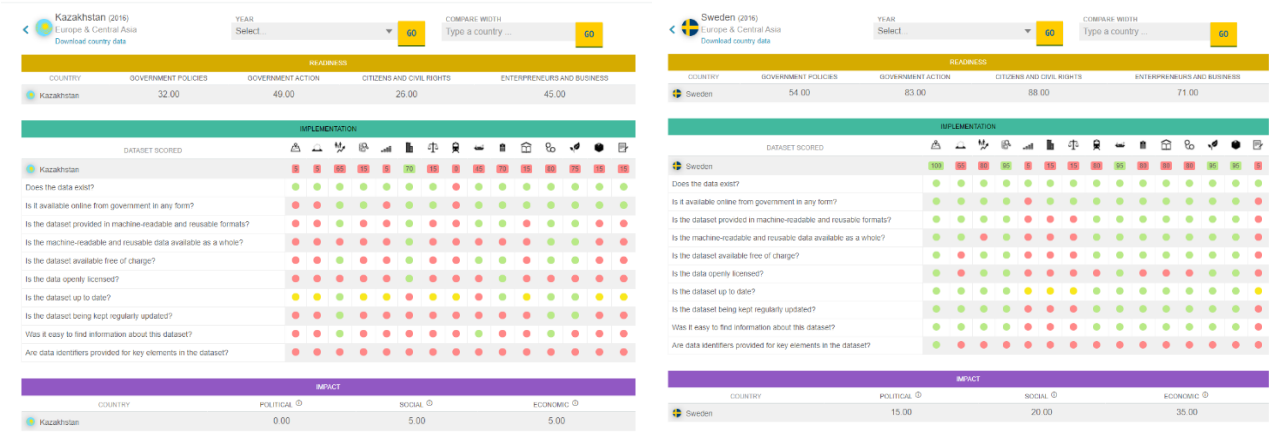


Figure 115. ODB ranking data for 2016 for Kazakhstan and Sweden [68]

The assessment of open data ***on ODB*** in points was carried out *(Figure 16)*. The assessment of the impact of open data on policy in Kazakhstan is insignificant – zero, and in Sweden – 29 points. The greatest influence in both countries is on the social sphere *(32/4*), then on business *(50/10).*

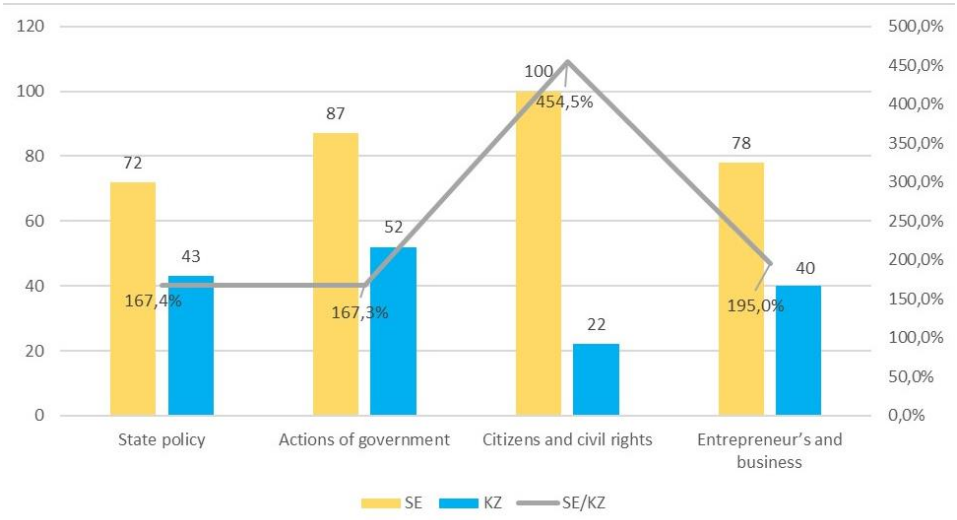


Figure 16. Assessment of readiness to implement open data. (Compiled from the source [68])

According to estimates of the ***country's readiness to use open data***, Kazakhstan lags behind Sweden in terms of sectors: state policy by 167.4%, government actions by 167.3%, citizens and civil rights by 454.5%, entrepreneurs and business by 195.0%. The most significant differences are observed in the sectors «citizens and civil rights» and «entrepreneurs and business» *(Figure 17).*

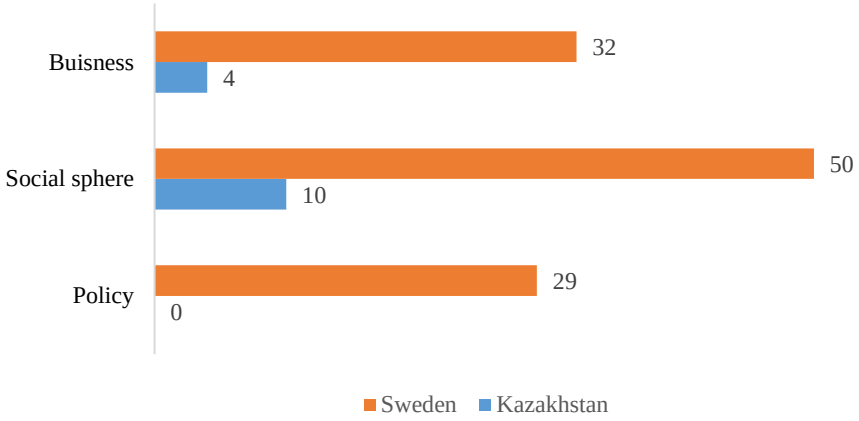


Figure 127. Assessment of the impact of open data *(Compiled from the source [68])*.

According to the ***E-Government Development Index*** *(EGDI),* there is an improvement in Kazakhstan's position as a leader among the countries of the Commonwealth of Independent States *(CIS)* and developing countries that have no access to the sea. The report "UN e-government review for 2020" notes the positive impact of the state program "Digital Kazakhstan" for 2018-2022. Many projects of the program began to bring a positive economic effect [69]. Over the past two years, the number of public services in Kazakhstan available digitally has grown to 83 percent. Telegram bot processes 26 services.

The EGDI indices for the development of e-government in Kazakhstan include: Online Services Index *(OSI)*, Telecommunications Infrastructure Index *(TII)* and Human Capital Index *(HCI).* The growth leaders in this index are Denmark, South Korea and Estonia. Kazakhstan has an EGDI index of 0.8375, which corresponds to a fairly high level of digital development.

The authors of the UN report praised the ongoing training programs for civil servants of Digital Kazakhstan. Kazakhstan's ***Electronic Participation Index*** *(EPI)* climbed 16 positions to 26th. EPI is at the heart of the concept of “hearing state” proposed by President K-Zh. Tokayev [70]. It measures the involvement of citizens in the decision-making process, assesses the transparency and openness of the state.

Kazakhstan has a high enough potential to improve the use of open data. The goal of the Open Data project in Kazakhstan is to introduce the principle of openness, accessibility and the possibility of re-using data generated in the course of their activities by state, quasi-state organizations, as well as organizations with state participation. The main tasks of the "open data" portal are:

- reducing the burden on government bodies;
- increasing the level of awareness of the population about key and socially significant areas of government activity;
- building a more open, accessible and competitive economy;

- reducing the costs of citizens and representatives of SMEs to find the necessary data;

- improving the quality of life of the population through the use of new applications based on open data;

- achievement of target indicators specified in the official documents of the country.

Opening up access to data has economic and social benefits. Some of the valuable datasets include transport, cartography, health, environment, demographics, and real-time emergency data. Open data fosters connections between the public, private and research sectors, stimulates business activity and develops knowledge that can benefit all citizens. Also assists in developing evidence-based solutions leading to more informed policy, research and social outcomes [71].

Many countries around the world demonstrate successful cases related to the implementation of Open data projects. The TASC study in Ireland showed that the income of SMEs from the reuse of government data is from 101-486 million dollars a year. In Canada, access to open data allowed us to analyze and detect losses of $ 3.2 billion from fraudulent actions with charitable foundations. In the United States, a project has been implemented that allows you to find housing based on the length of the trip to work.

Best practices for using open data can be found on the electronic resource *www.benefits.gov* [72] – this is an online resource that helps any U.S. citizen find the Federal benefits they are eligible for. The same social benefits website covering all public and private programs is also needed in Kazakhstan, especially in the context of the coronavirus pandemic. **Having a single data source reduces the time and cost of searching for information, eliminates information asymmetry, increases the level of public satisfaction, and therefore improves the quality of public administration.**

There are estimates of the overall economic impact of using applications based on open data, for example, in the field of public transport in Moscow. The economic effect of their use amounted to more than 58 billion rubles a year [73].

Information support for Kazakhstan's participation in international ratings remains at an extremely low level. **In order to increase the efficiency of management, it is advisable to form a publicly available database with ratings for various indicators, by year with the corresponding analytical reports**. For example, on the website of JSC National Infocommunication Holding «Zerde» as of 07.11.2020 in the section International ratings in ITC sphere, the report is available only for 2017 [74] *(Figure 18)*, which indicates a limited evidence base for making management decisions and analysis.

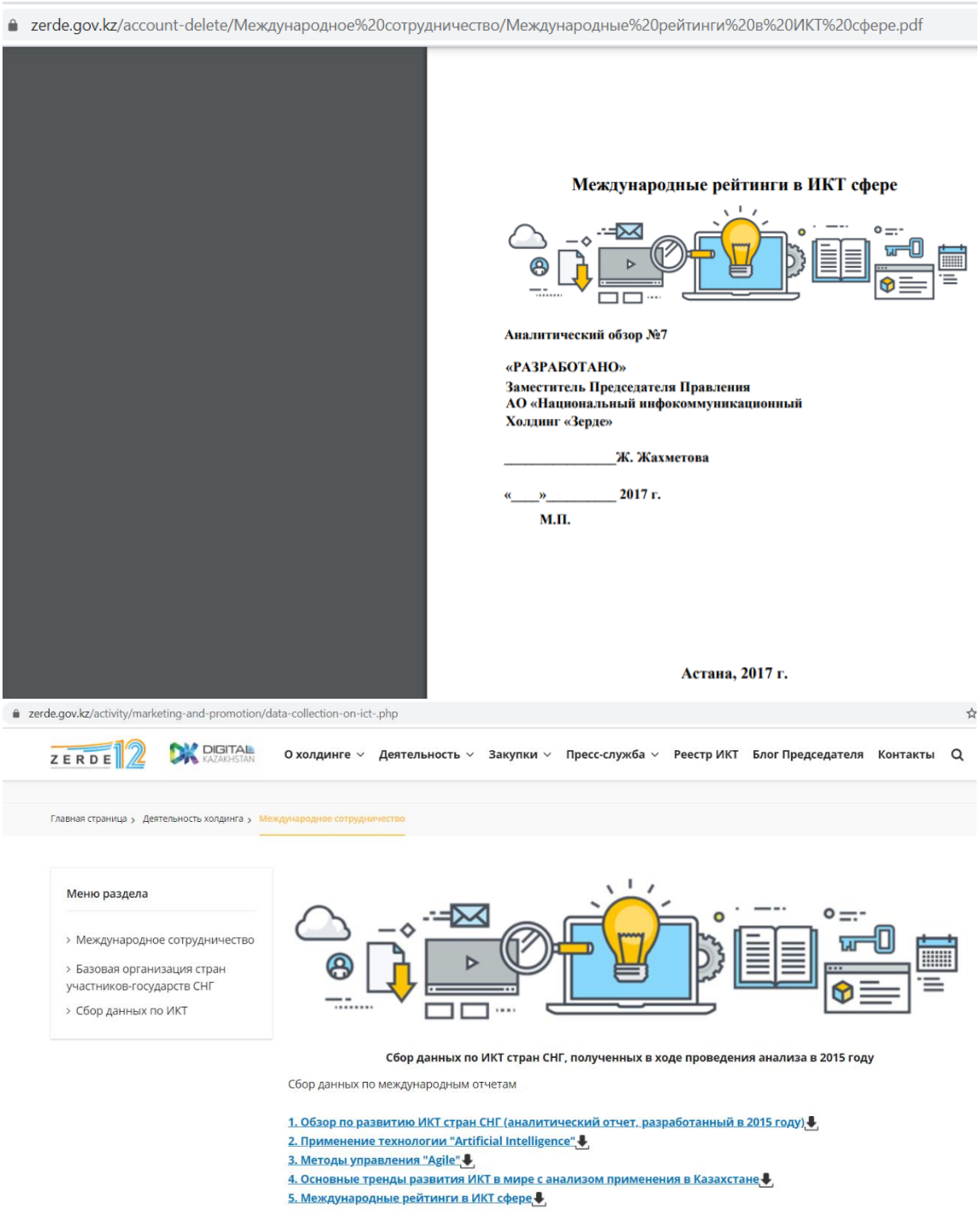


Figure 13. Report in the section "International ratings in ITC sphere"

Open data is believed to be data that is freely available and distributed on the Internet free of charge, in a machine-readable format – it can be analyzed, compared and combined with other data from other sources.

If we talk about measuring the effectiveness of public administration, through assessing information openness, then in Kazakhstan there is no progress in access to

information. This fact was noted in the interim report of the 20th monitoring meeting of the Istanbul Anti-Corruption Action Plan [75].

This problem has been actualized in connection with the implementation of many government programs that are associated with significant government spending. In this direction, it is necessary to manage state assets, monitor and control the expenditure of budget funds. It is necessary to evaluate the effectiveness of each program and its contribution to the development of the economy, in particular, to the development of specific economic entities.

An electronic register of Kazakhstani entrepreneurship is needed, which will contain all companies, including those that receive government support measures. According to the deputy chairman of the board of NPP E. Zhumagaziev, in 2018 there is no list of companies that received subsidies from the state in 2017 at the Ministry of Agriculture and in akimats. Even with a list, it will be difficult to calculate the effect of these subsidies [76]. Thus, **the need for a request for an assessment of government programs and the formation of a base for sound data analysis is being actualized.**

Openness of data is a source for controlled social changes, it affects the change in the rules of behavior of the authorities, increasing its responsibility and efficiency, and contributes to a qualitative change in society itself. Closedness, concealment of the truth, monopoly on information is the main weapon of the bureaucracy, with the help of which it tries to impose its will on society, reducing public control. In those countries where people have full information about the activities of the authorities, the level of corruption decreases, the state machine observes the laws and works more responsibly and effectively.

According to the OECD approaches, the state can be considered open when business, public organizations and citizens can:

- receive relevant and understandable information;
- receive government services and interact with the government;
- take part in the decision-making process [77].

Based on the analysis, it becomes obvious that high efficiency of management activities is the most important component of the optimal development of socio-economic and / or socio-political structures. Efficiency is not characterized by any of their interactions, but only controlled, and this is actualized in a pandemic**. In a crisis situation, it becomes impossible to make effective management decisions if they are not based on the principles of evidence - based policy**. The basis for the implementation of evidence-based policy and effective public administration are clear and understandable facts, open, modern, fast-functioning databases. **In developing an anti-crisis strategy of the state, it is necessary to actively use the arsenal of all analytical tools, to form an open data base to provide a high-quality evidence base for management decisions.**

2.2 Analysis of measures in the context of a pandemic on the activities of economic entities in Kazakhstan

An important part of reforming public administration is the analysis of the effectiveness of the decisions made, the assessment of their effectiveness should be expressed through the influence of measures of influence on specific subjects of the national macrosystem. It is necessary to analyze the measures taken by the government on a point by target group with the identification of specific effects. This is especially important in times of crisis, for prompt response and management decision-making.

For a qualitative analysis and assessment of the effectiveness of public administration, a full-fledged evidence base is required, including statistical data in the format of long series, which requires access to "big date" resources. In particular, there is a need for meaningful information on the movement of cash resources by industry and sphere and the ability to track the planned results of the implemented measures. In a crisis, the problem of providing an evidence base in making high-quality and operational management decisions is actualized. Within the framework of this study, an analysis of the measures taken by the state in the context of a pandemic on the activities of economic entities in Kazakhstan was carried out on the basis of the *principle of evidence-based policy.*

Since March 16, 2020, during the state of emergency, Kazakhstan has adopted and is implementing a package of measures of economic and social support for the economy as a whole in the amount of 5.9 trillion tenge, of which: 3.34 trillion tenge for support of business entities *(Figure 19).*

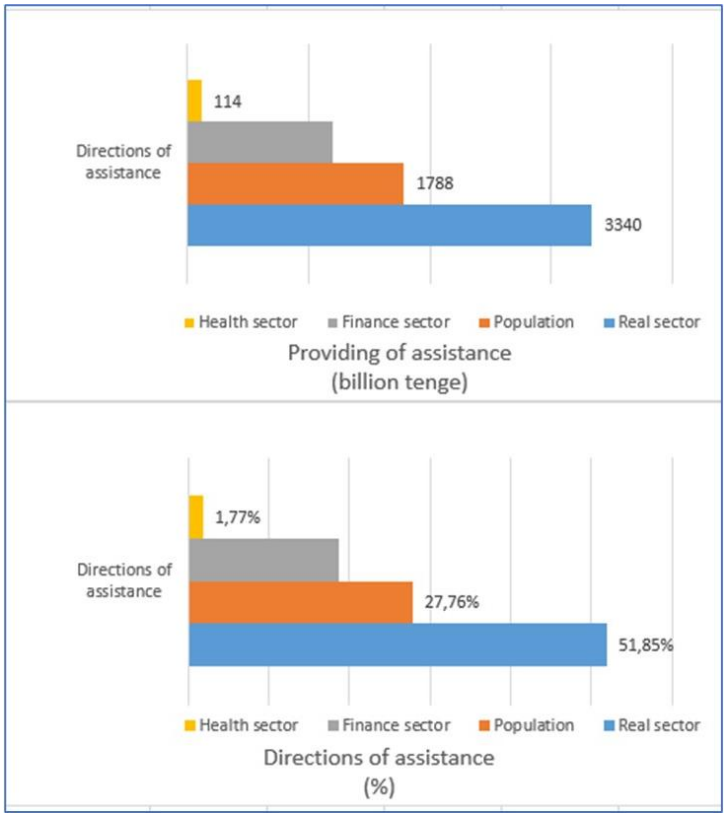


Figure 14. Providing assistance in the following areas

The volume of government spending on overcoming the crisis according to the Eurasian Commission is given in the table, detailed by amounts, specifying areas and support measures *(March, April, May 2020)* [78].

Thus, the largest assistance was provided to the real sector of the economy-51%, the population -27%, the financial sector -18%, and healthcare -1.77% of the total amount of allocated funds. The main measures to support the real sector are: concessional lending to working capital of business entities at 8% and expansion of concessional lending to investment projects at 6% per annum *(the "Economy of simple things" program)*; provision of various types of tax benefits, including payments from the payroll Fund; additional financing under the "Economy of simple things" program to support domestic producers; additional financing for the implementation of the "business Roadmap" program to strengthen guarantee measures; development of social and engineering infrastructure in rural localities within the framework of the "Auyl-El besigi" project; provision of deferred payments of loans and credits for SMEs; subsidizing the agro-industrial complex; additional financing of housing construction *(Figure 20).*

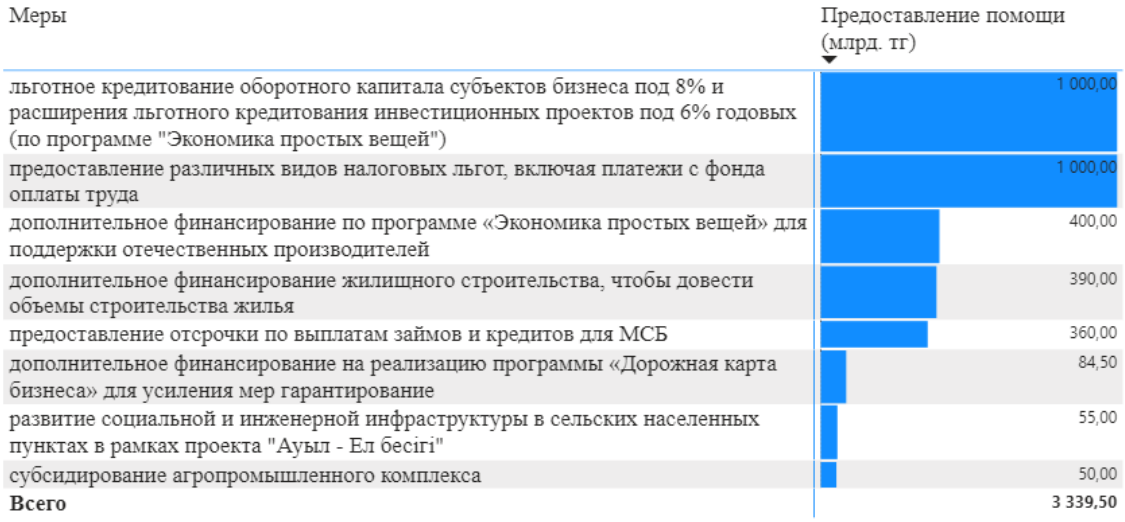


Figure 20. Distribution of funds by state support measures

Various measures to support real sector entities have enabled us to cover 136 thousand organizations, create 240 thousand new jobs, additional funding for the implementation of the business Roadmap program to strengthen the guarantee measures, about 16 thousand additional jobs are being created, additional housing construction financing will allow to increase the volume of housing construction in the country to 15 million square meters *(table 10).*

Table 10. Support for business entities.

Measures	**Provision of aid (billion tenge)**	**Aid provision% of GDP**	**Assessing the impact of a measure**

Support for business entities (total)	**3 341.50**	**4.85**	
Providing various types of tax benefits, including payments from the payroll	1,000	1.45	More than 136 thousand organizations covered
Concessional lending of working capital to business entities at 8% and expansion of concessional lending for investment projects at 6% per annum (under the "Economy of Simple Things" program)	1,000	1.45	Creation of about 240 thousand new jobs.
Additional funding for the Economy of Simple Things program to support domestic producers	400	0.58	
Additional funding for the implementation of the Business Roadmap program to strengthen measures	84.5	0.12	It is planned to create an additional 16 thousand jobs.
Development of social and engineering infrastructure in rural areas within the framework of the project "Auyl - El besigi"	55	0.08	
Granting a grace period for repayment of loans and credits for SMEs	360	0.52	
Subsidizing the agro-industrial complex	50	0.07	
Additional housing finance to boost housing construction	390	0.57	to increase the volume of housing construction in construction, in order to bring the volume of housing construction in the country to 15 million square meters

This analysis was carried out according to the data of the Eurasian Economic Group; the given data do not allow making a full assessment of the effectiveness of government measures and their results. They are presented for a short period, and as a result of the analysis, discrepancies in total amounts and detailing by areas of expenditures were revealed. Thus, the total amount of funds spent, calculated in detail, amounted to 6441.3 billion tenge *(instead of 5900 officially announced),* which is 9.33% of GDP *(instead of 8.6% officially announced)*. The difference between the figures is 543.3 billion tenge [78]. There is a problem of information deficit in the operational data of anti-crisis measures and results, as well as the forms of its provision and actualization *(month, quarter)*, systematization and structuring, this greatly complicates the analysis of the adopted by the state and the identification of specific effects. Whereas, the anti-crisis policy of the state to support the subjects of the real sector is diverse and includes various mechanisms and instruments with financial support. In order to improve the efficiency of the use of budgetary funds, the management of state assets, it is necessary to continuously monitor the movement of cash resources with an analysis of their intended use.

Comprehensive plan to restore economic growth until 2020, consists of 164 measures in 10 areas *(May 20, 2020)* providing the following areas of support [79]:

- tax incentives;

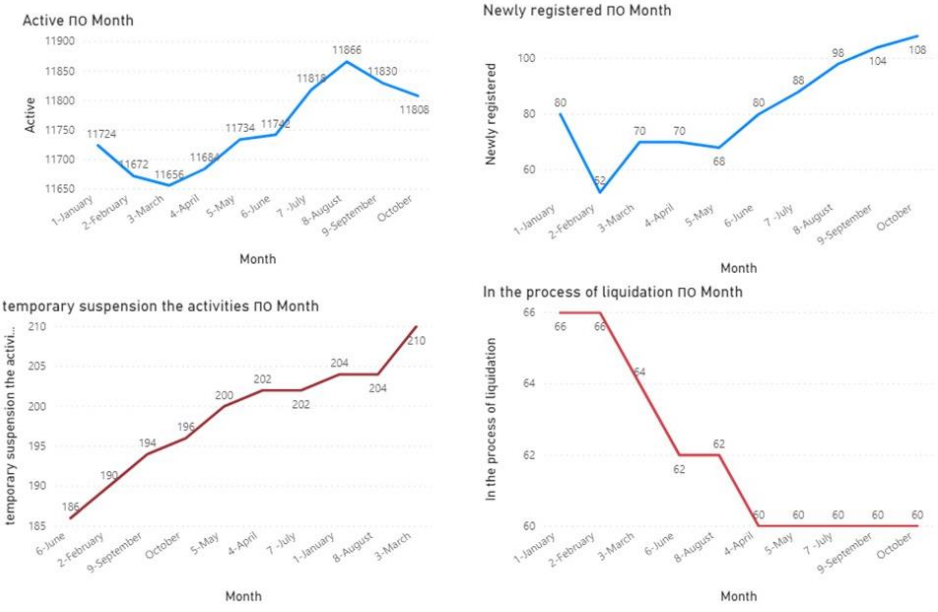
- creation of an industrial development fund;
- simplification of lending procedures for SMEs;
- export promotion;
- support for domestic production;
- guaranteed purchase of agricultural products.

In addition to the Comprehensive June 18, 2020 Plan, 43 additional business support measures have been developed in the following areas [80]:

- simplification of purchases;
- development of local content;
- expanding the possibility of financing the leasing of agricultural machinery;
- expanding opportunities for refinancing loans;
- development of export of goods;
- simplification of procedures *(200 amendments were made to 6 codes and 33 laws)*;
- improving the security of real estate transactions;
- acceleration of registration of enterprises;
- reduction of procedures when connecting to power grids;
- translation of a number of services into electronic format;
- Simplification of procedures for the construction of technically simple objects.

The measures taken, depending on the size of the enterprise and the time period, change the business activity of enterprises in different ways. These changes can be interpreted as a result of the impact of business support programs to assess their impact on specific indicators in general.

So, since January 2020, there has been a continuous increase in the number of active small enterprises from March to August, respectively, from 98.3 to 194.3 thousand units, from August to October a decline to 162.3 thousand units. From January to July, the number of newly registered enterprises has been continuously increasing, from 43.7 to 49.8 thousand units. accordingly, then there is a decline to 48 thousand units. in the month of October. The number of enterprises in the process of liquidation decreases from May to October, from 6701 to 6288 units. accordingly. The number of enterprises temporarily suspended their activities is growing from January to October, from 97.3 to



103.4 thousand units. accordingly [81] (*Figure 21*).

Figure 15. Number of small businesses by month and status in 2020

There is a continuous increase in the number of active medium-sized enterprises from March to August 2020, from 5828 to 5933 units, respectively, from August to October, the decline to 5004 units. Since may, the number of newly registered businesses has been continuously increasing. The number of enterprises that have temporarily suspended their activities remains approximately at the same level – 99 enterprises per month, the number of enterprises that are in the process of liquidation also remains approximately at the same level – 30 enterprises per month *(Figure 22).*

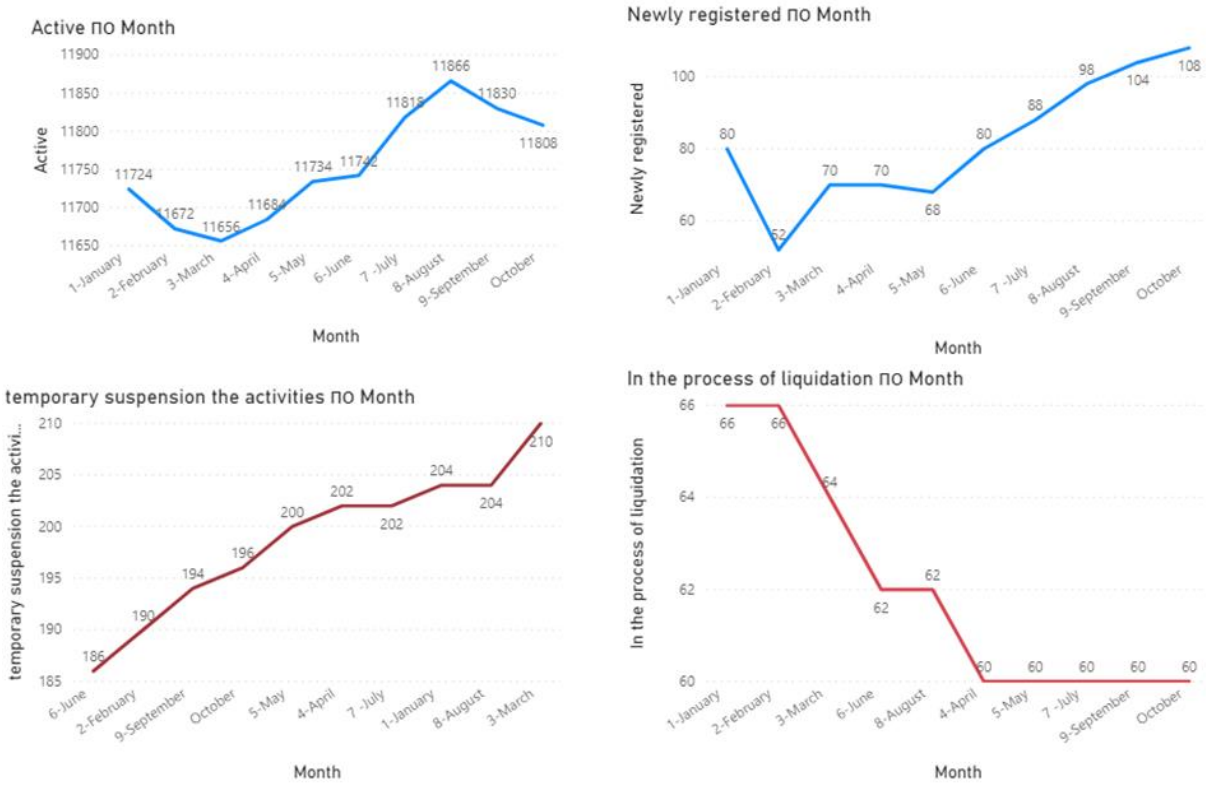


Figure 16. Number of medium-sized enterprises by month and status in 2020

There is a continuous decline in the number of active large enterprises from January to October 2020, from 2288 to 2238 units. respectively. From March to October, the number of newly registered enterprises continuously increases from 20 to 29 enterprises, respectively. The number of enterprises that temporarily suspended their activities decreased from February to October, from 40 to 30 units. respectively. The number of enterprises in the process of liquidation was approximately at the same level – 12 enterprises per month (*Figure 23*).

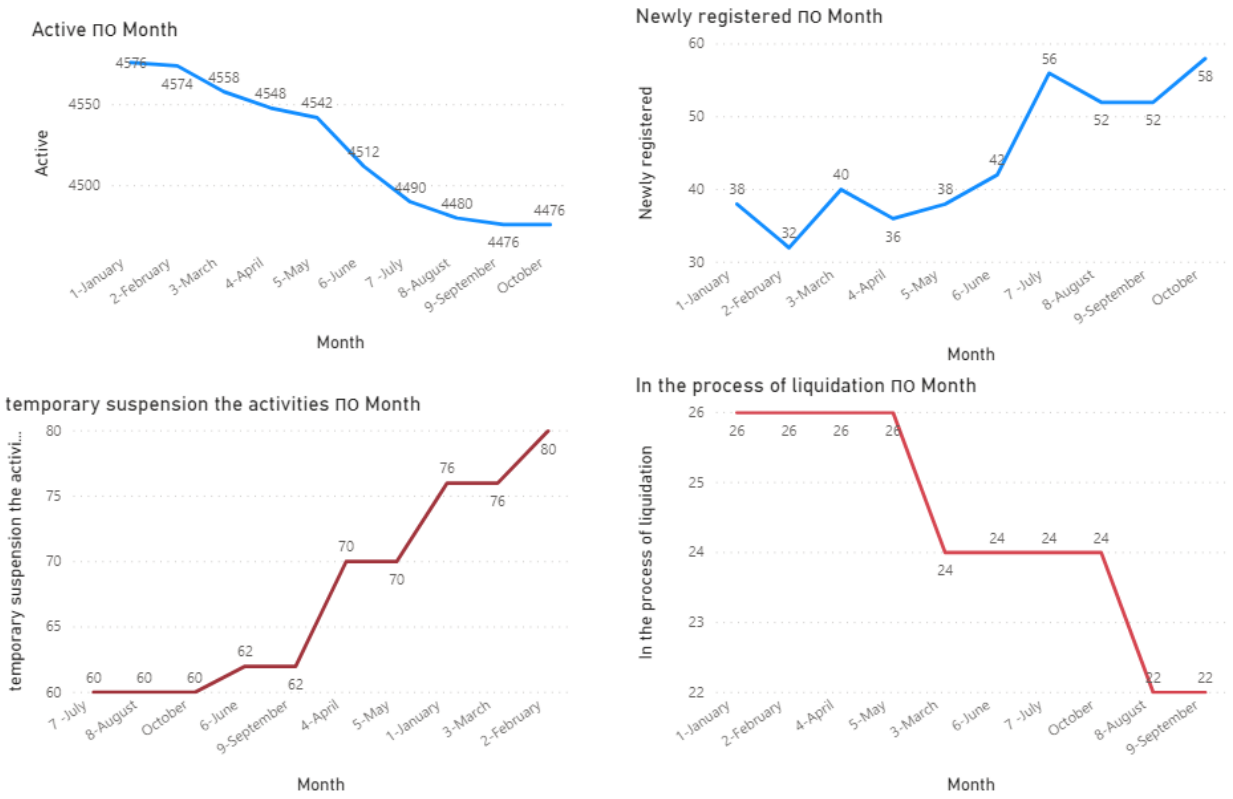


Figure 173. Number of large businesses by month and status in 2020

Note that it is difficult to differentiate and assess the impact of government programs on the economic activity of enterprises based on existing statistical data. It is important to identify and evaluate the effect of each program on the performance indicators of economic entities. In particular, workload, working hours of employees of enterprises *(working part-time, part-time, idle, etc.)*.

Large and medium-sized businesses generate 80% of all tax revenues and employ more than 60% of the country's working-age population. Due to the deterioration of the logistics of goods, raw materials and components, the decrease in demand, large and medium-sized enterprises are forced to limit their production activities, which affects the employment of their employees.

Local authorities, together with enterprises, are developing measures to preserve employment, which are drawn up in the form of road maps, unfortunately, the effect of these measures is not reflected in statistical data, so it is difficult to assess it. So, in the 2nd quarter of 2020, the number of employees of large and medium-sized enterprises working part-time or part-time increased by 2908 people, or 15%, compared to the 1st quarter. The largest increase in the number of part-time or part-time workers in the second quarter compared to the first, was recorded in the Akmola region 1462 workers, the largest decrease in growth in the North Kazakhstan region 302 workers [82] *(Figure 24)*.

General	Deviation 2-1 q	Growth rate to 1 q
Atyrau	372	572%
Mangystau	930	454%
Shymkent	626	160%
Akmola	1462	118%
East Kazakhstan	195	10%
Almaty	302	8%
Karaganda	136	8%
Kostanay	39	2%
Kyzylorda	13	1%
Zhambyl	-17	-2%
Aktobe	-72	-8%
West Kazakhstan	-44	-9%
Nur-Sultan	-275	-11%
North Kazakhstan	-302	-18%
Almaty	-190	-21%
Pavlodar	-17	-35%
Turkestan	-250	-62%
Overall	2908	15%

Figure 18. Changes in the number of part-time or part-week employees of large and medium-sized enterprises due to downtime in production 1-2 quarter of 2020

The number of employees of large and medium-sized enterprises temporarily unemployed due to downtime in production for the 2nd quarter compared to the 1st quarter increased by 16370 employees, the largest increase in Almaty is 7305, and the decrease in the Turkestan region is 56 employees *(Figure 25).*

General	Deviation 2-1 q	Growth rate to 1 q
Atyrau	2676	578%
Mangystau	1311	454%
Shymkent	-53	13%
Akmola	1034	288%
East Kazakhstan	701	10%
Almaty	7305	107%
Karaganda	778	277%
Kostanay	1	0%
Kyzylorda	560	50%
Zhambyl	129	39%
Aktobe	154	28%
West Kazakhstan	10	6%
Nur-Sultan	540	29%
North Kazakhstan	8	0%
Almaty	858	110%
Pavlodar	414	229%
Turkestan	-56	-6%
Overall	16370	98%

Figure 19. Change in the number of temporarily unemployed employees of large and medium-sized enterprises due to downtime in production 1-2 quarter of 2020

The number of employees of large and medium-sized enterprises working part-time for the 2nd quarter compared to the 1st quarter decreased by 1648 employees, the largest decrease in Almaty by 615, the largest increase by 181 employees in the city of Shymkent. *(Figure 26)*

General	Deviation 2-1 q	Growth rate to 1 q
Shymkent	181	83%
Kyzylorda	114	148%
Mangystau	70	14%
Aktobe	56	9%
Turkestan	31	10%
Kostanay	23	2%
Akmola	0	0%
Almaty	-37	-6%
North Kazakhstan	-52	-7%
Pavlodar	-68	-7%
Atyrau	-90	-17%
Zhambyl	-168	-33%
West Kazakhstan	-306	-19%
Nur-Sultan	-369	-13%
East Kazakhstan	-397	-19%
Karaganda	-397	-17%
Almaty	-615	-11%
Overall	-1648	-8%

Figure 206. Change in the number of part-time employees of large and medium-sized enterprises 1-2 quarter of 2020

Based on the analyzed statistical data, it is currently impossible to assess the impact of government response measures. LEB develops and implements roadmaps with large enterprises for a controlled flow of labor resources, signs memorandums to preserve jobs and wages. It is necessary to integrate information on road maps and memorandums with enterprises, as well as information on the participation of enterprises in a certain state program into the database of the National Security Service of the Republic of Kazakhstan - the business register. Published statistics should contain this information. Information about the participation of the enterprise in the state program when hiring workers should also be reflected when publishing vacancies on the electronic labor exchange *(www.enbek.kz).* This measure is necessary for monitoring and evaluating the effectiveness of state programs. For example, it would be possible to find out how many vacancies were formed thanks to the state program.

The important objects of support are export enterprises, especially the non-resource sector, which provide foreign exchange earnings to the country's budget. A measure of their support, improving interaction with the EU countries, is the agreement

on expanded partnership and cooperation between the European Union and its member states, on the one hand, and the Republic of Kazakhstan, on the other hand, signed on December 21, 2015, which entered into force on March 1, 2020 of the year. The agreement outlines 29 areas of cooperation. Including trade and economic issues, trade, investment [83].

For export enterprises of the non-resource sector, manufacturing entities will be able to receive preferential loans under the “Business Road Map-2025” program. Export crediting will also be provided [84].

Digital tool for the analysis of data is the "analytical portal of foreign trade of Kazakhstan" created by the Bank of the Development of Kazakhstan (*BDK*) [85]. All data that the program uses is publicly available on the websites of the State Revenue Committee of the Ministry of Finance of the Republic of Kazakhstan [86] and the National Bureau of Statistics [87]. This tool for data analysis and visualization can be freely used by business entities.

The impact of support measures can be monitored by general indicators of foreign trade. In 2020, as a result of the unfavorable economic situation caused by the pandemic, exports decreased by 48%, trade fell by 43%, and the trade balance decreased by 70% compared to 2019 *(Figure 27)*.

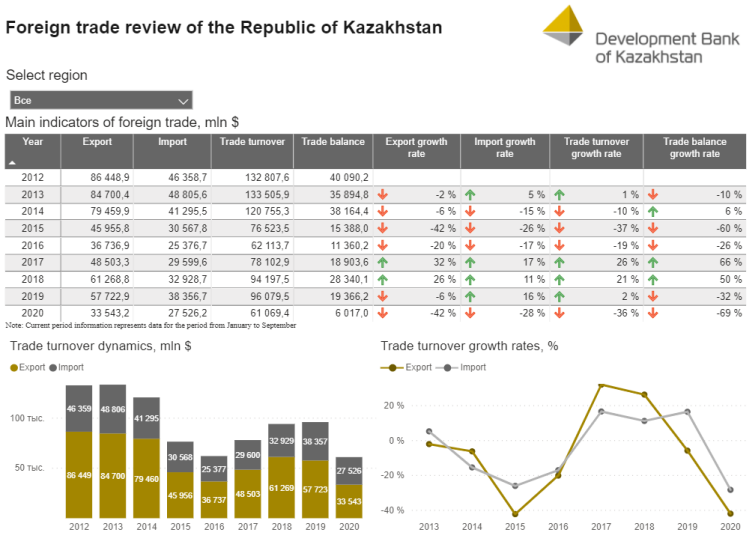


Figure 21. Kazakhstan's foreign trade indicators for export and import 2020

For one of the most significant raw materials exported by Kazakhstan - "Crude oil and oil raw materials obtained from bituminous materials", there is a negative growth rate with all major trading partners with a share exceeding 2% compared to the corresponding period of the previous year, and a positive rate is observed only with India *(19.7%) (Figure 28).*

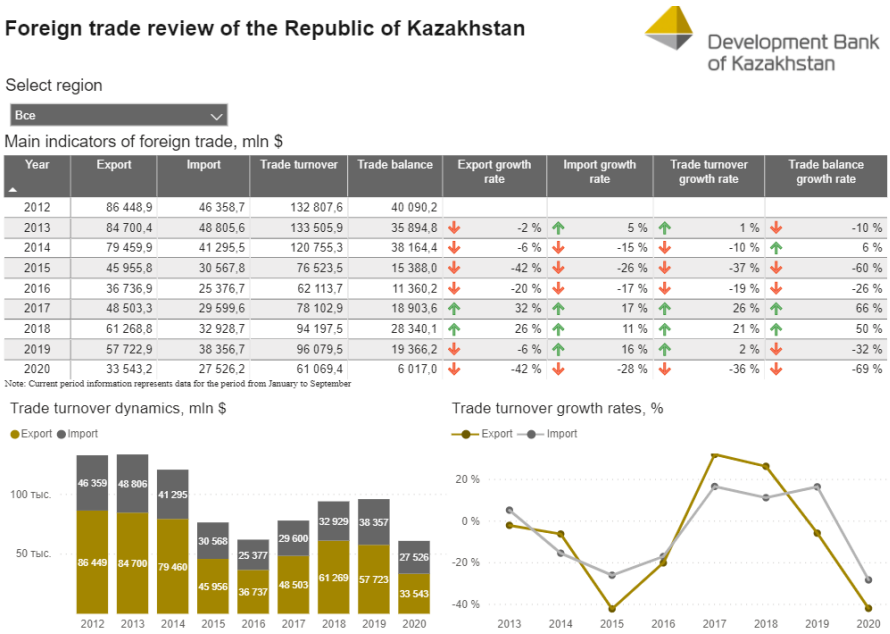


Figure 22. Statistics on the selected export product by trading partners

The effectiveness of support measures depends on the ability to highlight and assess the impact of a certain state program or measure through official operational statistical data, which are automatically loaded into the end-to-end analytics system that ensures the speed and convenience of information analysis. In practice, there are a number of problems with the use of data; they are published for a certain period in separate files for a month, quarter, six months, a year in a form not intended for machine processing, in various formats Excel, Word, pdf.

Let us present an algorithm for working with data as part of the management function of a government agency:

1. Search for data. Data on the economic activity of economic entities are located on the website of the National Security Service of the Republic of Kazakhstan. However, the global search is not found, you need to know the location on the site: Home-> Official statistics - > by industry - > enterprise Statistics->Statistics - >Express information - >Registered legal entities by type of activity and activity indicator;

2. Downloading files for each month. The data is presented in the form of a table that contains merged cells, the columns of which contain heterogeneous data. The content of the file needs to be structured;

3. Consolidation. Combine structured information from various files into one table.

4. Visualization of information for analysis;

5. Update. When updating information on the site, it must be manually updated.

Such work is very laborious and significantly increases the time for preparing data for making a decision.

To enhance the efficiency of working with data, you can use the successful Kazakhstani experience "Analytical portal of foreign trade of the Republic of Kazakhstan" The end-to-end analytics system created on the basis of MS Power BI makes it possible to monitor the turnover with a high degree of efficiency. The data is collected, structured and visualized in the form of dashboards, the update occurs automatically via the data exchange protocol between API programs, manual processing would have to combine and update hundreds of files. The portal allows full and free access to information for making managerial decisions for a business entity and government agencies [85]. There are commercial companies providing such information for a fee by subscription https://tradereport.kz/ru, https://kazdata.kz/.

The mechanism for the implementation of measures must be constantly improved so that assistance really reaches a specific subject of the state business support program, with the help of an effective organization of feedback with it. Opinions and proposals of business on improving government support measures that need to be taken into account when developing and adjusting support programs for business entities. Based on the analysis of a survey of 60 heads of SMEs and large businesses, a number of banks, development institutions and business associations of Kazakhstan in July 2020 by KPMG the following [88]. You can formulate the main opinions and wishes of business representatives:

1.Only less than half of the affected small and medium-sized businesses will be able to receive state support against the backdrop of the coronavirus pandemic in Kazakhstan, for the rest, assistance was not available;

2. Among the measures announced by the state, there are practically no measures to support big business, despite the fact that it is big business that generates 80% of all tax revenues and employs more than 60% of the country's working-age population;

3. The absence of a single information portal of state support and one operator for each state program, most of the respondents consider one of the key operational barriers to participation in state support programs;

4. About 90% of respondents believe that it is necessary to expand industry criteria and "reengineering" state programs for business support;

5. Improving the efficiency of existing and newly announced state support measures will improve the position of business within the already allocated funds;

6. The state and business need a common platform for a constructive and transparent dialogue: only direct discussion of experts, timely and sufficient support from business will help the country to overcome the crisis and lay the foundations for long-term sustainable growth.

The crisis requires an intensification of the dialogue between the state and business, the more efficiently the state support measures are implemented, the stronger the business adaptability will be, less borrowed funds will be required to overcome the economic consequences of the crisis and develop the economy.

Thus, to improve the efficiency of business entities, the following recommendations can be proposed:

1. Create end-to-end analytics in the Taldau information system or in the BI system based on related operational data in the most important areas of the economy, social sphere, demography, education, building dashboards for decision-making on the basis of models, allowing to improve the efficiency and quality of decisions.

2. Switch to a flexible policy of introducing restrictions based on risk assessment both by industry and by region *(weather, population density)*. For example, the likelihood of infection in banks and shops is much higher than, for example, in agriculture and construction.

3. Creation of a unified platform for state business support programs, which fulfill several goals:

- informing the business on the terms of all programs, searching for programs by personal profile;
- a dialogue platform between business, state. bodies and banks with fixing proposals and solutions developed;
- Integration of the data collected for each of the programs into one database, will allow obtaining complete information on each participant, assess the effectiveness of each program, and coordinate the activities of state bodies. The database of enterprises participating in state programs should be integrated with the database of the National Bureau of Statistics – the business register. In turn, this will make it possible to publish more complete statistical information on the economic activity of enterprises. This will allow tracking the contribution of a specific program to the formation of the target indicator.

4. Consider the possibility of introducing a new concept of *"anchor target indicators"* for the analysis and assessment of the contribution of a particular government agency in obtaining the overall result of the government program, for which several government agencies are responsible.

2.3 Assessment of the effectiveness of measures taken in Kazakhstan in the context of the pandemic *(Analytical report based on the analysis of data from the population survey and expert interviews)*

The current crisis has clearly shown the existing problems of the macrosystem. The dysfunctions of the public administration system have become prominent under the influence of a complex of internal and external challenges. The transformation of public administration is in active mode, but this process has a large dispersion corridor of deviations. An important part of reforming public administration is the analysis of the effectiveness of the decisions made, the assessment of their effectiveness. The study of

public opinion is one of the methods for assessing the effectiveness of public administration. Sociological tools make it possible to assess the public's perception of the effectiveness of measures taken by state authorities in response to external challenges.

This approach is especially relevant in the context of the crisis caused by the pandemic. The society provides the feedback necessary for adjusting the tactics and management strategy, where not only efficiency and timeliness are the priority criteria of efficiency, but also the quality of decisions made. This analysis is multifactorial, requiring a deeper and more systematic study. The proposed assessment system can serve as a source of primary information, on the basis of which data interpretation can be carried out, and the obtained conclusions will expand the possibilities of using the results of the survey and questionnaires in decision-making.

In this study, the effectiveness of government measures was assessed by deriving a set of indicators obtained on the basis of sociological survey data and a series of expert semi-structured interviews. The results of the survey and interviews can be considered one of the grounds for shaping the “agenda” in the crisis and post-crisis recovery period.

The use of sociological tools to assess the effectiveness of public administration reveals:

- the degree of efficiency of state regulation in conditions of a pandemic from the point of view of different members of society, public servants, business and NGO sector;
- the public's reaction to the crisis response measures in a pandemic.

The survey was conducted among citizens of Kazakhstan aged 18 to 65 years. Civil servants from Central state and local Executive bodies, representatives of business and non-governmental sector took part in a series of expert interviews.

Social profile of survey participants

The survey participants were 1,700 people attracted on the basis of a non-quota sample, using the «snowball» method».

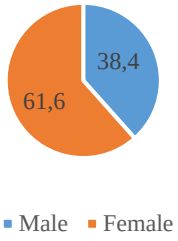


Figure 29. Sex distribution

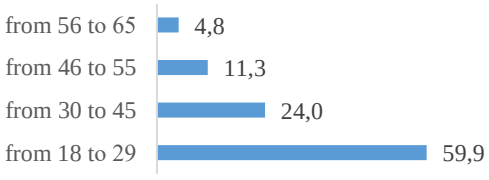


Figure 30. Age distribution

Of the 1,700 respondents, 61.6% were women and 38.4% were men *(Figure 29).* The relevance of the analysis is ensured by interviewing people of different age groups.

According to the age distribution *(Figure 30)*, 59.9% of people aged 18 to 29 years participated in the survey, 24% of respondents were aged 30 to 45 years, 11.3% of respondents were aged 46 to 55 years, and 4.8% of respondents represented the older age group from 56 to 65 years.

Figure 31 shows the composition of participants in the mass survey based on their level of education:

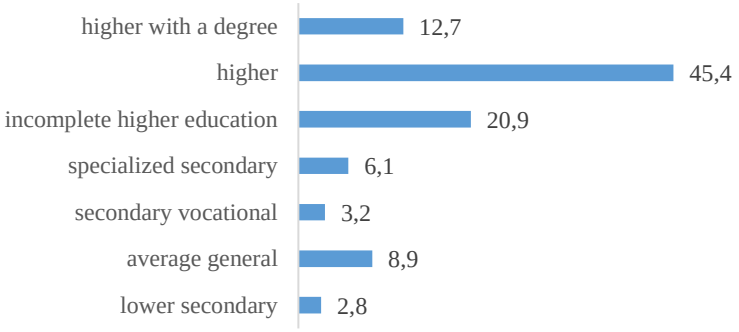


Figure 23. Distribution by level of education

2.8% of respondents have incomplete secondary education, and 8.9% of respondents stated that they have secondary education. 3.2% of respondents have secondary vocational education, and 6.1% – respondents with secondary special education. People with incomplete higher and higher education became more active participants in the survey. The number of such respondents prevails and amounts to 20.9% and 45.4%, respectively. 12.7% of the respondents, or about 12 out of 100, have a postgraduate education.

Figure 32 shows a cross section of mass survey participants by social category.

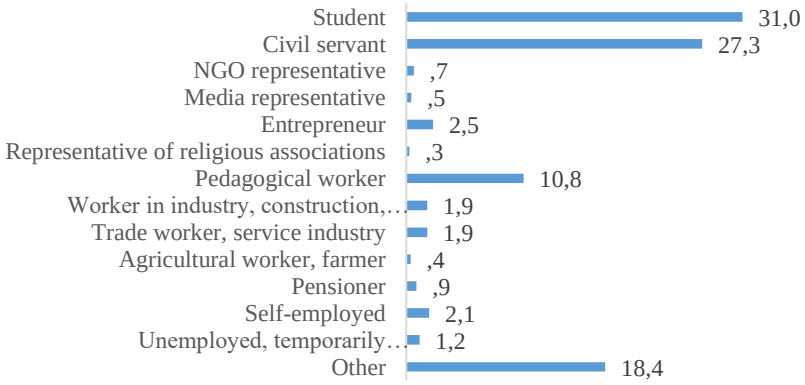


Figure 242. Distribution by social category

More than half *(58.3%)* of the survey participants are from two social groups: students or government employees. Approximately one in ten survey participants is a teacher. Between 2.1% and 2.5% of respondents represent business sectors or are self-

employed. Approximately equal, insignificant shares *(1.9%)* of the survey were taken by those who are employed in the real economy, trade.

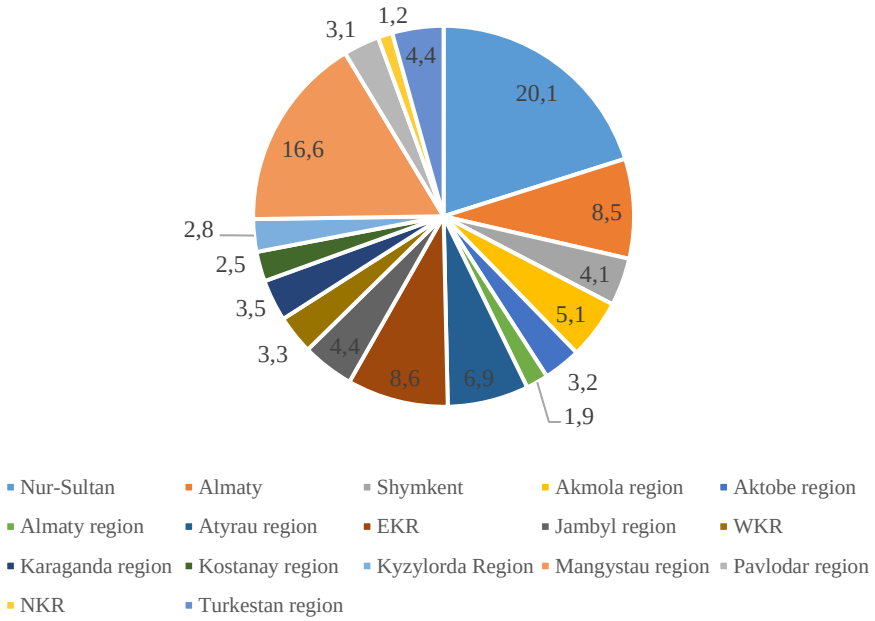


Figure 25. The territorial composition

The adequacy and relevance of the data is ensured by the participation of respondents from all regions of the Republic. The survey methodology did not involve the construction of a sample population. The survey was conducted using the "snowball" method, based on the relevance and significance of the questionnaire for residents of a particular region. Every fifth participant surveyed *(20,1%)* was from the capital. Almaty was represented by 8.5% of respondents, 3.1% of respondents were from Shymkent. Residents of such regions as Mangystau *(16.6%)*, East Kazakhstan *(8.6%)* and Atyrau region *(6.9%)* were particularly active. Residents of Kyzylorda (2,8%), Kostanay (2,5%) and Almaty (1,9%) regions showed low activity.

To assess the perception of the effectiveness of public administration, certain sections were used and indicators describing the social dimension of management actions were presented.

General assessment of the effectiveness of public administration

To measure the effectiveness of public administration, respondents were asked a number of questions about the performance of government agencies during the pandemic. We are talking about the perception of the population of the measures that the state has taken in the fight against coronavirus. The responses received were processed in the IBM SPSS 23 package, which, using descriptive analysis methods, allowed us to obtain the following linear distribution, shown in figure 34.

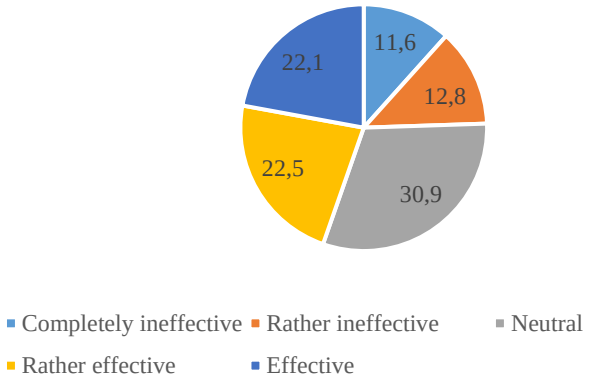


Figure 26. Assessment of the work of state bodies and structures. Linear distribution

Thus, approximately one in three of the respondents *(30,9%)* expressed a neutral opinion, which in numerical terms corresponded to 3 points on a 5-point scale. 11.6% of respondents, or one in five, indicated that government agencies and structures worked completely inefficiently during the pandemic. 12.8% of respondents indicated that they rather do not evaluate the work of state bodies and structures effectively. 22.5% of respondents tend to consider the work of state bodies and structures more effective. 22.1% were satisfied with the quality of work of state bodies and structures.

In the territorial context, the public assessment of the effectiveness of government agencies during the pandemic is shown in figure 35:

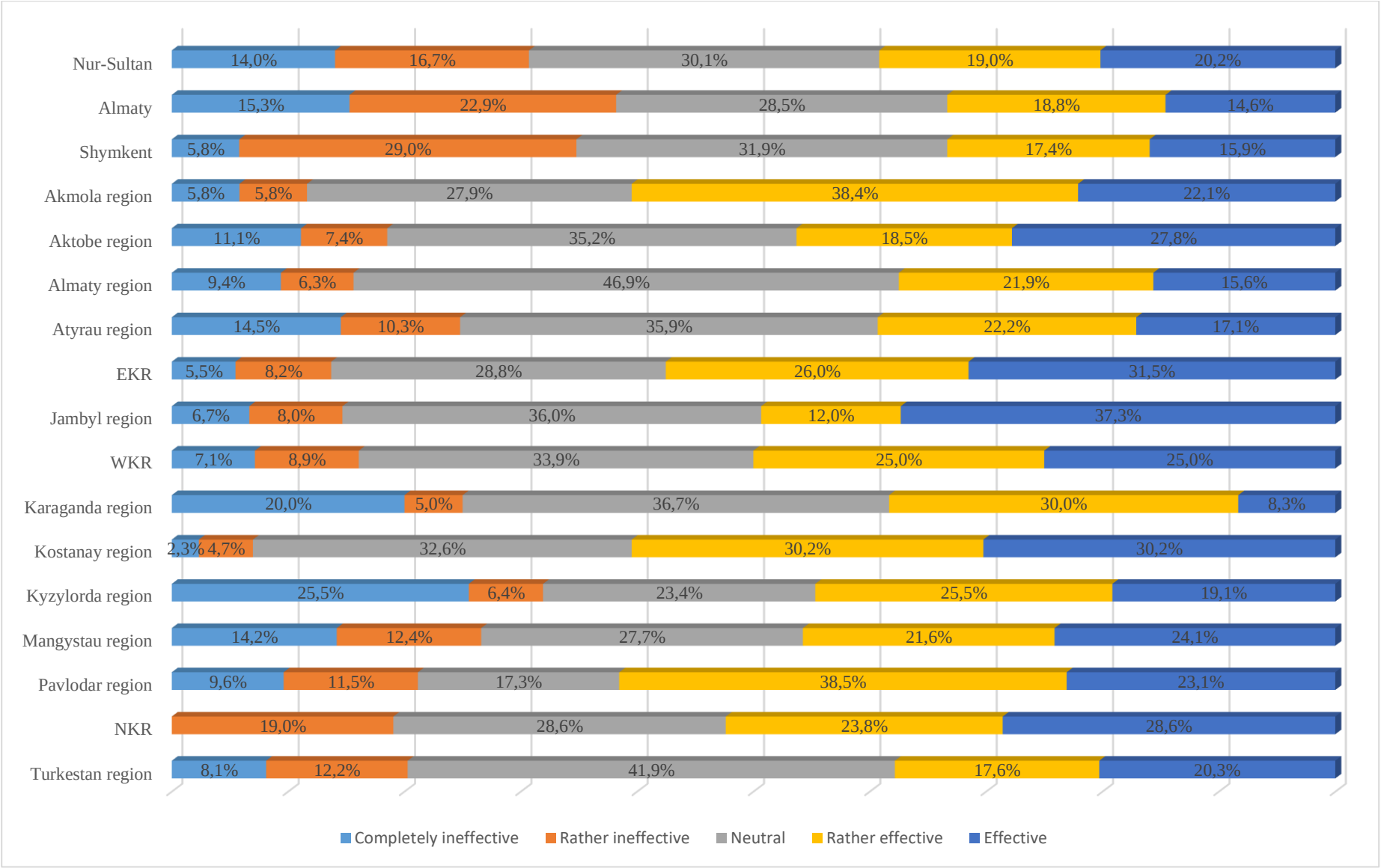


Figure 27. Assessment of the work of state bodies and structures during the pandemic (territorial section)

The southern capital has the lowest rating for the effectiveness of public administration during the pandemic *(15.3% of respondents rated the work of public authorities at 1 point)*. Dissatisfied with the work of public administration in the Karaganda region, where 61.7% of respondents rated the work of public authorities from 1 to 3 points. The situation is similar in Atyrau *(60.7% of respondents rated the work of public authorities from 1 to 3 points)* and Kyzylorda *(55.3% of respondents rated the work of public authorities from 1 to 3 points)* regions. The level of evaluation of the effectiveness of public administration in the East Kazakhstan region, Kostanay and Akmola regions is relatively high *(% of respondents who rated the work of public authorities by 4 and 5 points is higher than % of respondents who rated the work of the authorities from 1 to 3 points)*.

In Kostanay region only 2.3% of respondents gave a 1-point rating to the work of state bodies during the pandemic, which demonstrates a high level of satisfaction with their actions.

It was also important to identify how respondents assess the dynamics of changes in the work of state bodies.for this purpose, public opinion was measured for changes in the performance of Central, local state bodies and quasi-state structures over the entire period of the pandemic. The survey results are shown in figure 36.

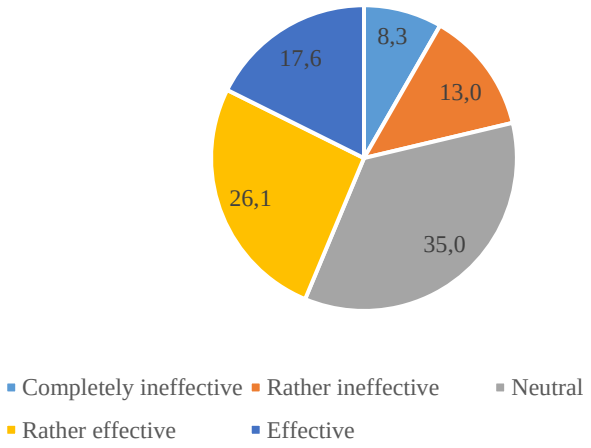


Figure 28. Dynamics of changes in the performance of Central and local government agencies and quasi-government structures over the entire period of the pandemic

Thus, 35% of respondents indicated that the performance of a significant part of government agencies and structures remained unchanged during the pandemic. 26.1% of respondents, or one in four, thought there was some improvement. 17.6% of respondents indicated that the situation has a clear tendency to improve, 13% – the situation has slightly worsened, and 8.3% of respondents considered that the situation has worsened significantly. In General, during the pandemic, respondents believe that there are positive changes in the work of government agencies, which indicates the state's activity in the fight against coronavirus.

These measurements to some extent confirm the results of the survey, which resulted in an average assessment of the work of Central, local government agencies and quasi-government structures over the entire period of the pandemic. On average, respondents rate the effectiveness of the anti-crisis measures taken above 3 points.

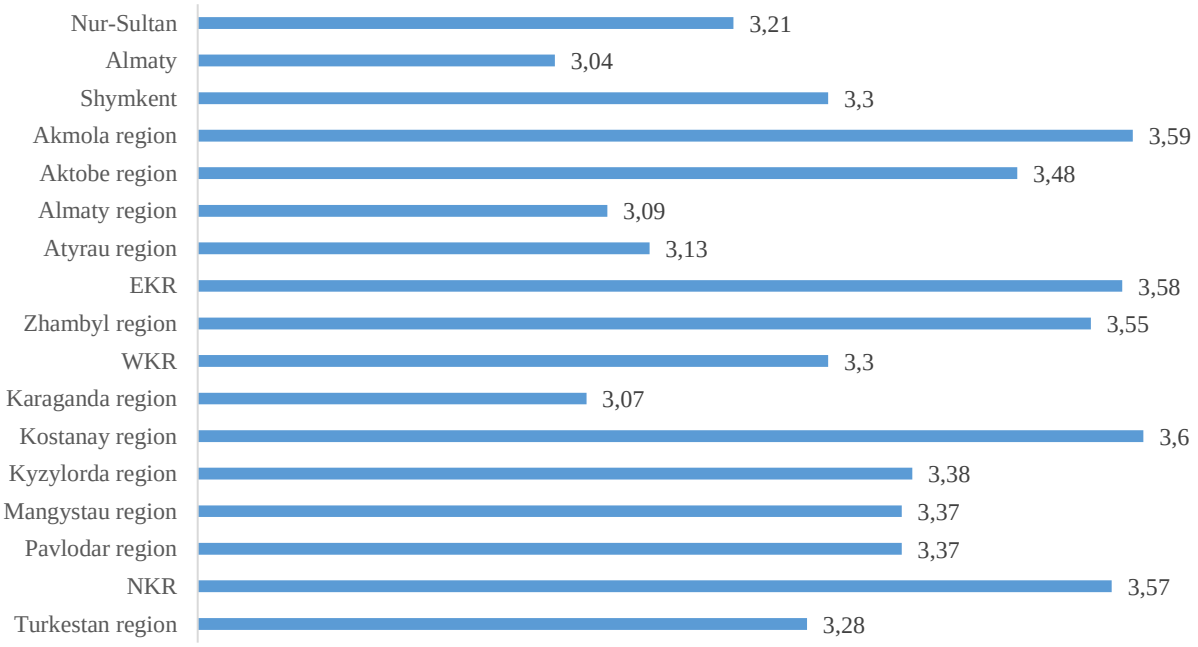


Figure 29. Average assessment of the performance of Central and local government agencies and quasi-government structures over the entire period of the pandemic

The average assessment of the work of Central and local government agencies and quasi-state structures is calculated based on the analysis of respondents ' assessments in the territorial context, by calculating in the PowerBI software environment. This rating for regions is between 3.04-3.6 *(out of 5 possible points)*. The lowest rating is in Almaty, the highest is 3.6 in Kostanay region. The assessment of the effectiveness of public administration bodies in such regions as Kyzylorda region *(3.38)*, Mangystau region *(3.37)* and Pavlodar region *(3.37)* is correlated. Such regions as North Kazakhstan *(3.57)*, East Kazakhstan *(3.58)* and Akmola regions *(3.59)* are close to the maximum obtained estimates.

To determine the General attitude of the population to the situation in the country in the context of the pandemic and thus the attitude to public policy, the survey participants were asked to evaluate the effectiveness by choosing one of the response options on the classic 5-point rating scale.

Analysis of the data visualized in figure 38 shows that 11.2% consider the current situation critical. The rating of 13.2% of respondents is negative, which indicates a possible increase in social tension. 32.1% of respondents rated the situation as rather negative, 23.7% of respondents showed a relatively high level of social optimism,

indicating a rather positive assessment of the activities of government agencies. A high level of confidence was expressed by 19.8% of respondents.

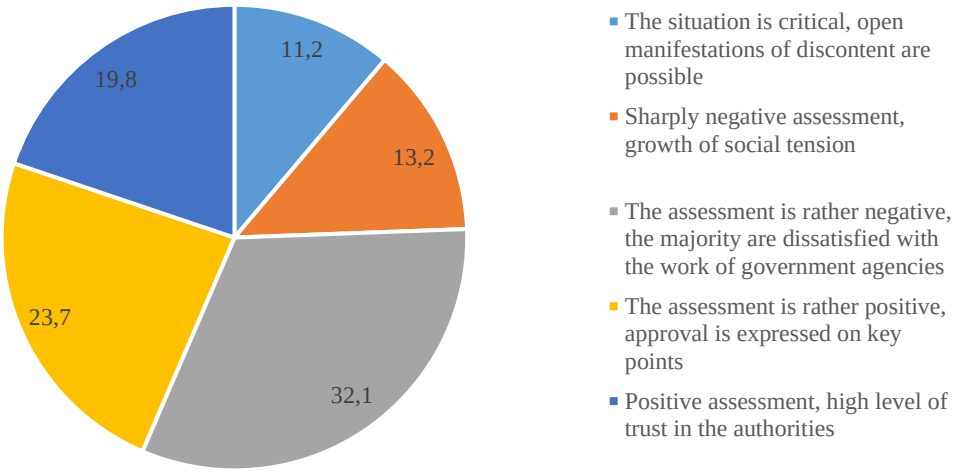


Figure 30. Public assessment of the results of the work of state bodies in the fight against the pandemic

In the territorial context, the following data pairs are obtained, illustrating trends in public opinion in various sections.

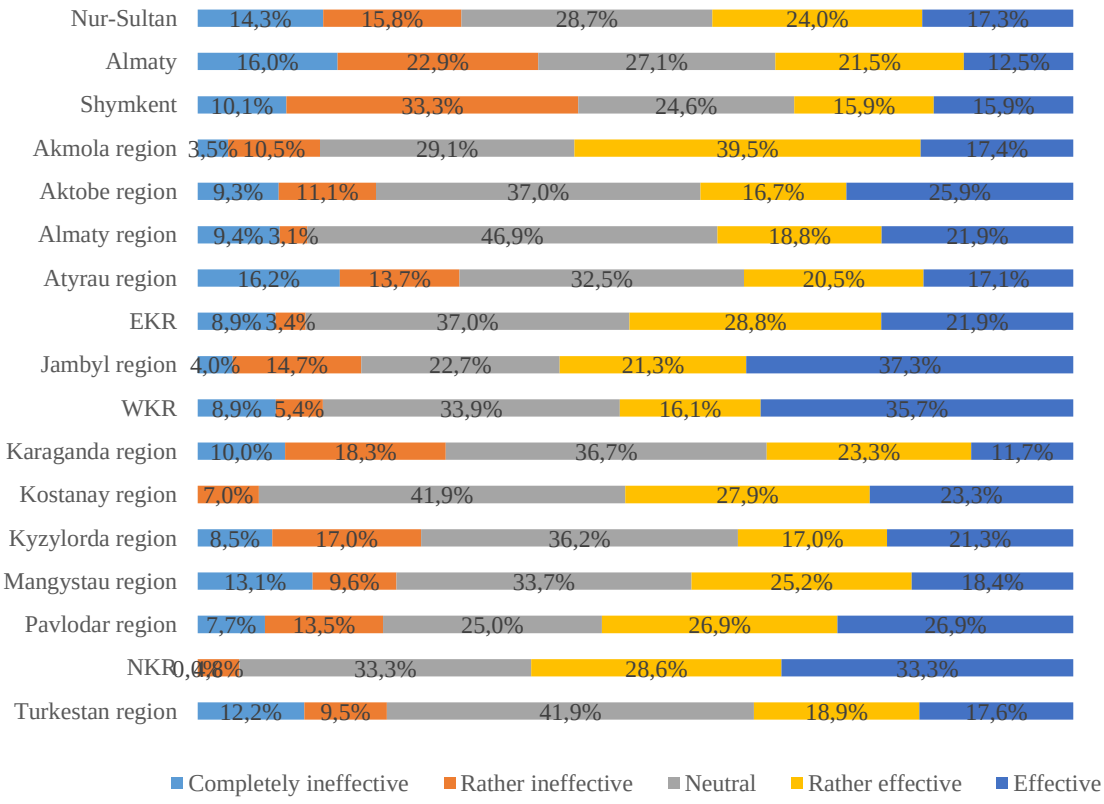


Figure 31. Public assessment of the results of the work of state bodies in the fight against the pandemic

The analysis allowed us to draw the following conclusions: Almaty *(16%)*, Atyrau *(16.2%)* and Mangystau *(13.1%)* regions expressed the largest number of opinions that the situation is critical. At the same time, it is noteworthy that the respondents from Kostanay region did not give a single answer in terms of critical negative ratings. In terms of harsh statements describing the situation as negative, Shymkent is in the lead. Almost one in three of the respondents indicated that the situation is sharply negative and there is an increase in social tension. Among the leaders in this category are G. Almaty *(22.9%)*, Karaganda region *(18.3%)* and Kyzylorda region *(17%)*. Respondents from Zhambyl *(37.3%)*, West Kazakhstan *(35.3%)*, and North Kazakhstan regions *(33.3%)* expressed positive assessments of the public situation and a high level of confidence in the government.

An assessment of the effectiveness of Central government agencies and the quasi-public sector in the context of a pandemic is shown in figure 40.

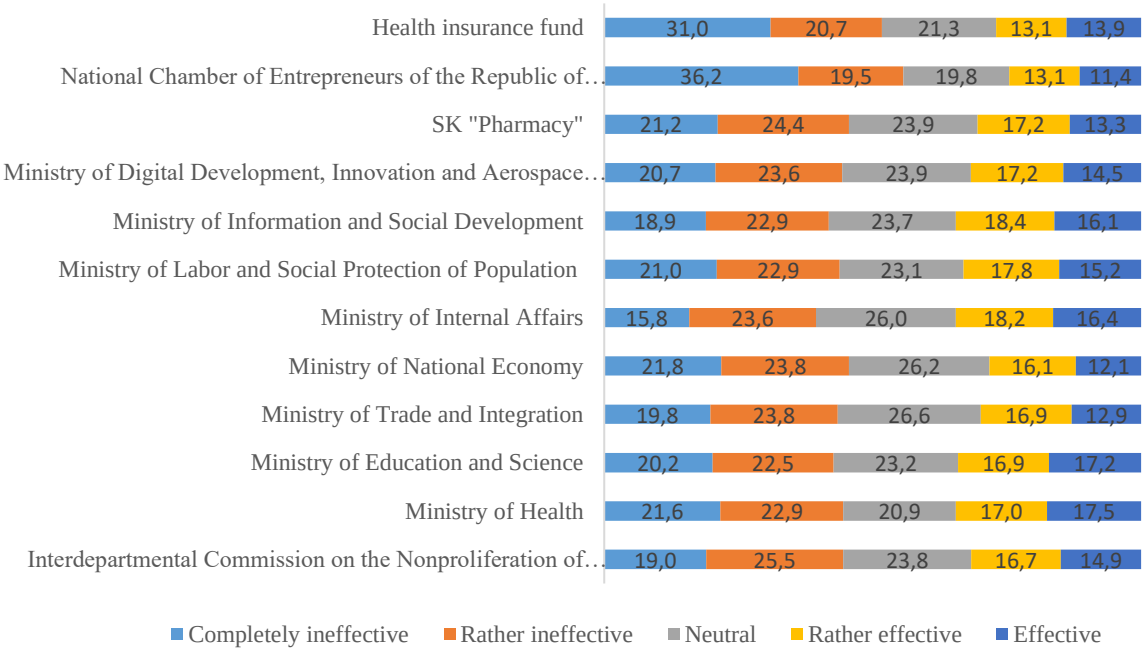


Figure 40. Assessing the effectiveness of Central government agencies and the quasi-public sector in the context of a pandemic

The calculation of the assessment of the effectiveness of the work of central government bodies and the quasi-public sector was carried out according to the following algorithm: the respondents were offered a list of government bodies for assessment on scales from 1 to 5, where 1 is completely ineffective and 5 is effective.

Public opinion is negatively disposed towards such structures as the "Health Insurance Fund" and NCE “Atameken”. Every third of the respondents *(31.0%)* indicated that the work of the FMS is completely ineffective, which corresponds to an assessment of 1 point. With regard to NPP Atameken, the share of negatively disposed citizens is

higher. 36.2% of respondents gave 1 point to the work of NCE “Atameken” during the pandemic.

15.8% of respondents *(minimum)* rated the work of the Ministry of Internal Affairs at 1 point, which is almost two times less than the number of negative assessments received by the Federal Migration Service and the “Atameken” National Entrepreneurial Enterprise.

An assessment of 2 points *(“somewhat effective”)* for the group of state structures indicated in the figure is the election corridor from 19.5 to 25.5%. At the bottom of this border is NCE "Atameken" with 19.5% of the elections, every fifth of the respondents gave the work of the chamber during the coronavirus period 2 points. Every fourth respondent is dissatisfied with the work of the Interdepartmental Commission on the Prevention of Coronavirus.

The activity of state bodies and structures was estimated by 3 points from 19.8 to 26.6% of the respondents. At the bottom of this range of elections were such structures as NCE “Atameken” and the Ministry of Health. Such a low estimate is presumably connected with the weak organization of the work of medical institutions and an increase in the number of cases, and NCE “Atameken”, according to representatives of the business community, showed itself badly during the crisis.

If we consider the corridor of elections with an assessment of “good”, then it ranges from 13 to 18.4%. The minimum number of “good” ratings for work during the pandemic was received by the Health Insurance Fund, and the maximum was received by the Ministry of Information and Community Development.

From 11.4 to 17.5% is the corridor of the elections, of those who gave "excellent" marks to the work of the above-listed number of state bodies and structures. At the bottom of the corridor are NCE “Atameken”, the Ministry of National Economy, at the top is the Ministry of Health.

An analysis of the survey results was identified certain similarity evaluation respondents activities of individual government agencies and other organizations that participated in the implementation of anti-crisis measures in the country *(Table 11)*. The organizations in this survey are the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken", IC "Pharmacy", the Medical Insurance Fund.

The correlation model was built based on the assessment of the respondents' perception of the effectiveness of the work of state bodies and other organizations in general. Pairwise rank correlations are carried out.

The object of analysis was the assessment of perception, i.e. their answers to questions 1 and 4 of the mass survey questionnaire. Answers are given on an ordinal scale from 1 – completely ineffective to 5 – effective.

Question 1 – "How do you assess the work of government agencies and structures during the pandemic in general?"

Question 4 – "Please rate from 1 to 5 the performance of central government bodies and the quasi-public sector in a pandemic."

As the first variable, we will consider the assessment of government agencies during the pandemic as a whole, the second variable is the assessment of the effectiveness of the work of the Interdepartmental Commission on the Non-Proliferation of Coronavirus, and the third is the assessment of the activities of the Ministry of Health and other variables *(government agencies, organizations)*. The values of the variables are the estimates of the respondents *(Table 11)*.

Table 11. Names of variables for evaluating the effectiveness of public administration in General and separately for each state body or organization

Variable names	№ var.
Generally	1
Interdepartmental Commission on the Nonproliferation of Coronavirus	2
Ministry of Health	3
Ministry of Education and Science	4
Ministry of Trade and Integration	5
Ministry of National Economy	6
Ministry of Internal Affairs	7
Ministry of Labor and Social Protection of Population	8
Ministry of Information and Social Development	9
Ministry of Digital Development, Innovation and Aerospace Industry	10
National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken"	11
SK "Pharmacy"	12
Health insurance fund	13

Due to the fact that the variables have ordinal scales, Spearman's sample rank correlation coefficient was used, calculated using the formula:

$$R = \frac{\overline{K}_{r_x, r_y}}{\sqrt{\overline{D}_{r_x}\overline{D}_{r_y}}} = \frac{\sum_{i=1}^{n}(r(X_i)-\bar{r}_x)(r(Y_i)-\bar{r}_y)}{\sqrt{\sum_{i=1}^{n}(r(X_i)-\bar{r}_x)^2\sum_{i=1}^{n}(r(Y_i)-\bar{r}_y)^2}} = 1-\frac{6}{n(n^2-1)}\sum_{i=1}^{n}(r(X_i)-r(Y_i))^2,$$

where $r(X_i)$, $r(Y_i)$ – the ranks of elements (the sequence number) $X_i, Y_i, i=\overline{1,n}$ in the variation series, $\{X_{(n)}\}$ и $\{Y_{(n)}\}$ respectively.

$$\bar{r}_x = \frac{1}{n}\sum_{i=1}^{n} r(X_i) = \frac{1}{n}\sum_{i=1}^{n} i = \frac{n+1}{2},\ \bar{r}_y = \frac{n+1}{2};$$

$$\overline{D}_{r_x} = \frac{1}{n}\sum_{i=1}^{n} r^2(X_i) - (\bar{r}_x)^2 = \frac{1}{n}\frac{n(n+1)(2n+1)}{6} - \frac{(n+1)^2}{4} = \frac{n^2-1}{12},\ \overline{D}_{r_y} = \frac{n^2-1}{12}.$$

If there are matching values in the x and Y series, they are assigned ranks equal to the arithmetic mean of the corresponding ranks in the variation series, and the Spearman correlation coefficient is used, adjusted for equal ranks:

$$R = \frac{n(n^2-1) - 6\sum_{i=1}^{n}(r(X_i) - r(Y_i))^2 - n_1 - n_2}{\sqrt{(n(n^2-1) - 2n_1)(n(n^2-1) - 2n_2)}},\ n_1 = \frac{1}{2}\sum_i t_i(t_i^2-1),\ n_2 = \frac{1}{2}\sum_i u_i(u_i^2-1),$$

where t_i – length of the i-th link in row X, u_i – length of the i-th link in row Y.

A relationship is a set of values with the same ranks.

Checking the significance of the Spearman correlation coefficient is performed using statistics $t = \frac{R\sqrt{n-2}}{\sqrt{1-R^2}}$, the law of distribution of which under the condition of truth H_0: « the correlation between the ranks is equal to zero » approximately described by the student's distribution with the number of degrees of freedom $n-2$.

Let's check how the assessment of the work of state bodies as a whole is related to the assessment of the effectiveness of individual bodies and organizations. The calculations are performed in the statistical package Statistica 13 the results of the analysis show the degree of consistency of the influence of perceptions of government agencies to assess the perception of government agencies as a whole. All estimates are statistically significant. The coefficients are greater than 0.4, which shows a moderately strong direct relationship between the perception of the assessment of the work of state bodies as a whole and the perception of the work of individual bodies.

Interpreting the results of the analysis, it can be assumed that the assessment of the work of state bodies during the pandemic as a whole is most closely associated *(consistent)* with the assessment of the work of the interdepartmental Commission for the non-proliferation of coronavirus *(0.489)* and the least weak coordination of assessments among all state and quasi-state bodies in NCE "Atameken" *(0.404)*. Thus, respondents evaluate the activities of government agencies in General to a greater extent through the perception of the activities of the Ministry of internal Affairs *(Figure 41)*.

Spearman Rank Order Correlations (Spreadsheet10)
MD pairwise deleted
Marked correlations are significant at p <,05000

Pair of Variables	Valid N	Spearman R	t(N-2)	p-value
Оценка работы госуд органов в целом & МежведомственнаяКомиссияОценЭффекРаб	950	0,489384	17,27837	0,00
Оценка работы госуд органов в целом & МЗ_ОценЭффекРаб	950	0,423114	14,37792	0,00
Оценка работы госуд органов в целом & МОН_ОценЭффекРаб	950	0,424055	14,41691	0,00
Оценка работы госуд органов в целом & МинТорговлиИнтеграцииОценЭффекРаб	950	0,405900	13,67464	0,00
Оценка работы госуд органов в целом & Министерство национальной экономикиОценЭфф	950	0,425824	14,49036	0,00
Оценка работы госуд органов в целом & Министерство внутренних делОценЭффекРаб	950	0,473782	16,56469	0,00
Оценка работы госуд органов в целом & МТСЗН_ОценЭффекРаб	950	0,455546	15,75590	0,00
Оценка работы госуд органов в целом & МИОР_ОценЭффекРаб	950	0,446521	15,36502	0,00
Оценка работы госуд органов в целом & МЦРИАП_ОценЭффекРаб	950	0,424087	14,41824	0,00
Оценка работы госуд органов в целом & НПП РК «Атамекен»_ОценЭффекРаб	950	0,404411	13,61465	0,00
Оценка работы госуд органов в целом & СК «Фармация»ОценЭффекРаб	950	0,423508	14,39425	0,00
Оценка работы госуд органов в целом & ФондМедСтрахов_ОценЭффекРаб	950	0,435222	14,88389	0,00

Figure 32. Spearman coefficients between the assessment of state agencies as a whole and individual state agencies and organizations

In socio-psychological studies, full correlation is not found, so correlations from 0.50 to 0.60 are considered as strong; from 0.30 to 0.50, as moderately strong; below 0.3, weak.

Based on pairwise correlations, it is possible to identify groups of government agencies that are closely associated with respondents as strongly related in their perception of performance, let's call them associative groups *(Figure 42)*.

	Оценка работы госуд органов в целом	МежведомственнаяКомиссияОценЭффекРаб	МЗ_ОценЭффекРаб	МОН_ОценЭффекРаб	МинТорговлиИнтеграцииОценЭффекРаб	Министерство национальной экономикиОценЭффекРаб	Министерство внутренних делОценЭффекРаб	МТСЗН_ОценЭффекРаб	МИОР_ОценЭффекРаб	МЦРИАП_ОценЭффекРаб	НПП РК «Атамекен»_ОценЭффекРаб	СК «Фармация»ОценЭффекРаб	ФондМедСтрахов_ОценЭффекРаб
Оценка работы госуд органов в целом	1,000000	0,489384	0,423114	0,424055	0,405900	0,425824	0,473782	0,455546	0,446521	0,424087	0,404411	0,423508	0,435222
МежведомственнаяКомиссияОценЭффекРаб	0,489384	1,000000	0,822893	0,728443	0,760473	0,777725	0,763649	0,771307	0,761009	0,743852	0,748584	0,683908	0,719980
МЗ_ОценЭффекРаб	0,423114	0,822893	1,000000	0,740602	0,739236	0,766611	0,750706	0,788956	0,742004	0,747434	0,733990	0,722086	0,740967
МОН_ОценЭффекРаб	0,424055	0,728443	0,740602	1,000000	0,760849	0,747235	0,736469	0,734107	0,737903	0,742696	0,723379	0,643321	0,630041
МинТорговлиИнтеграцииОценЭффекРаб	0,405900	0,760473	0,739236	0,760849	1,000000	0,820858	0,763011	0,754713	0,762608	0,755689	0,766430	0,709474	0,720404
Министерство национальной экономикиОценЭффекРа	0,425824	0,777725	0,766611	0,747235	0,820858	1,000000	0,810679	0,835021	0,787548	0,772429	0,804505	0,717173	0,721988
Министерство внутренних	0,473782	0,763649	0,750706	0,736469	0,763011	0,810679	1,000000	0,808834	0,792043	0,767171	0,779730	0,649709	0,642052
МТСЗН_ОценЭффекРаб	0,455546	0,771307	0,788956	0,734107	0,754713	0,835021	0,808834	1,000000	0,804488	0,796741	0,761831	0,719324	0,743907
МИОР_ОценЭффекРаб	0,446521	0,761009	0,742004	0,737903	0,762608	0,787548	0,792043	0,804488	1,000000	0,814885	0,820644	0,684051	0,721050
МЦРИАП_ОценЭффекРаб	0,424087	0,743852	0,747434	0,742696	0,755689	0,772429	0,767171	0,796741	0,814885	1,000000	0,809803	0,716334	0,722059
НПП РК «Атамекен»_ОценЭффекРаб	0,404411	0,748584	0,733990	0,723379	0,766430	0,804505	0,779730	0,761831	0,820644	0,809803	1,000000	0,743695	0,738814
СК «Фармация»ОценЭффекРаб	0,423508	0,683908	0,722086	0,643321	0,709474	0,717173	0,649709	0,719324	0,684051	0,716334	0,743695	1,000000	0,858376
ФондМедСтрахов_ОценЭффекРаб	0,435222	0,719980	0,740967	0,630041	0,720404	0,721988	0,642052	0,743907	0,721050	0,722059	0,738814	0,858376	1,000000

Figure 42. Pairwise rank correlations

All Spearman correlation coefficients are statistically significant. In red, figure 9 shows groups with strong cross-correlations of perception of performance evaluation *(greater than 0.8)*. Thus, we can distinguish four associative groups, each of which unites ministries and organizations similar in the type of their assessment by respondents. There is a link between their actions and the assessment of their perception by respondents in the form of linked blocks. In each block, respondents ' responses have a similar ranking of perceptions of the effectiveness of ministries and organizational structures. We are talking about setting priorities in the assessment, which allows you to combine them into similar associative cluster groups. For example, all group 1 organizations *(MNE, Ministry of trade and integration, Ministry of internal Affairs, mtszn, NCE "Atameken")* were evaluated by respondents in agreement *(approximately equally)* on their actions during the pandemic related to economic issues. Group 3 *(Ministry of internal Affairs, Ministry of labor and social protection of the population)* was also evaluated by respondents for their actions during the pandemic, the group members directly contacted the population and solved social issues.

Table 12. Associative cluster groups

Associative group number	Composition	Comments
1	MNE, Ministry of Trade and Integration, Ministry of Internal Affairs, MLSPP, NPP Atameken.	All organizations are related to solving economic issues
2	IC Pharmacy, Medical Insurance Fund.	Outsiders rankings, the provision of medicines, medical treatment
3	Ministry of Internal Affairs, Ministry of Labor and Social Protection of Population	We had direct contact with the population and solved social issues
4	Ministry of Labor and Social Protection of Population, Ministry of Information and Social Development, Ministry of Digital Development, Innovation and Aerospace Industry	Were engaged in the organization of social payments, authorized body, information support, technical support

Thus, the effectiveness of government agencies is assessed by the perception of the result of actions in certain areas based on their area of responsibility. At the same time, the effectiveness of government agencies that have the same area of responsibility is ranked approximately the same. The multi-dimensionality of the analysis is provided by different sets of variables used for the analysis.

In the block of the most criticized organizations are SK pharmacy and the health insurance Fund, while a smaller number of sharply negative reviews relate to government agencies located in cluster group 2.the information Obtained is of practical importance in building communications and organizing the work of government agencies in a close relationship between levels and areas of activity in the post-crisis period.

The analysis of public opinion regarding the activities of state bodies during the pandemic is supplemented by a study of the opinion of respondents on the effectiveness of the akimat *(Figure 43)*.

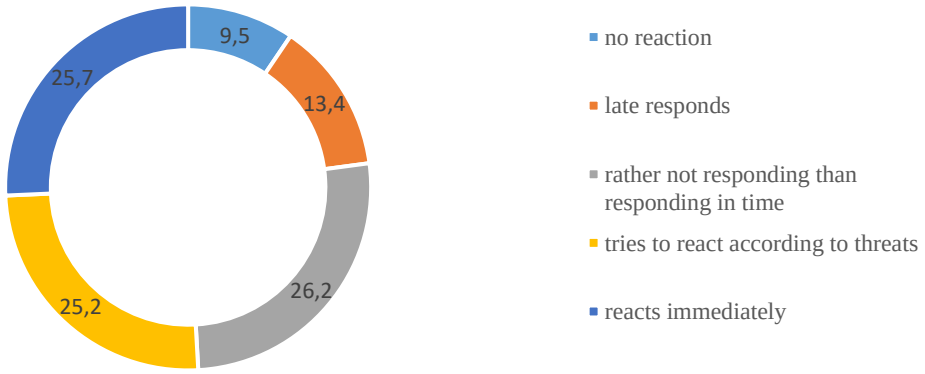


Figure 43. Response of akimats to the challenges of the pandemic

The analysis of responses allows us to clearly say that there are gaps in the work of local akimats. Thus, 26.2% of respondents indicated that akimats do not respond rather than work effectively with the threats of a pandemic, which corresponds to a three-point rating. Approximately the same percentage of respondents *(25.2%)* believes that local akimats respond in accordance with threats. One out of ten respondents is sure that the akimats do not respond to the challenges of the pandemic, 13.4% of respondents are sure of a delayed response to the situation. 25.7% of respondents are confident that they have correctly set priorities in dealing with the challenges of the pandemic on the ground. There is a high percentage of those who do not see results in the work of local Executive bodies. 49.1% of elections are negative.

A comparative analysis of data and visualization of respondents' value judgments on the response of akimats to the challenges of the pandemic in relation to the administrative-territorial division of Kazakhstan was carried out *(Fig. 44)*.

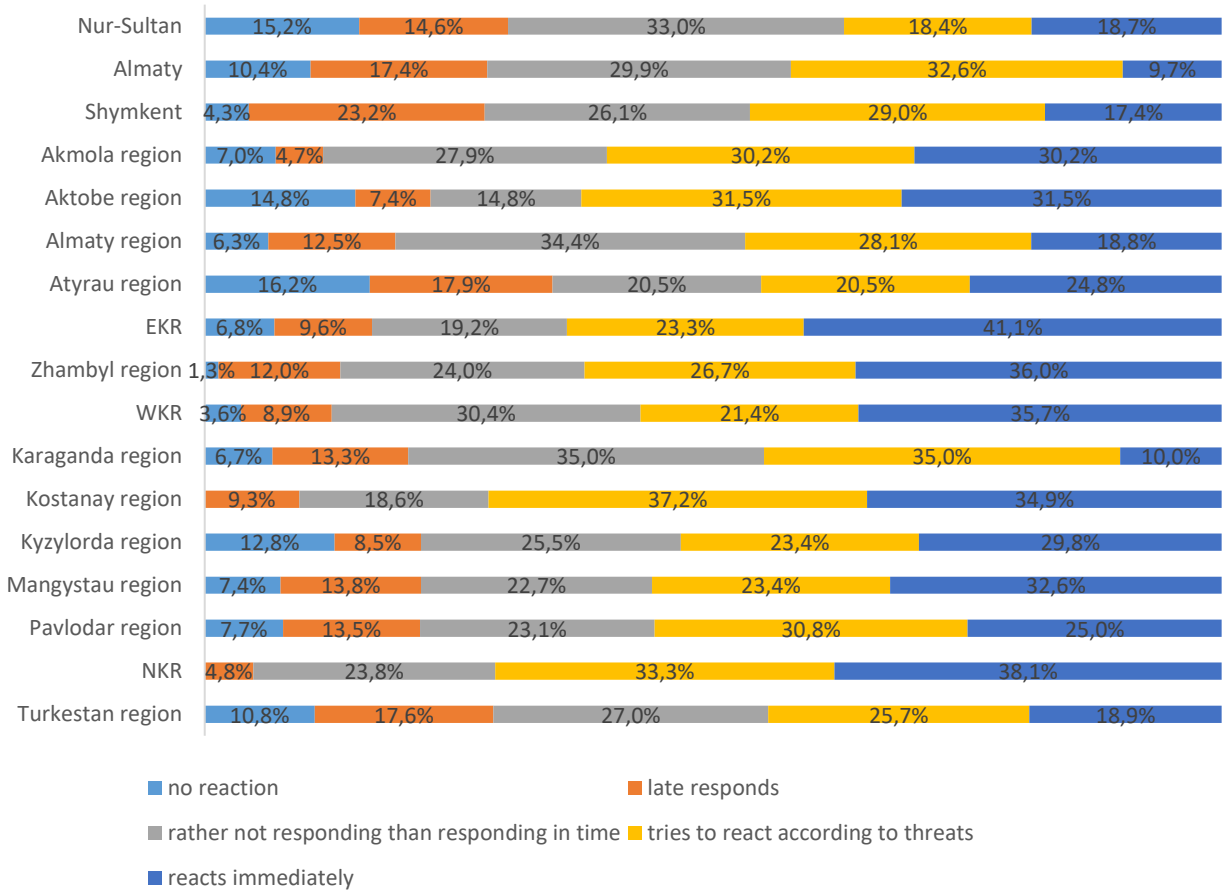


Figure 44. Response of akimats to the challenges of the pandemic

In the context of regions, the following reaction to the pandemic challenges on the part of akimats was noted. Thus, the largest number of those who believe that akimats do not respond to the pandemic challenges live in the city of Nur-Sultan *(15.2%)*, Atyrau region *(16.2%)*, Aktobe region *(14.8%)* and Kyzylorda region *(12.8%)*. The belated reaction

of akimats was noted by 23.2% of respondents from Shymkent, 17.9% from Atyrau region, 17.6% from Turkestan region. At the same time, the minimum level of low ratings of the akimat's activity is observed in the North Kazakhstan region, only 4.8% of the respondents indicated a belated reaction of the akimat. The respondents from the specified region do not believe that the akimat is inactive in the face of the pandemic. Akmola residents who took part in the survey also did not express their sharp dissatisfaction with the activities of their akimat. So, the opinion that there is no response to the pandemic challenges was indicated only by 7% of survey participants from this region, and almost two times less, 4.7% of respondents indicated that the akimat responds to the situation with a delay.

In the context of north-south-west-east-center, we can say that the largest number of critical assessments comes from the southern and western regions. There is a high level of social conflict in the Karaganda region.

3 points, i.e. 35% of residents of Karaganda region, 34.4% of residents of Almaty region, 33% of residents of Nur-Sultan indicated a low level of government activity in a pandemic. In general, in the context of regions, from 14.8 to 35% of the respondents *(3 points)* are sure that the akimats do not respond well to the challenges of the pandemic.

The fact that the regional authorities are trying to establish current work based on the level of threats can be said in such areas as Kostanay *(37.2%)* and North Kazakhstan regions *(33.3%)*.

72.1% of residents of Kostanay region *(4 and 5 points)* are satisfied with how their akimat works in a pandemic. A similar trend takes place in the North Kazakhstan region, high marks for the work of the akimat *(4 and 5 points)* were given by 71.4% of the respondents. Separately, it is worth noting that 41.4% of residents of the East Kazakhstan region gave an “excellent” assessment to the work of akimats, and this may indicate the correct work with society in the region.

Corruption is one of the major challenges for the state. A high level of corruption negatively affects the degree of effectiveness of managerial decisions. The study of public opinion will make it possible to assess **the effectiveness of anti-crisis response measures by the state in the context of corruption risks and their impact on the socio-political situation**. Analysis in graphical form allows you to visually identify the most problematic areas and make appropriate recommendations to reduce corruption risks.

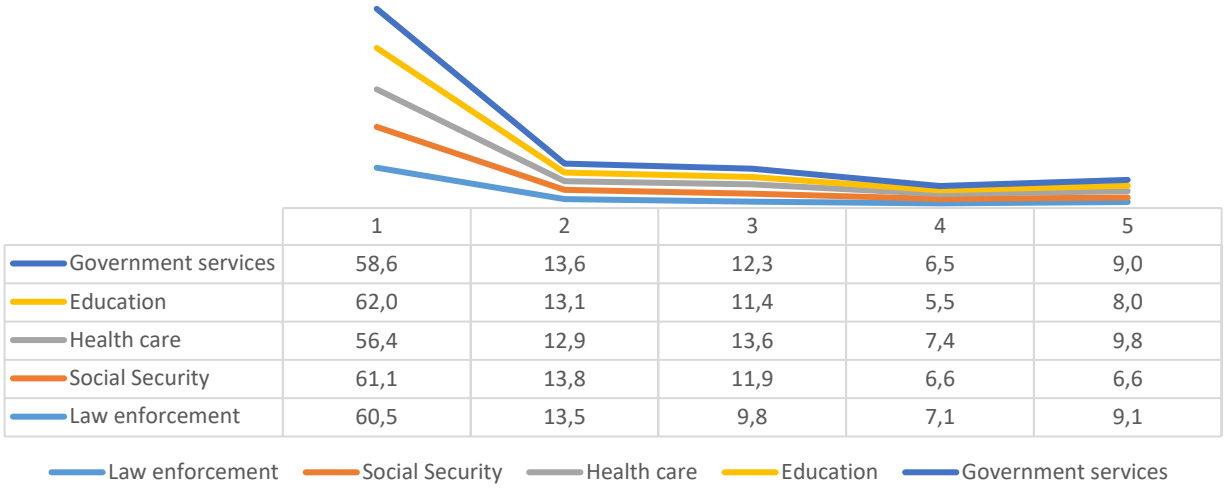


Figure 45. Linear distribution of the frequency of contact of citizens with various manifestations of corruption during a pandemic

High corruption risks *(4 and 5 points)* were identified in such spheres of management as healthcare *(17.2% of respondents often and quite often faced corruption)*, law enforcement agencies *(16.2% of respondents often and quite often faced corruption)* and government services *(15.5% of respondents often and quite often faced corruption)*.

Based on the identified high corruption component in the healthcare sector, comparisons of public opinion were made in the context of the respondents' areas of activity *(table 13)*.

Table 13. Frequency of contact of citizens with various manifestations of corruption during a pandemic (breakdown by spheres of activity / healthcare), where 1 - did not encounter, 5 - often encountered

Grade	Private	Governmental	Non-governmental
1	50,5%	61,9%	46,8%
2	15,7%	11,1%	14,0%
3	16,3%	11,5%	16,6%
4	8,3%	7,3%	5,5%
5	9,1%	8,3%	17,0%
Total	100%	100%	100%

The private and nongovernmental sectors most frequently encountered corruption in the health sector.

Similar measurements were made for the public services sector.

Table 14. Frequency of contact of citizens with various manifestations of corruption during a pandemic (breakdown by field of activity / public services), where 1 - did not encounter, 5 - often encountered

Assessment	Private	State	Non-governmental
1	52,4%	64,5%	48,5%
2	17,3%	11,1%	15,7%
3	13,6%	10,8%	15,3%

4	8,9%	5,2%	6,4%
5	7,8%	8,4%	14,0%
Total	100,0%	100,0%	100,0%

In the sphere of public services, representatives of the non-governmental sector most often had to deal with corruption.

Table 15. The frequency of citizens' contact with various manifestations of corruption during a pandemic (breakdown by field of activity / public services), where 1 - did not encounter, 5 - often encountered

Assessment	Private	State	Non-governmental
1	54,6%	66,0%	51,5%
2	16,5%	10,7%	18,3%
3	13,4%	7,6%	11,1%
4	6,2%	7,5%	7,2%
5	9,3%	8,2%	11,9%
Total	100,0%	100,0%	100,0%

In general, there is not much difference in which sector is most likely to deal with corruption risks. However, there is a slight preponderance of public opinion in terms of the collision with the facts of corruption on the part of representatives of the non-governmental sector.

It is possible to assess the opinion of citizens about the distribution of financial flows in the country based on the analysis of the answers given in Figure 46.

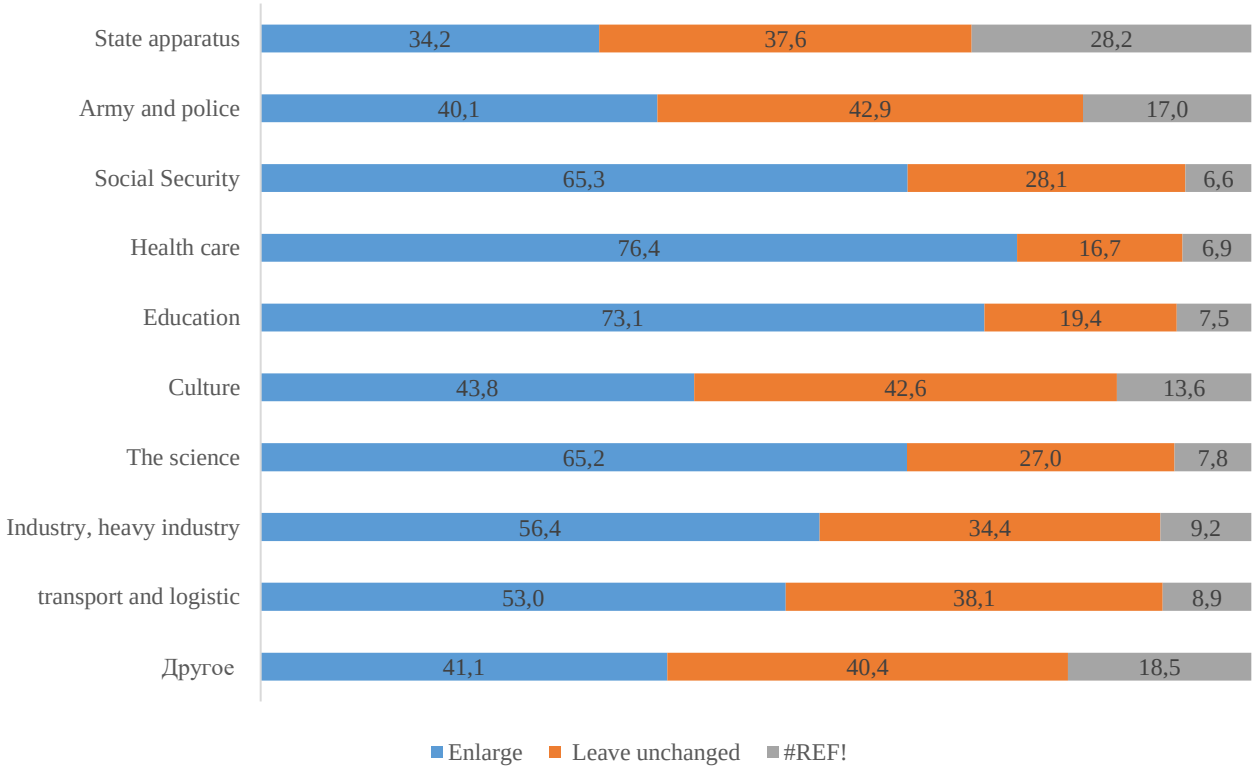


Figure 46.33 How should the following areas of activity be financed?

Analysis of the data shows that, according to the respondents, it is necessary to increase funding for the spheres of health care, education, social security and science. Whereas, the cost of maintaining the state apparatus, professional sports, as well as the army and police can be reduced. Most of the respondents believe that funding for the financing of culture, transport and logistics, industry and industry can be left unchanged. It is quite understandable that the population considers the development of the main spheres that have undergone a great test, namely health care and education, as a priority in the context of the crisis.

Society's expectations

In conditions of stress, high risks to life, it is important for people to feel support from the state. The effectiveness of state measures can also be assessed through the manifestation of the confidence of citizens, their reaction to various types of management decisions. In this regard, the respondents were asked the question " Will the authorities be able to protect you in the event of a second wave of coronavirus?» *(Figure 47)*.

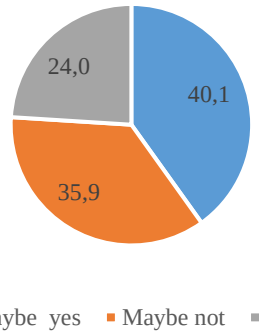


Figure 47. Can the authorities protect
In case of the beginning of the second wave of coronavirus?

40.1% of respondents still rely on the state to protect them from the negative impact of the pandemic, 35.9% of respondents indicated that they are not sure that the state can protect them in the event of a second wave of coronavirus. 24.0% of respondents indicated are sure that the state can protect them in the event of a second wave of coronavirus. This picture testifies to the fact that the state in a crisis has a huge responsibility and expectations of people for help.

Figure 48 shows the distributions by territorial breakdown, allowing to assess how confident the citizens of Kazakhstan are in the state's capabilities to withstand the challenges of the second wave of the pandemic.

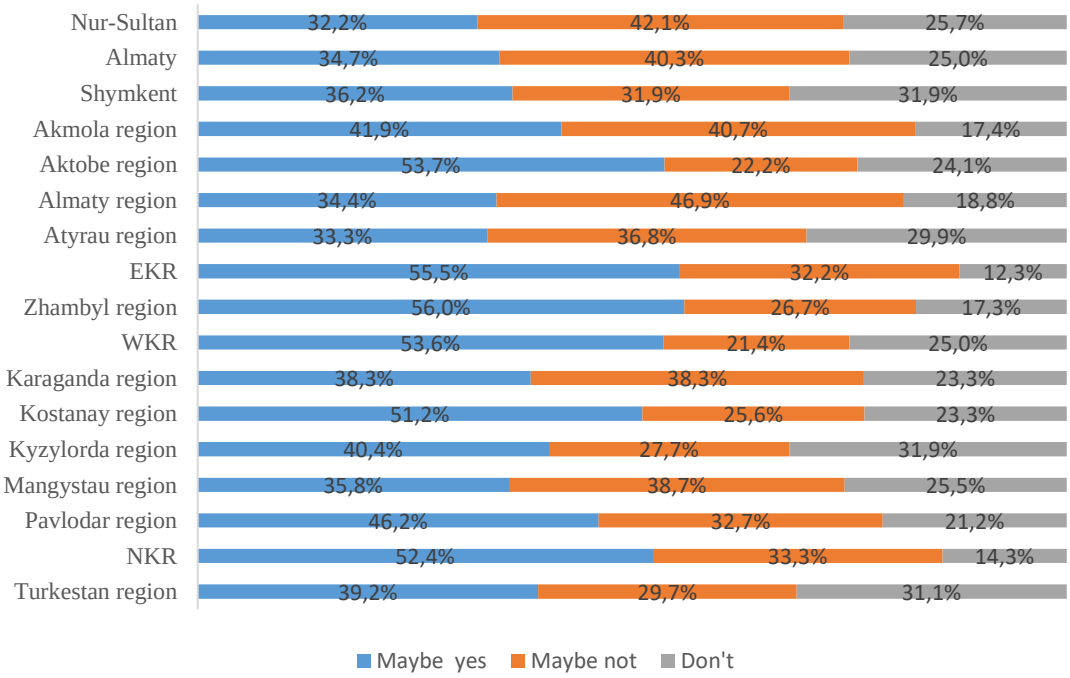


Figure 348. Can the authorities protect you in the event of a second wave of coronavirus?

In the territorial context, it can be said that 53.6% of respondents from West Kazakhstan and 53.7% from Aktobe region, 55.5% from East Kazakhstan and 56% are confident in the state's ability to protect the interests of the population from the second wave of coronavirus. of respondents from the Zhambyl region, and these are the maximum indicators. The largest number of those who do not trust the state as an institution capable of providing reliable protection against a pandemic live in Shymkent, Kyzylorda *(31.9%)*, Turkestan regions *(31%)*.

Information flows during a pandemic

The process of making an effective management decision plays a decisive role in the organization of the management process. The assessment of communication will make it possible to draw conclusions about the levels of interaction between the state and society and assess the degree of trust in information flows at all levels of the system. The respondents were asked to rate the information openness of state bodies and readiness for dialogue with the population on a scale from 1 to 5, where 1 – the work is closed and non-transparent, 5 – the department is open, any information is available.

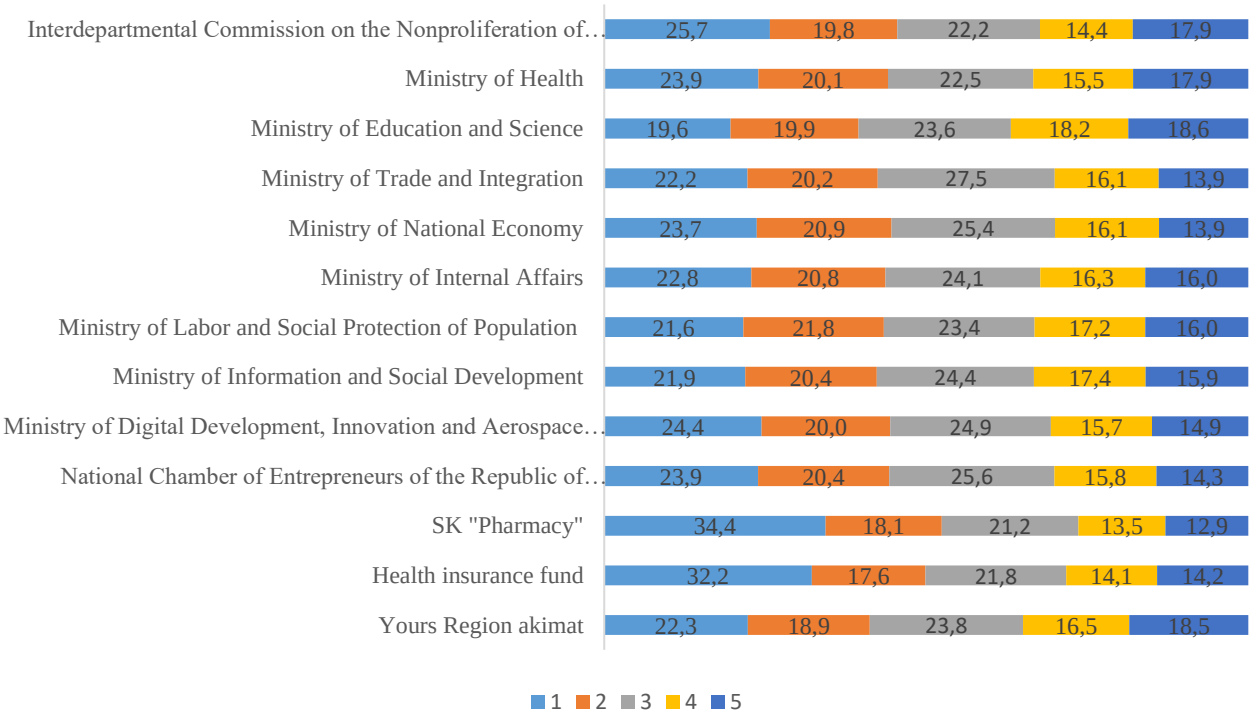


Figure 35. Information transparency of state bodies and readiness for dialogue with the population

Using the method of constructing scales *(Figure 49)*, the following cut of public opinion was obtained. According to the results of the public survey, such structures as IC "Pharmacy" and the Health Insurance Fund, as well as the Interdepartmental Commission were recognized as least open. The respondents considered the activities of

akimats, as well as the Ministry of Education and Science of the Republic of Kazakhstan, to be quite open.

In general, society does not consider the work of state bodies and structures to be open, since it was revealed for the bulk of institutions that information transparency is insufficient in the opinion of society. This conclusion is based on the fact that the number of negative elections *(score of 1 and 2 points)* for many institutions tends to 50%.

Information openness, in turn, is an important factor in increasing the efficiency of public administration. The results of the study confirm the correlation between openness and efficiency of government agencies and organizations. Thus, paired rank correlations were carried out between the answers to questions No.4 and No.17 *(Evaluate the information openness of state bodies and readiness for dialogue with the population on a scale from 1 to 5, where 1 - the work is closed and non-transparent, 5 - the department is open, any information is available)*.

The average assessment of the perception of the effectiveness of government agencies and organizations during a pandemic 2.76 out of 5 points is close to the average assessment of the perception of openness of government agencies and organizations during a pandemic 2.74 out of 5 points. The respondents rate the efficiency and openness of government agencies approximately the same and low, there is a consistency of assessments. *(tables 16-17)*.

Table 16. Assessment of the perception of the effectiveness of government agencies and organizations during a pandemic

Орган, организация	Частный	Государственный	Неправительственный	Средняя оценка
Межведомственная комиссия по нераспространению коронавируса	2,75	2,91	2,71	2,79
Министерство внутренних дел	2,82	3,04	2,90	2,92
Министерство информации и общественного	2,80	2,95	2,91	2,89
Министерство национальной экономики	2,64	2,81	2,61	2,69
Министерство образования и науки	2,80	2,95	2,79	2,85
Министерство торговли и интеграции	2,72	2,84	2,77	2,78
Министерство труда и социальной защиты	2,73	2,91	2,76	2,80
Министерство цифрового развития, инноваций и аэрокосмической	2,73	2,88	2,72	2,78
Министерство здравоохранения	2,78	2,89	2,88	2,85
НПП РК «Атамекен»	2,71	2,82	2,69	2,74
СК «Фармация»	2,52	2,44	2,29	2,42
Фонд медицинского страхования	2,63	2,56	2,57	2,59
Средняя оценка	2,72	2,83	2,72	2,76

Table 17. Assessment of the perception of information openness of government agencies and organizations during the pandemic

Орган, организация	Частный	Государственный	Неправительственный	Средняя оценка
Межведомственная комиссия по нераспространению коронавируса	2,70	2,85	2,73	2,76
Министерство внутренних дел	2,60	2,85	2,71	2,72
Министерство информации и общественного	2,62	2,95	2,74	2,77
Министерство национальной экономики	2,65	2,97	2,76	2,79
Министерство образования и науки	2,60	2,87	2,72	2,73
Министерство торговли и интеграции	2,67	2,95	2,73	2,78
Министерство труда и социальной защиты	2,67	2,94	2,87	2,83
Министерство цифрового развития, инноваций и аэрокосмической	2,77	3,11	2,77	2,88
Министерство здравоохранения	2,66	2,89	2,68	2,74
НПП РК «Атамекен»	2,60	2,86	2,74	2,73
СК «Фармация»	2,45	2,57	2,50	2,51
Фонд медицинского страхования	2,53	2,65	2,57	2,58
Средняя оценка	2,63	2,87	2,71	2,74

Calculations of rank coefficients for evaluating the effectiveness and openness of government agencies are presented in table 18.

Table 18. Spearman's rank correlation of assessment of perception of efficiency and openness of a state body or organization

State body, organization	Spearman's rank
The interdepartmental Committee on nonproliferation of coronavirus	0,6232
Ministry of health	0,6343
Ministry of education and science	0,6178
Ministry of trade and integration	0,6042
Ministry of national economy	0,6539
Ministry of interior	0,6298
Ministry of labor and social protection	0,6576
Ministry of information and public development	0,6497
Ministry of digital development, innovation and aerospace	0,6469
NCE RK “Atameken”	0,6328
SC “Pharmacy”	0,7066
Health insurance Fund	0,6931

The results of the analysis show a direct high degree of consistency in assessments of the effectiveness and openness of government agencies. Thus, the higher the assessment of the openness of a state Agency, the higher the assessment of its effectiveness. For example, the Spearman coefficient between the assessment of perceived effectiveness and the assessment of openness of the Interagency Commission on non-proliferation of coronavirus is 0.6232. This coefficient is statistically significant and high, which indicates a strong relationship between the assessments of efficiency and openness of the state body. It can be assumed that one of the components of assessing the perception of the effectiveness of a public authority during a pandemic is their information openness, which needs to be improved.

It is important to activate channels for citizens to receive information and technologies for broadcasting it by state bodies. Bringing information to the consumer in the right and reliable way. Survey participants were asked to answer a question about the sources of information about the pandemic *(Figure 50)*.

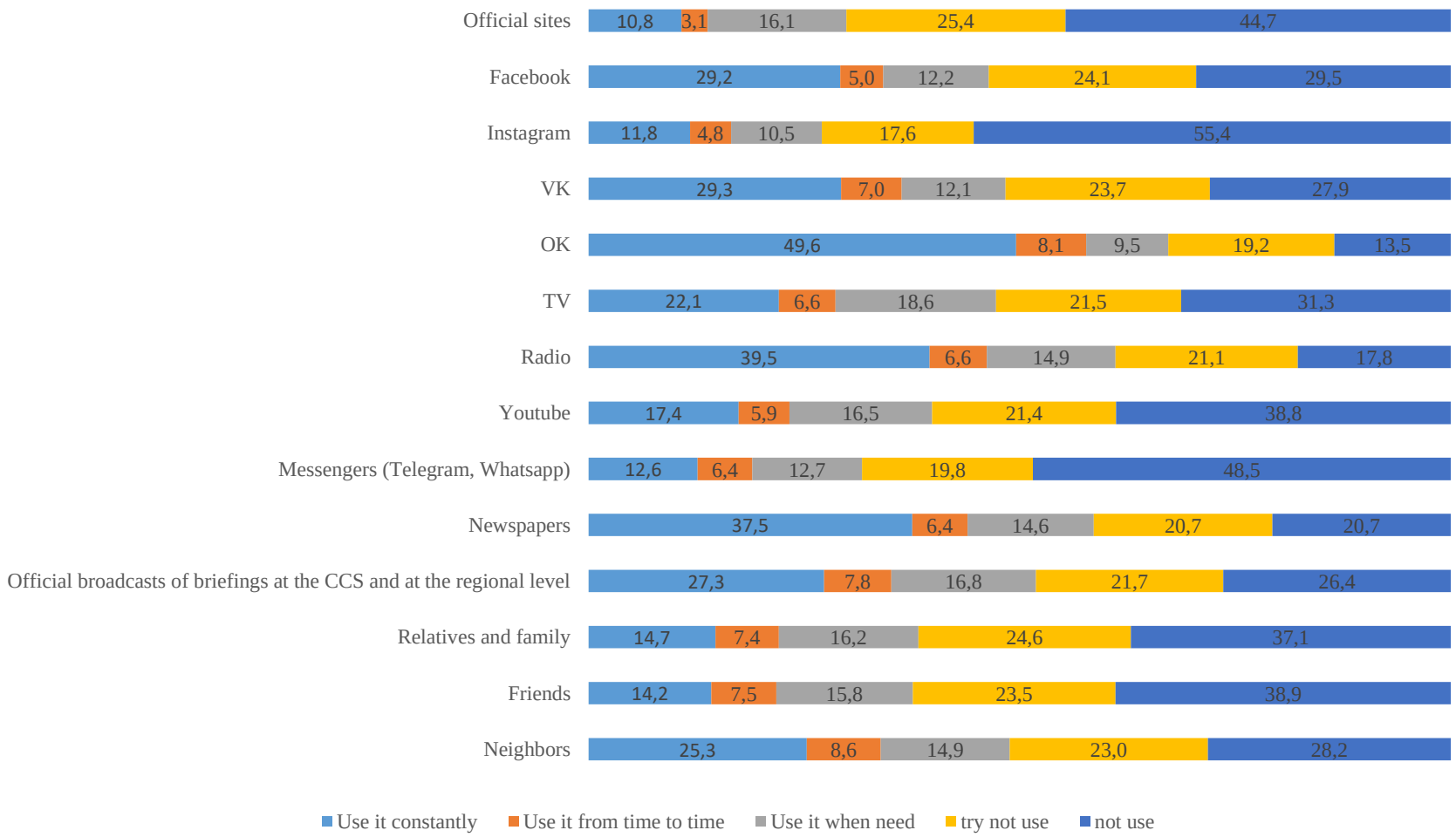


Figure 50. Which of these sources do you use to get information about the epidemiological situation and government support measures

When answering the question about the sources of information, respondents expressed their preferences for obtaining information about the epidemiological situation. The results of this cross-section make us think about the specifics of the information policy that the state is building. Thus, only 10.8% of respondents indicated that they use official websites to get information, while 44.7% of respondents do not use this source at all.

Kazakhstani people use social networks as a source of information quite actively. Instagram is one of the most frequently used channels, and more than half of the respondents *(55.4%)* rely on It. Almost equal number of respondents, about a third, prefer to use Facebook *(29.5 %)* and VK *(27.9%)* to get the necessary information about the epidemiological situation. About half of the respondents constantly use various types of messengers.

Traditional information channels, such as television, radio, and Newspapers, are not very popular. one in three of the respondents constantly uses them, and about one in five does not use them at all.

At the same time the use and trust of different sources of information are presented in the context of the topic under study by completely different criteria.

Official websites lead the polls in terms of trust. One in five of the respondents has the greatest confidence in sources from official websites and broadcasts of official briefings in the Central Communications Service and similar briefings at the regional level. There is a high level of polarization, similar proportions of respondents do not trust these sources of information.

The level of trust in the authenticity of information in social networks is quite high. Instagram Facebook and social networks have received a fairly high level of support in this category.

Citizens do not trust much information received in live communication. According to the criteria of trust, relatives, friends, and neighbors are not regarded as potential informants. The information received from them is fully trusted by 11.7 to 15.8% of respondents *(5 points)*, and not trusted by 23.1% to 31.1% *(1 point)*.

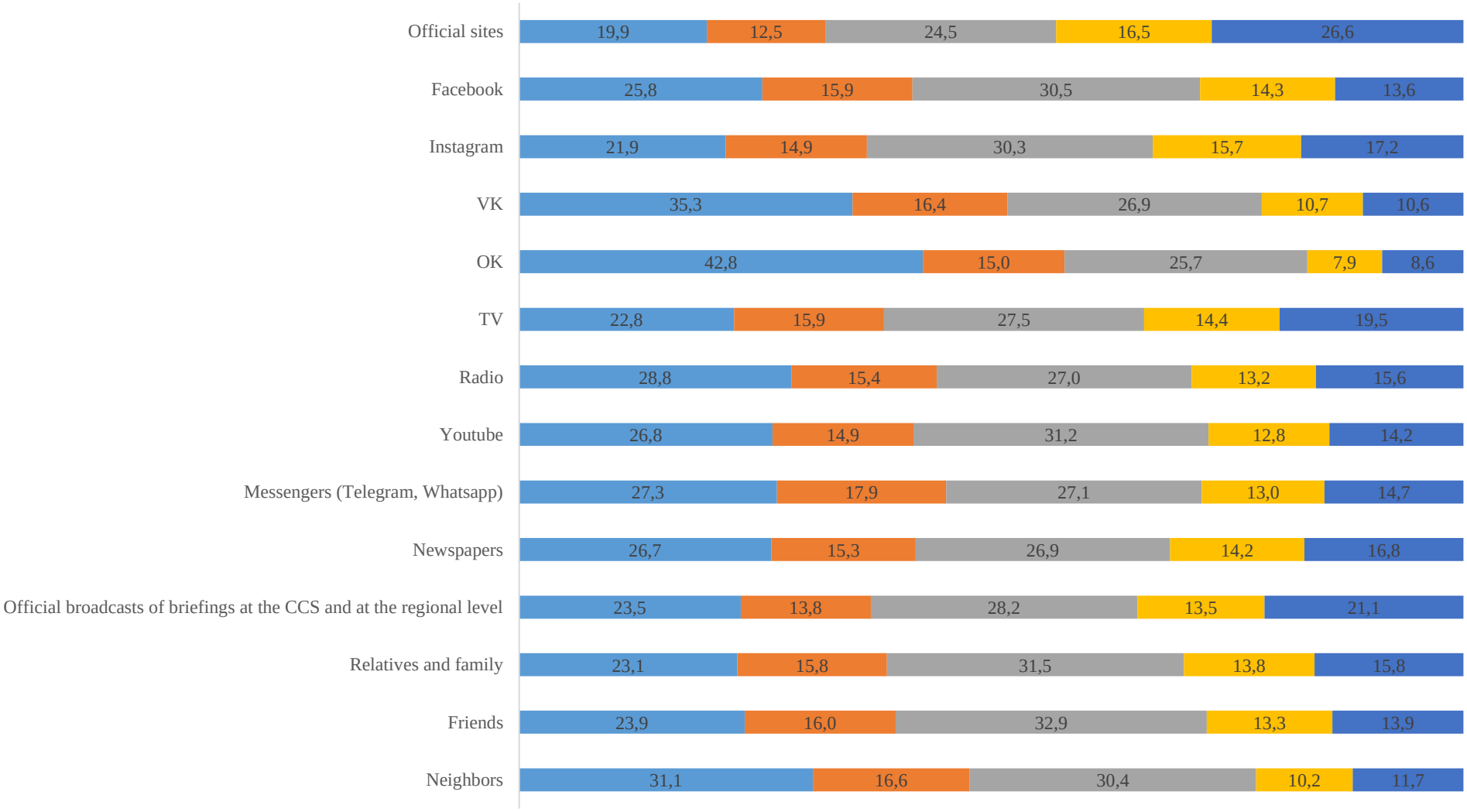


Figure 51. How much do you trust sources of information about the epidemiological situation and government support measures

Expert poll

The expert poll was conducted using the semi-structured interview technique. The experts involved 30 people who were related to public administration at the Central and local levels, business or non-governmental organizations. Expert opinion is significant in assessing the effectiveness of public administration due to the ability to identify multi-level indices and correlate between them. For statistical processing using the IBM SPSS 23 program, 5 questions were identified, assuming a ranking of the answer on a 5-point scale. Similar to the participants in the mass survey, experts conducted interviews to assess the effectiveness of government agencies during the pandemic.

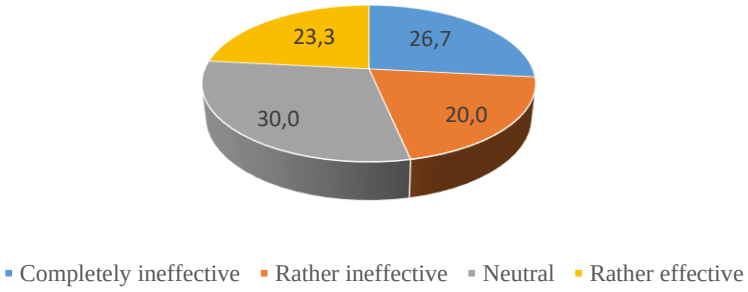


Figure 36. Assessing the effectiveness of government agencies during the pandemic

Analysis of interviews conducted with experts showed that the assessment of the effectiveness of state bodies and structures is low. Thus, 26.7% of the experts surveyed rated the efforts of state bodies and structures as 1 point *(completely ineffective)*. The rating of 2 points *(rather not effective)* was given to the state's efforts by 20% or every fifth expert. 30% of experts gave a neutral rating *(3 points)*. 23.3% of the experts surveyed recognized the state's work as partially effective, while it is worth paying attention to the fact that none of the experts gave an "excellent" rating to the state's efforts to combat the pandemic. Experts-representatives of Central and local authorities expressed the opinion that it is impossible to assess the overall performance of government agencies, it is necessary to detail questions on specific business processes.

In comparison with a mass survey, there are certain differences with the opinions of experts, they are shown in figure 53.

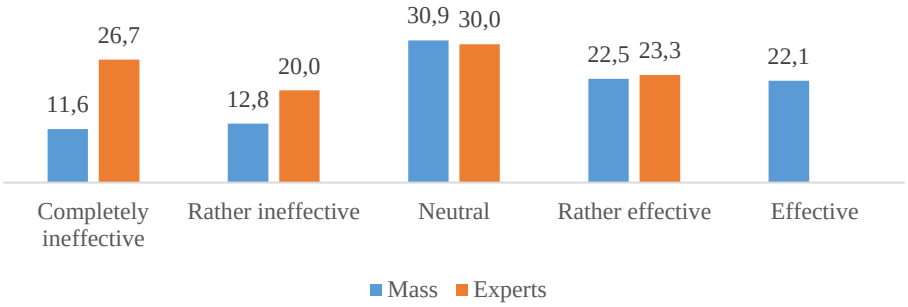


Figure 37 Assessing the effectiveness of government agencies during the pandemic

It can be concluded that experts are more critical of the situation in the field of public administration in comparison with the participants of the mass survey. Thus, 26.7% of experts consider the government's actions to be completely ineffective, while 11.6% of respondents in a mass survey Express the same opinion. It should be noted that the neutral rating belongs to both experts and respondents of the mass survey.

Further, the analysis is based on the field in which the participants of the expert survey work.

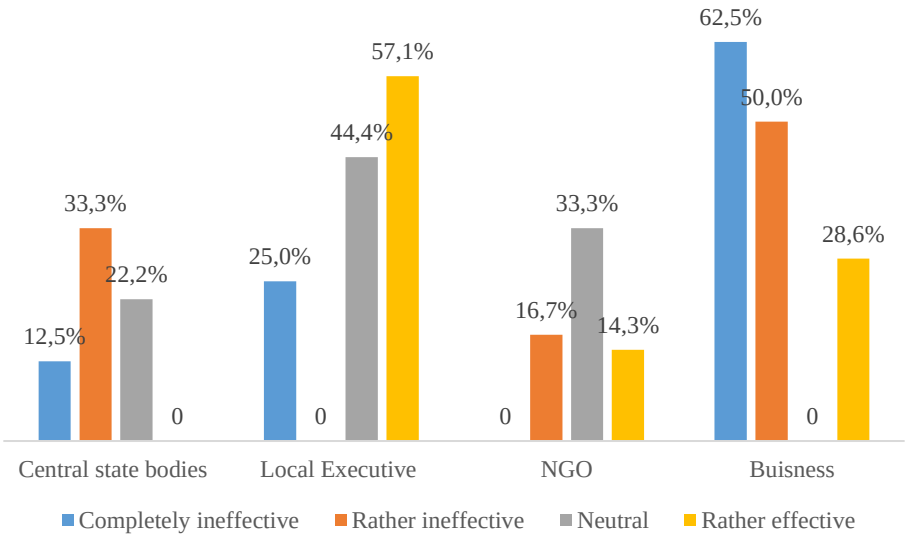


Figure 38. Assessing the effectiveness of government agencies during the pandemic

Based on the correlations by type of activity, we can conclude that there is a higher share of social optimism among civil servants, and representatives of Central state bodies tend to give a higher rating of "rather inefficient and neutral" *(two or three points on a five-point scale)*. Representatives of local Executive bodies in 57.1% of cases tend to evaluate the effectiveness of state bodies as "rather effective", which corresponds to a digital equivalent of a scale of 4 points.

Business representatives were the most critical in their assessments. Business experts rate the effectiveness of work in government agencies as "completely ineffective". Another trend related to the reflection of the picture of public opinion shows a close to neutral attitude of representatives related to the non-governmental sector. It can be assumed that this assessment is due to the fact that in the conditions of building a rigid vertical of power, "social activists" are vulnerable, and prefer to cooperate with the authorities and not be counted among the destructive elements.

Figure 55 shows linear distributions of how the state's interaction system changed during the pandemic.

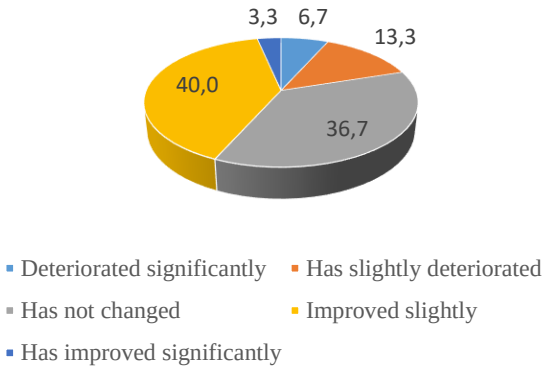


Figure 55. Has the system of interaction between Central and local government agencies and quasi-state structures changed over the entire period of the pandemic

Data analysis shows that 6.7% of the survey participants believe that the situation tends to significantly worsen, 13.3% of respondents indicated that there is a tendency to slightly worsen. 36.7% of respondents, or almost one third, indicated that there is no change. Almost the same percentage of experts *(40%)* say that the situation tends to improve somewhat. Similarly to the situation on the first issue, experts do not see any drastic improvements in the interaction of state bodies and structures. It turns out that only one expert, a representative of local Executive bodies and structures, indicated that he sees cardiac improvements in the situation *(as a percentage, it is 3.3%)*.

In the context of expert affiliation, the following conjugations are obtained.

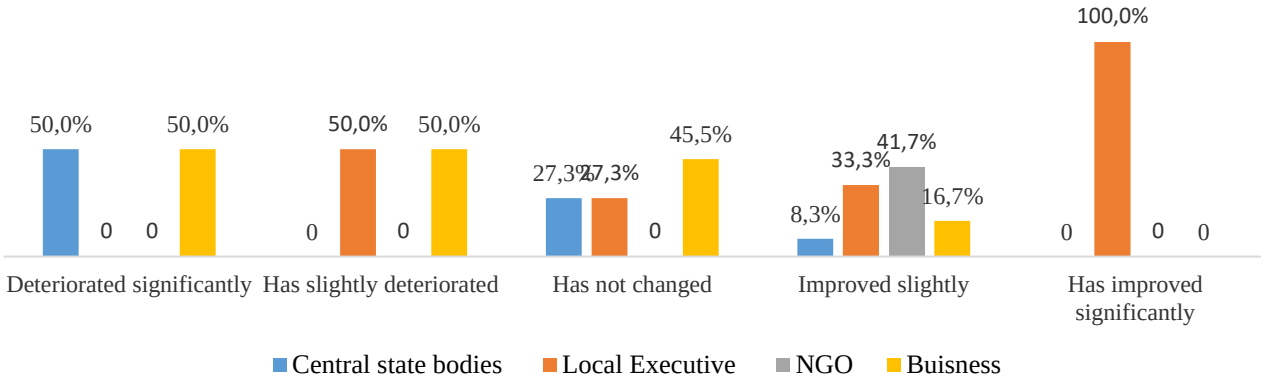


Figure 56. How do you think the system of interaction between Central and local government agencies and quasi-state structures has changed over the entire period of the pandemic?

A significant deterioration in the situation was reported by 50% of experts related to Central government agencies and business. Experts' opinions on the slight deterioration of the situation were also divided in half *(50% of experts from the field of LEB 50% of experts related to business)*. 27.3% of representatives of the public administration system and business did not change their assessments of the system of interaction between various elements of public administration. It is noteworthy that representatives of non-governmental organizations *(LEB/CSO)* were quite unanimous in their choice, they

reported a slight improvement in the situation in the field of communications *(41.7%)*. This fact can be explained by the fact that it was during the pandemic that public figures were extremely in demand. The state, unable to cope with a number of tasks, shifted their solution to public figures, it is quite logical that this was noticed and regarded as a way to improve communications.

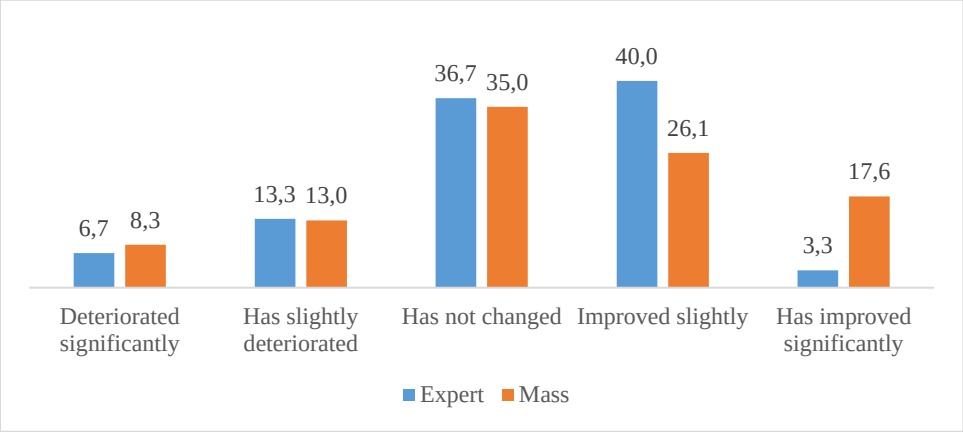


Figure 57. Has the system of interaction between Central and local government agencies and quasi-state structures changed over the entire period of the pandemic

Figure 57 shows visualized data from an expert and mass survey on what respondents think about changes in the system of interaction between government agencies and structures during the pandemic. There is a trend associated with a more critical attitude of experts. Mass survey respondents have a higher percentage of those who see the situation slightly or significantly better.

Representation of effectivness anticrises measures

To analyze the features of representation the society anticrises measures in different directions to possible throw visualizations of mass survey *(Figure58)*.

For clarity was made the graphs t allow you to see the assessment of the effectiveness of government agencies in certain industries based on a set of measures. For clarity, the data was visualized in the form of a graph, where the x-axis postponed the election of respondents on a 5-point scale, and on the y-axis a set of measures that characterize the health situation.

Visualization *(Figure 58)* reveals that the population's assessments of the effectiveness of public administration measures have a downward trend. The bulk of the charts are heading down, which indicates problems in the health sector, based on the analysis of public opinion. So, in terms of providing free medical care, you can see that the curve that reflects it on the graph clearly tends to go down. If we support this with digital data, we get that 46.1% of respondents rated the effectiveness of measures in this area at 1 and 2 points. In terms of the sufficiency of beds in hospitals, it is also clear that the population negatively assesses this aspect of health care. 53% of respondents gave a

sharply negative assessment of the situation in this area. The "convenience and availability of medical services" parameter shows similar dynamics. 49% of respondents rated the situation with the effectiveness of measures in this area as one or two points.

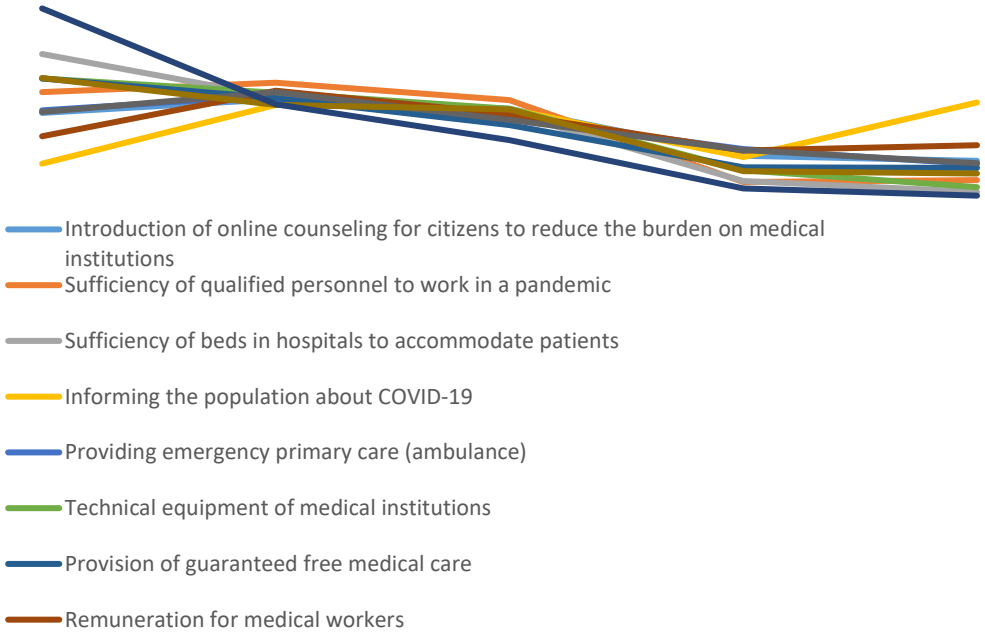


Figure 58.39 Assessment of the effectiveness of state bodies in the health sector

If you analyze individual charts, you can see an upward trend in terms of information on COVID-19 issues, as well as the remuneration of medical workers.

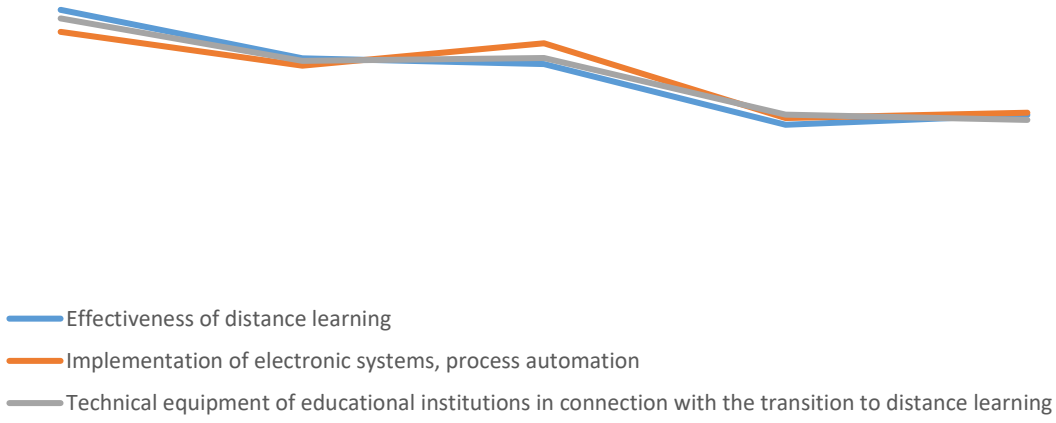


Figure 59.40 Evaluation of the effectiveness of state bodies in the field of education

The negative trend related to the assessment of the effectiveness of state bodies and structures was even more pronounced in education. The measurement was carried out according to three criteria: the effectiveness of distance education, the introduction of electronic systems and automation of processes, as well as the technical equipment of educational institutions in connection with the transition to a distance learning system.

The most alarming situation is the public assessment of the technical equipment of educational institutions. Only a quarter of respondents gave a positive assessment of the situation. And 2/3 of the survey participants expressed criticism of the effectiveness of work on this criterion.

The issue of distance learning is a sore point for society. 52.7% of respondents rated this parameter by 1 or 2 points, which indicates an extremely high level of social discontent, and a negative trend that has been formed, which the responsible authorities need to work on changing.

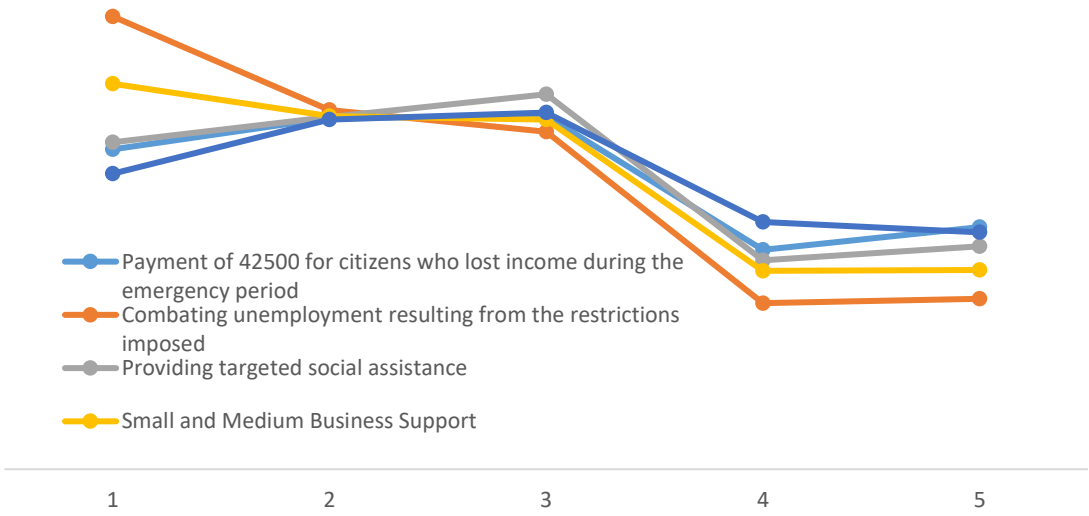


Figure 60. Assessment of the effectiveness of public administration in the social sphere

Another criterion for measuring the perception of the effectiveness of public administration in the social sphere was the set of measures used in the social sphere, such as the payment of benefits, business support, the fight against unemployment, and so on. The situation here is even more complicated. All the curves show a sharp drop, which indicates a high level of discontent and low ratings associated with the perception of the effectiveness of government agencies and structures. So, in this issue, the sharpest drop is observed on such a sensitive issue as the fight against unemployment. Only 22.7% of respondents considered working in this area effective. And the smoothest curve is available according to the criterion of the work of special PSCs. 19.9% of respondents gave a 1-point rating for this criterion, and 23.5% of respondents indicated

that the effectiveness of work under this criterion can be estimated at 2 points. 24.0% of respondents gave the work of these structures three points, and 32.5% of respondents rated it 4 and 5 points.

One of the criteria for the effectiveness of measures taken by the state in the fight against the pandemic is the public assessment of the restrictive actions of the government. In order to determine the effectiveness of public administration in this direction, the survey participants were asked to evaluate the effectiveness of various restrictive measures that the state introduces during the fight against coronavirus infection on a 5-point scale *(Fig. 61)*. The results of linear distributions are visualized in a diagram that gives an idea of the dynamics of the processes of perception of certain restrictive measures by society.

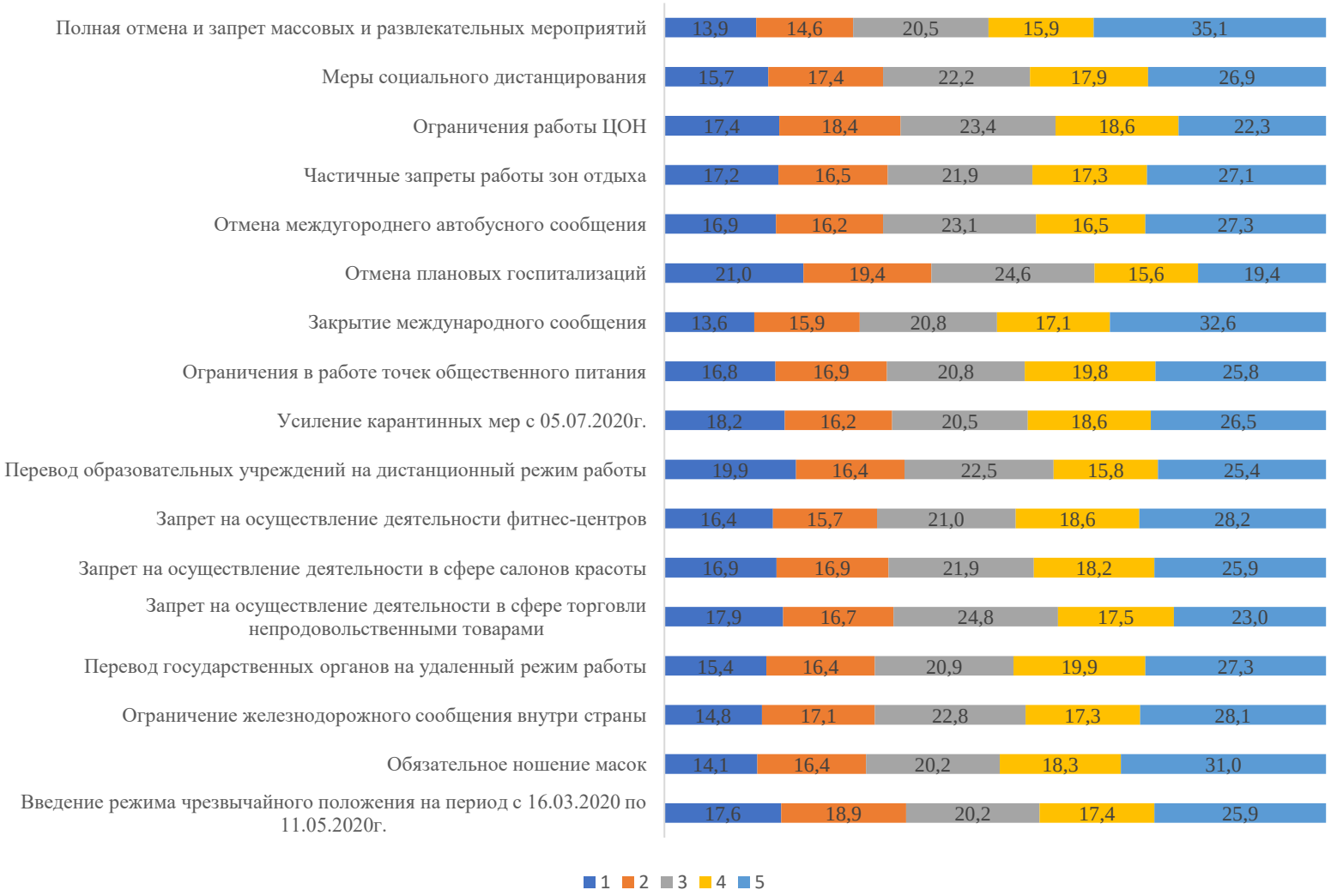


Fig. 41. Effectiveness of measures to combat COVID-19

Conclusions

The assessment was obtained on the basis of an analysis of second-order data, when the level of public administration efficiency was assessed through a public opinion survey. In general, there is a uniform distribution according to the assessment of the perception of the effectiveness of the activities of government agencies in the context of a pandemic. Thus, 11.6% of the respondents indicated that state bodies and structures worked completely ineffectively during the pandemic; 12.8% chose the criterion “rather ineffective”; 22.5% of the respondents are inclined to consider the work of state bodies and structures rather effective; 22.1% were satisfied with the quality of work of state bodies and structures. Most of the dissatisfied people live in the Kyzylorda and Karaganda regions *(almost every fourth of the respondents rated the effectiveness of state bodies and structures at 1 point)*.

The public opinion on the dynamics of the work of state bodies for the entire period of the pandemic was determined using the tools of sociology. About half of the respondents assessed positively the changes in the work of government agencies and structures during the pandemic. Thus, 26.1% of the respondents, or one in four believed that there are some changes for the better, 17.6% of the respondents indicated that the situation has a clear tendency to improve. 35% of respondents believe that the activities of a significant part of government agencies during the pandemic remained unchanged, 9.6% of respondents expressed a negative attitude towards the work of government agencies, i.e. believe that efficiency is decreasing. **For the bulk of Kazakhstanis, the authorities reacted poorly to the pandemic's challenges.**

Public opinion on the effectiveness of public administration in assessing the activities of individual bodies and structures was studied. The structures that received the maximum number of critical reviews about their work were the "Health Insurance Fund" and NPP "Atameken". Every fourth of the respondents expressed their dissatisfaction with the work of the Interdepartmental Commission.

At the same time, according to the results of the analysis using paired regression, a cluster of a group of government agencies was identified, which were formed according to similar answers, the ranking and distribution of answers are approximately the same. **The effectiveness of government agencies is assessed by the perception of the result of actions in certain areas based on their area of responsibility.** So, for example, SK Pharmacy and the Health Insurance Fund got into the same block , which received similar ratings of a low order. It is about the consistency of ratings and the order of ranking by respondents. This is an important relationship that must be used in making management decisions, for example, when developing anti-crisis strategies and building communications.

The study of public opinion allows us to conclude that there are **gaps in the work of local akimats**. 26.2% of the respondents indicated that the akimats do not respond rather than effectively deal with the threats of a pandemic, which corresponds to an

assessment of three points. Approximately the same proportion of respondents *(25.2%)* believe that local akimats react in accordance with threats. There is a high proportion of those who do not see results in the work of the LEB. 49.1% of elections are negative.

An analysis of public opinion revealed how, on a 5-point scale, society evaluates the effectiveness of various kinds of restrictive measures that the state introduces during the fight against coronavirus infection.

The abolition of planned hospitalizations *(21%)*, the transfer of educational institutions to a remote form of work *(19.9%)*, and the re-quarantine introduced from July 5 of this year *(18.2%)* were considered **minimally effective**.

According to the survey participants, among **the most effective measures** to prevent coronavirus introduced by our state are the ban on mass and entertainment events *(35.1%)*, the closure of international traffic *(32.6%)* and the mandatory wearing of masks *(31%)*. Among the measures that have a certain effectiveness were bans on the activities of beauty salons, fitness centers and non-food stores.

One of the serious threats to the security of our country is the problem of corruption, which has exacerbated in the context of the coronavirus. The survey participants were asked to describe how often they had to deal with the phenomena of corruption during the pandemic. Among **the most corrupt sectors** were, according to survey participants, health care, law enforcement agencies and public services.

Less than 50% of respondents are confident that the state will be able to help them in the event of a second wave of coronavirus. The overwhelming majority of those surveyed are confident that their financial situation will worsen in the event of a second wave of coronavirus. The highest level of dissatisfaction is in Almaty city, Aktobe and Mangystau regions.

The society does not consider the work of state bodies and structures to be open; in most institutions, the information openness of the evaluated structures was recognized as insufficient. According to the results of the public survey, such structures as IC "Pharmacy" and the Health Insurance Fund, as well as the Interdepartmental Commission were recognized as **least open**. The respondents considered the activities of akimats, the Ministry of Education and Science of the Republic of Kazakhstan to be **quite open**.

Spearman's pairwise rank correlation made it possible to reveal the relationship between the perception of the effectiveness of government agencies and the perception of their information openness, and their average rank scores are low and almost the same 2.76 and 2.74, respectively. Obviously, there is a direct correlation between the openness of a state body and its effectiveness. In the conditions of the crisis, the problem of information openness of the public administration system as a whole is actualized.

The analysis of the research results showed that the official websites of state bodies as the main sources for obtaining information about the epidemiological situation are used by the minimum number of respondents. At the same time, **information from**

social networks and instant messengers receives high levels of trust. Traditional sources of information such as radio and television are used mainly by older people.

It is also worth paying attention to the fact that the respondents mostly trust the information, which is very often used as a source for stuffing and fake news. High indices were obtained for the trust in mailings in **messengers, Instagram**, etc.

The main findings from the expert survey are correlations in assessing the effectiveness of government agencies in a pandemic with a mass survey. Experts, for the most part, are more critical in assessing the effectiveness of public administration. At the same time, experts and representatives of state authorities demonstrate a positive attitude towards the measures taken by the government in the fight against the pandemic, but the CSO is more than LEO. Business representatives express serious skepticism about the efforts of the state during the crisis period; there is a tendency associated with a high degree of mistrust in the state. **Experts pointed to ineffective measures of support from the state in all the main areas of crisis management: healthcare, education, and the social sphere.**

Representatives of nongovernmental organizations turned out to be more loyal in their assessments, demonstrating support to the state, which is probably due to the fact that during the crisis it was “social activists” who were in demand in many areas of activity where the state was not able to respond effectively. As a result, the functions of the state were partially transferred to representatives of the non-governmental sphere.

Thus, it can be concluded that the **tendencies of dissatisfaction with the efforts of the authorities in the fight against the new type of coronavirus threat prevail in society. The effectiveness of the state machinery has been questioned. There is reason to believe that lack of proper response can lead to overt forms of social discontent.** Despite the difficult period, the issue of protective measures and mechanisms should be accelerated, and not along the path of tightening, which has been done in recent months, but their diversification and giving them a targeted, targeted character.

CONCLUSION

The analysis of international experience shows that **there is no universal strategy for overcoming the crisis**. In addition, at the moment, the vast majority of States are not engaged in the post-crisis agenda, but are trying to keep economic development from a critical decline as much as possible.

The recovery policy will probably depend on the level of probable decline; the problem is the uncertainty of how long the pandemic will continue, and where the bottom level will be, from which we will have to start in the post-crisis period.

The possibilities and effectiveness of supporting the economy are individual and depend on the development of the state, the availability of financial reserves, demographics, specific mentality and even features of the political system, etc.

Basically, **the measures to support the economy** in the reviewed countries are reduced to the following:

- correction of interest rates by Central Banks;
- allocation of additional budgets for the implementation of incentive programs;
- financial incentives for businesses, banks and the credit system *(along with certain restrictions in their work to control the distribution of Finance)*;
- facilitated issuance of loans for industries, agriculture and other businesses at reduced interest rates and deferred payments;
- tax breaks for businesses to reduce pressure on them during periods of limited business activity;
- additional payments to certain categories of working citizens *(for example, doctors, law enforcement officers, etc.)*;
- support for the population and households *(including credit holidays, often for mortgage loans)*.

In General, at the moment, the policy is focused on mitigating the situation associated with falling income in the conditions of forced restrictions on business activity of the population and businesses.

Governments of all countries are balancing the need to fight the epidemic *(limiting human contact)* and attempts to keep the sectors of the economy from total destruction.

At the same time, the analysis shows that today the industrial sectors are increasingly discussing the issues **of automation and robotization** *(reducing dependence on the human factor and continuing to work in any pandemics on the principle of " robots do not get sick»)*, **digitalization for remote communications** and all technological solutions that allow **continued collaboration in the absence of direct human contact**.

In principle, these issues have been discussed for a long time, but COVID-19 has significantly accelerated these processes. In this regard, the development agenda in the next year or two will also **include the release of a huge number of people**, who will

not be in demand due to their widespread replacement with automated systems. The demand for new professions that will work remotely will increase.

All this can also put a lot of pressure on **the commercial real estate market**, as companies and organizations, including state-owned ones, will no longer need large offices *(most of the staff will work remotely)*. The commercial real estate market will also be a factor of significant changes in the economy and in the life of societies.

This situation will put a lot **of pressure on social support systems** and States will have **to deal with issues of employment**, retraining of citizens and finding new niches where millions of people can be quickly and permanently employed. It is possible that this will become a point of reference for reviewing the existing socio-economic model of development of States.

These issues, according to forecasts, will form the post-crisis agenda of state development.

The analysis of the actions of number of states in countering the epidemic allows <u>us to generalize some approaches</u> to combating the new biological threat.

<u>Policy measures</u>:

- Creation **of government headquarters for crisis response**. In the United Kingdom, Australia, New Zealand and Canada, and other countries, special committees have been established to coordinate the efforts of the Central government and connect with the regions.
- **Developing national plans to combat the epidemic**, for example, in the United Kingdom, to systematize efforts and involve authorities at all levels in the response.
- **The introduction of a state of emergency** in the country, which allows the government to use additional resources to combat the virus and impose the necessary restrictions *(on movement within the country, placing citizens in quarantine, etc.)*. This approach has been applied in China, South Korea, the United Kingdom, and others.
- **Closing state borders** for the duration of an epidemic-measures vary from closing borders with countries where an epidemic outbreak has been recorded, and preemptively with countries that are at risk of an epidemic.
- **Suspension of visa issuance** for citizens from countries with a high risk of infection, as well **as bans on travel abroad.**
- **Restriction of flights or complete cancellation of flights** to countries where there is a surge in the epidemic. This measure has been applied by virtually all States of the world, especially in the direction of Asian countries.
- **Complete closure of cities and regions for internal traffic**. Such measures were taken in China and Italy.

- The issue **of adopting a law on biosecurity**is being discussed . Such approaches are being considered in China and Russia. Similar laws apply in the UK and Germany.

Medical measures:

- **Introduction of a special quarantine** at airports, localities, and organizations using technical means, such as thermal scanners for measuring the temperature of citizens. In China, scanners have been introduced with simultaneous identification of a citizen's personal data: the full name immediately appears on the temperature screen.
- **Introduction of a quarantine at all points of transport communications**, for example, in Italy thermal scanners for measuring the temperature of citizens are installed at railway and auto stations, and in Kuwait-at seaports, in addition, the authorities have banned entry to their ports of all ships from Japan, Singapore, Thailand, Italy, Iran, Iraq.
- **The room of citizens to the private quarantine** *(visited countries with a high risk)* up to 2 weeks for isolation and observation.
- **Strengthening the work of hospitals**. In conditions of overstrain, some countries differentiate patients and serve the most vulnerable categories of citizens – the elderly, sick, and people with reduced immunity, while others are recommended to be treated at home.
- **An increase in the number of virus detection laboratories** and **an increase in the number of medical** personnel involved in this work. For example, in Spain, the number of laboratories for testing samples has now doubled from 4 to 8.
- **Large-scale regular preventive disinfection of public places**.
- **Preparing for different scenarios of the epidemic**. Thus, in Spain, so far the lowest of the three possible scenarios is being followed – "containment", until there is "uncontrolled transmission from the community" or "a mass influx of imported cases".
- **Introducing measures to "increase the sensitivity" of the health system to detect new cases**. In Spain, tests are performed on patients who have symptoms, but they are not necessarily at risk or in contact with infected people.
- **New medical tests are being introduced**. For example, Singapore has introduced a new serological test developed by the Duke-NUS Medical school that can establish a link between infected cases, which will allow authorities to determine the chain of transmission and therefore try to break it.
- **New diagnostic tests for coronavirus**, being introduced in laboratories across the UK, allow testing of 1,000 people a day.

Administrative measures:

- **Cancellation of all major and mass public events** *(festivals, conferences, sports competitions, etc.)*, including international ones. For example, in Italy, football matches and the Venice carnival were canceled, in Japan, for the first time, the cherry blossom festival was canceled, and in China, for the first time, the annual session of the NPC

*(Parliament)*similar measures have been taken in France, Germany, Switzerland, and Kuwait.

- **Temporary closure of public places to visit** – from major shopping centers *(China, Italy)* to museums and cinemas *(France, Italy, Iran)*.
- **Restrictions on going to work** – such measures have been introduced, for example, in China and Japan, where some workers have been transferred to a remote work format and widely use digital technologies. This made it possible to reduce the risk of spreading the virus in organizations, as well as on transport – the metro, trains, and buses, where people mass gather in a confined space.
- **Temporary closure of schools and universities** – including the transfer of training to an online format for continuing studies from home. This approach has been applied in China, South Korea, Japan, Kuwait, and Iran.
- **Ban on mass gatherings of people**. For example, in France, it is forbidden to gather more than 5,000 people, and in Switzerland-more than 1,000 people.
- **The penalties for violating the rules citizens** to limit internal movement. For example, fines were introduced in Italy, and in Singapore, people who provide false data about trips to epidemiologically dangerous countries are severely punished, and one citizen who violated the quarantine was even deprived of the status of a resident.
- **Control of prices and provision of medicines and prophylactic products**, including in order to avoid fraud related to them. In particular, such measures have been introduced in Russia, China, France, the United Kingdom, and others.

Economic measures:

- **Tax incentives for businesses**. For example, in South Korea, the government has introduced incentives for businesses affected by COVID-19.
- **Plans for economic support of the sectors of the economy**that were most affected by the decline in economic activity under the influence of the epidemic. In particular, such measures are being discussed in Italy.
- **Compensation payments to the population**. Thus, the leadership of the Hong Kong SAR in China plans to pay 1,200 local dollars to each resident of the region to stimulate purchasing power and support business.
- The President, Prime Minister, members of the government, as well as all high-ranking officials of Singapore **will not receive one month's salary**.these funds will be used to pay bonuses to employees of hospitals and various departments that deal with the fight against coronavirus.

Information measures:

- **Regular dissemination of reliable information** about the epidemiological situation.

Several governments have combined their COVID-19-related regulations on online platforms, allowing easy public access and allowing other regulators to learn from them.
***Canada** centralizes information on legislation, statutes, orders, and ordinances issued in response to COVID-19, including details of effective dates, on the Department of justice website: http://www.justice.gc.ca/eng/csj - sjc / covid.html.*
***Japan** publishes on its government website the basic rules for preventing and combating COVID-19: https://japan.kantei.go.jp/ongoingtopics/_00013.html.*
***Mexico** centralizes information on regulatory responses to COVID-19 at the Federal, state and municipal levels: https://conamer.gob.mx/respuestas-regulatorias-covid-19/.*
***South Africa** has posted all the rules and guidelines for COVID-19 in one place on the government's website: http://www.gov.za/coronavirus/guideline.*
*On the website**The EU** coronavirus response provides an overview of national measures taken in the field of transport, border / free movement restrictions and in support of the economy: https://global-response.europa.eu/index_en.*
*In**In Italy**, the entire legislative corpus is available on the website www.normattiva.it, including a section on measures for COVID-19 on the main page. On the government's home page, there is a separate section dedicated to actions regarding COVID-19 (legislation, interim measures, policies: http://www.governo.it/it/coronavirus-normativa).*
*In **the US**, the FDA lists all current and discontinued emergency use permits for the diagnosis and response of public health emergencies: http://www.fda.gov/medical-devices/emergency-situations-medical-devices/emergency-authorization-use of # coronavirus2019. The website presents medical devices, diagnostics, and antibody tests against SARS-CoV-2.*

- **Issue of motivational propaganda materials** to reduce panic and rally the population.
- **Dissemination of materials on measures to reduce the likelihood of infection**: from medical measures for hygiene and health maintenance to social measures, for example, in the UK it is recommended not to shake hands, in France – by tradition, not to kiss when meeting.
- **A ban on the publication of the alarmist nature of the media and social networks**, which provoke mass panic.

Social measures:

- **Mobilising the nation to fight the epidemic** through social actions. For example, in China, CCTV broadcast a report of patients and medical staff at a temporary hospital in Hubei province dancing to raise their spirits.
- **The results of the medical masks to the population**. Thus, the South Korean authorities organized the distribution of more than 7 million masks as support.

Digital measures:

- **Create special applications for smartphones** to track areas in a city with an increased virus risk. Such applications are widely implemented in China, South Korea, and Japan.

- **Using smartphone apps to identify your health status** *(ex., green – healthy, yellow-suspicious, red – sick)* in this way, a citizen with a green status can go out on the street and enter shops and other public places.
- **Creating apps for smartphones** to display information about infected people and their geographical location – in order to minimize visits to places where infected people were. Such software is implemented in South Korea. Singapore has launched an app that allows citizens placed under house quarantine to report their whereabouts to the government.

In addition, the analysis of foreign experiences showed the following:

1. The spread of the epidemic shows that all states are vulnerable-regardless of the level of economic development, the characteristics of the political system, or the capabilities of healthcare systems. At the same time, most of the losses of damage incurred by states during the global pandemic are associated with underestimation of the situation, risks of biological safety and lack of experience in response measures. Thus, **biological safety ceases to be a narrow specialization, and in fact comes to the fore as a first plan** *(from the point of view of its impact on the economy and people's lives).*

2. The response to the epidemic has **revealed regulatory problems at almost all stages**. Governments of many countries around the world are faced with a particularly difficult choice of compromises when developing force majeure rules for the population. In addition, the COVID-19 crisis has exposed the need for well-designed, evidence-based and strictly enforced regulations.

3. At the same time, political institutions and public administration systems in many countries have been unable to respond quickly to new risks due to **lack of institutional and legislative frameworks for government action in complex crises.**

4. In an epidemiological crisis the **complex and systematic actions, national mobilization, the use of additional reserves and the participation of all citizens** are critically crucial (*at least in terms of maintaining their own health, personal responsibility, following the rules of quarantine, etc.).* Under conditions in which the population sabotages quarantine and minimum sanitary requirements *(social distancing, mask regulations, antiseptics, refusal of group meetings)*, any system of public administration will be ineffective *(the examples of China and the United States are indicative, and in countries of liberal democracy it was necessary to first adopt special laws for the state of emergency regime so that the state could apply more stringent requirements).*

5. In general, **crisis management practices** should become an integral part of government responses to future shocks. In addition to an immediate response to the crisis, regulatory issues are important for ensuring economic and social recovery as well as increasing resilience to future shocks and crises.

According to forecasts, global and regional epidemics in the future will periodically occur – this is a new reality that you need to consciously prepare for. In this

regard, political, economic and public readiness for such large-scale phenomena, as modern experience shows, will be a determining factor in the effectiveness of any state strategies to respond to force majeure situations.

RECOMMENDATIONS

Taking into account the analysis of foreign experiences as well as on the basis of the assessment of the effectiveness of state measures in the Republic of Kazakhstan by interviewed experts and the population *(conducted as part of the study)*, Kazakhstan should pay attention to the **following measures** to strengthen its potential in the post-crisis period and increase its readiness for likely similar challenges.

Political measures:

- Inclusion of **biological safety issues** *(spread of infections, epidemics, etc.)* **in strategic program documents** in the field of state development and national security. When developing government development plans and programs, it is important to take into account epidemiological / biological risks and the likelihood of their recurrence.

- **Planning and coordination are essential components of an effective response**. It is advisable to develop a national plan of response to epidemiological crises for all levels of management and life *(clear rules of action for all government agencies, businesses and the population)* and in all sectors.

- **Ensuring transparency in the work of government bodies** during emergency situations is of great importance in terms of public confidence and trust in the actions of the state. Any mistakes, miscalculations or corrupt actions *(as shown by the results of the sociological survey)* will have a long-term negative impact on the perception of public policy in all areas. **Public distrust towards the actions of the authorities can become a critical factor in the perception of the effectiveness of public policy.**

- Implementation of the concept of **"Evidence-based policy"** in the practice of public administration.

− In the development of the anti-crisis strategy of the state, it is necessary to actively use the arsenal of all analytical tools, in order to to form an open data base to **provide a high-quality evidence base for management decisions**.

Economic measures:

- COVID-19 identified critical sectors of the economy, the development of which **should be strategically focused**: the production and storage of food, medicines and medical equipment, transport and logistics sector *(railway transport, for example, was less*

dependent on closed borders), digitalization and development of industries related to electronic technologies *(e-commerce, digital production, less dependent on the human factor)* and others.

− In order to restore the economy and boost production, it is important for Kazakhstan to promote issues of multilateral trade and economic cooperation on all international platforms in order to enter foreign markets *(especially neighboring countries due to transport accessibility for road and railway transport).* In this regard, the production of goods and services should be developed on an **export-oriented basis**, which implies a **significant increase in the requirements for their quality** *(widespread introduction of competitive standards in the industry, which are used in large sales markets, etc.).*

- Freeing large numbers of people from pandemic-dependent economic sectors will require large-scale **professional retraining and employment programs in new economic niches.**

- **Development of a plan to transfer the national economy to a quarantine regime and limit the business activity** of all subjects in the event of a similar epidemiological scenario. The plan should contain clear conditions and parameters for suspending or restricting the work of various spheres, mechanisms to mitigate the negative effect of a decline in business activity, measures to support economic sectors and business entities, and citizens forced to switch to remote mode.

- The creation **of a special reserve in the republican budget** in case of crisis epidemiological situations similar to the events of 2020 will increase the state's readiness to respond to possible epidemiological crises.

- Attention should be paid to the formation of the **state material reserve, taking into account possible epidemics** and other risks of biological safety. In particular, the state medical reserve system should have medical equipment, personal protective equipment, approved medicines and vaccines. The government and akimats (mayors) should have lists of all companies that are engaged in the production and supply of such reserves *(for quick contracting and ensuring the availability of the above-mentioned goods for the population)*.

<u>Measures in the field of healthcare</u>:

- Review of the work of the **Compulsory Health Insurance Fund (CHIF)**, which during the first wave of the pandemic actually withdrew from participation in the fight against COVID-19 *(according to the results of a sociological survey, together with SC "Pharmacy" received the lowest performance ratings).* It is important to develop a plan of action for the CHIF for the period of probable epidemic.

- **Development of a mass testing system taking into account the number of people.** The availability of a testing system and its availability is one of the most important factors in countering the spread of viruses. The government should consider

action plans for the rapid deployment of a network of laboratories in all regions of the country in case of possible epidemics in the future.

− It is necessary to **raise the status and scientific potential of existing biological laboratories**. Adjust the **state order in the field of education and training of personnel for the health care system** to train a new generation of virologists capable of working with different types of viruses, organize work to protect the population, vaccination, etc.

Information-communication related measures:

- Review the **mechanisms of information work in a crisis situation** in order to prevent the appearance of fake news, the spread of mass panic and destabilization of the situation. It is advisable to build a wide and stable network of updated communications «power-society-citizen» with quick feedback.

- Strengthen the role of state statistics **in providing open, reliable, timely and visible information** for monitoring and decision-making by the legislative power, administrative and economic bodies, as well as for analysis by scientific and educational communities and informing the general public.

− Create end-to-end analytics in an information system «Taldau» or in the BI system based **on associated operational data** for representing the major sectors of economy, social sphere, demography, education, building on the model-driven dashboards for decision making, allowing to increase the efficiency and quality of decisions.

Public-societal measures:

- Move to a **flexible policy of introducing restrictions** based on risk assessment both by industry and by region *(weather, population density). (For example, the probability of infection in banks and shops is much higher than in agriculture and construction).*

- Introduction of **rules of conduct of citizens and issues of protection of society in the context of a pandemic / biological risks** studies in schools, secondary and higher educational institutions as well as the armed forces. As a preventive measure, it is advisable to conduct electives and seminars in public and private organizations.

- Organization and implementation of **comprehensive foresights in the field of biological technologies, diseases of the future and global pandemics / epidemics** with modeling of probable epidemics and their impact on the life of the world community, Kazakhstan, its economy and society. These results can be applied in planning for the medium term, as well as prepare the current system of public management for possible critical changes in the future and the destructive impact of possible epidemics.

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Appendix 1.

Program of sociological research

«Public administration in the context of a pandemic»

Methodological section

Problem situation. The pandemic was a catalyst for transforming the work of the state apparatus, contributing to the rapid implementation of reforms in public administration, large-scale digitalization and revision of the human resource management system of the civil service. Common measures taken by governments around the world include switching to remote work, restrictions on movement, bans on public gatherings, funding for medical facilities, new forms of social security, contact tracing, and other measures to contain the spread of the virus. Despite the General trends, the measures taken by governments vary considerably, both in form and speed of response. These differences in strategies are debatable, as politicians and the public are faced with the question of the appropriateness of certain responses, their effectiveness, timely forcing or cancellation. In this case, performance monitoring is a key procedure for crisis management. The theoretical basis for management control is the N. Wiener principle [54]: the combination of direct management interventions with a feedback mechanism creates the necessary prerequisites for the optimal functioning of the social-economic developments in the context of the crisis. In this connection, for the purpose of a general study of public administration in the context of a pandemic, it is necessary to study public opinion in order to assess the effectiveness of the State measures taken in Kazakhstan.

Formulation of the research problem. Management performance analysis tends to shift to economic aspects. They mostly measure results against costs. However, good governance can also be characterized by social, political categories. It should also be borne in mind that indirect results that cannot be calculated may be the object of performance measurement. These are the opportunity costs of decision-making and State targets. Therefore, concepts 1, 2 and 3 and their empirical attributes have been identified for the sociological study *(see the table below)*.

Scientific and practical significance of the work. The implementation of the project is intended to make a concrete contribution to the analysis of the state's activities in the crisis period, as well as to the search for development directions in the post-crisis period. In this regard, its scientific significance is determined by the complex nature of the study of the problems posed with the use of sociological research methods and the development of conclusions and provisions based on them in relation to the studied problem.

The project is of practical significance, as it makes it possible to take into account the conclusions and recommendations contained in it for the formation of a program of practical measures in the implementation of public policy.

The purpose of sociological research. Public opinion study with the aim to formulate an "agenda" for Kazakhstan in the sphere of public administration in the crisis period.

Tasks of the research:

- study of the public reaction to the measures taken by the government during the pandemic;
- evaluating the effectiveness of government strategies from the point of view of society and experts;
- measuring the social effectiveness мер of anti-crisis response measures in the context of a pandemic.

Object of the research:

Experts *(civil servants of local and Central Executive bodies, business representatives, representatives of the non-governmental sector)* and the population of the Republic of Kazakhstan from 18 years to 65 years.

The subject of the study:

Assessments and opinions of the Republic's residents on the effectiveness of public administration in the period of the pandemic

Interpretation of basic concepts	**Empirical feature**
Concept 1.	
Effectiveness of public administration-a complex characteristic of possible, actually obtained results of performing certain functions of the public administration system.	1. General assessment of the effectiveness of public administration (CSO/m & E). 2. Assessment of the activities of individual state administration bodies. 3. Assessing the effectiveness of the pandemic response.
Concept 2.	
Social policy of the state is a set of measures aimed at ensuring favorable living and working conditions for the population.	4. The main trends of public life during the period of emergency and lockdown. 5. Social well-being in the period of crisis. 6. Efficiency and adequacy of response measures.
Concept 3.	
Anti-crisis policy of the state is a system of measures of influence by the state in order to reduce the negative effects of the crisis, protect the subjects of the national macro-system and ensure the tracks of sustainable development.	7. Satisfaction with business/population support measures. 8. Results of implementation of support measures (business / population).

The duration of the study:

During 2020, accordingy to the research schedule.

Preliminary system analysis of the research object in accordance with the problem and goals *(formulation of a General hypothesis on the subject of research)* **and the formulation of working hypotheses:**

The General hypothesis: can the second-order data *(results of sociological research)* be an adequate evidence base for assessing the effectiveness of public administration during the coronavirus crisis and developing recommendations for effective decision-making?

Working hypotheses:

- Working hypotheses are aimed at testing the assumption that the authority of the state is directly dependent on, how much citizens and entrepreneurs feel supported during an acute systemic crisis caused by a pandemic;
- There is an increase in critical attitudes towards government policy. There is a growing tendency to reject professionalism and systematic work to support the economy and citizens. The state should pay close attention to this situation and work to find ways to compromise between necessity and convenience for the population.

Methodological section

Description and justification of the system for selecting observation units.

The General population in this study is made up of residents of 14 oblasts and three cities of national significanceOf the Republic of Kazakhstan from 18 years to 65 years.

The sample size is taken from 1,700 people in a mass survey *(1 cross section)*. The studyьis based on an improbability sample. The criterion for selecting respondents is spontaneity *(due to the collection of data through an Internet survey)* based on the principles of "snowball". Representativeness is achieved by constructing correlations in certain sections, after conducting field studies in the course of analytical processingand results.

In the course of the study, an expert survey will be conducted on the technique of semi-structured interviews with 30 representatives of the expert community, including representatives of Central and local Executive bodies, businesses, and public figures.

Description of data collection methods and techniques.

To achieve this goal and solve the research tasks, a quantitative method of collecting information will be used – *a mass survey using a questionnaire*, via an Internet-survey. The survey willbe conductedin Kazakh and Russian. This type of survey allows you to quickly collect information.

The expert survey will be conducted by specially trained interviewers among representatives of targeted areas of activity

The data collection technique is a logically structured questionnaire-*a sociological research* questionnaire-a tool for collecting primary information, a replicated document that contains a set of questions formulated and linked according to certain rules.

The structure of the sociological questionnaire consists of three blocks: 1) introductory, containing an appeal, information for the Respondent about the study, instructions for completing, etc.; 2) the main, containing a set of questions on the actual problem being studied. This section has several sections devoted to various aspects of the topic being studied; 3) socio-demographic, which contains a set of questions about such characteristics of the Respondent as gender, age, ethnicity, level of education, etc.

The expert interview guide includes a set of open and scaled questions aimed at testing the same hypotheses that determined the structure of the mass survey questionnaire.

The accuracy of data is provided by cross-checking methods. Within the framework of mass and expert surveys, it is possible to double-check data, both using logical tools and mathematical modeling methods.

The research tools include a list of the following documents: a mass survey questionnaire *(distributed via Google.Docs)*, expert interview guide. The Toolkit is prepared in two languages-state and Russian.

The main procedures for collecting primary data *(mass and expert surveys)* consist of 2 stages:

Stage 1. The collection of empirical information will be implemented through a mass population survey- на based on an Internet-questionnaire distributed by mailing lists and posting in social networks.

Stage 2. Quality and reliability checks of the received information (field control)

- Quality control of the field will be provided through the use of software capabilities of digital platforms that ensure the correctness and correctness of filling in data.
- Logical control over the data fileusing the SPSScomputer program.

Ethics of research. The ethical standards of the research are, based on the ESOMAR code, according to which the researcher is responsible for not disclosing the identity of the Respondent, in order to preserve impartiality and freedom of expression. In this regard, personal data of experts is not subject to disclosure, their opinion is used in the study in a generalized form, and the estimates will be encoded.

Appendix 2

Questionnaire №_____

Dear Respondent!

We ask you to take part in a sociological survey dedicated to assessing the effectiveness of government authorities during the coronavirus pandemic. To do this, we suggest you answer the questions of the specified questionnaire. Study the questions carefully and choose the appropriate answers.

All data that you provide will be used anonymously and in a generalized form.

Thank you in advance for your cooperation!

Block 1. General assessment of the effectiveness of public administration

1. How do you assess the work of government agencies and structures during the pandemic on a 5-point scale, where 1 is ineffective and 5 is effective:

1.Completely ineffective
2.Rather inefficient
3.Neutral
4.Rather effective
5.Effectively

2. How has the effectiveness of Central and local government agencies and quasi-government structures changed over the entire period of the pandemic:

1.Significantly deteriorated
2. Slightly deteriorated
3. Not change
4. Slightly improved
5. Improve significantly

3. What do you think is the assessment of the performance of government agencies during the pandemic?

1. The situation is critical, open manifestations of discontent are possible;
2. Sharply negative assessment, growth of social tension;
3. the Assessment is rather negative, most are dissatisfied with the work of government agencies;
4. the Assessment is rather positive, approval is expressed on key points;
5. the Assessment is positive, a high level of trust in the authorities.

Block 2. Effectiveness of public administration in evaluating the performance of individual government bodies

4. Rate from 1 to 5 the response of Central government agencies and the quasi-public sector to the pandemic, where *1 – completely ineffective & 5 – effectively*. You should set a rating for each line

Organization	**assessment**
The interdepartmental Committee on nonproliferation of coronavirus	

Ministry of health	
Ministry of education and science	
Ministry of trade and integration	
Ministry of national economy	
Ministry of internal affairs	
Ministry of labor and social protection of population	
Ministry of information and public development	
Ministry of digital development, innovation and aerospace industry	
National chamber of entrepreneurs of the Republic of Kazakhstan «Atameken»	
SK «Pharmacy»	
Health insurance Fund	

5. Evaluate the response of the akimat of Your region to the challenges of the pandemic on a 5-point scale, where 1 – no response and 5 - responds immediately. *Choose one of the answer options*

1. No reaction
2. Reacts late
3. Rather than react, it doesn't react
4. Tries to respond in accordance with threats
5. Responds immediately

6. Evaluate the effectiveness of government agencies in the following areas on a scale from 1 to 5, where *1 - completely ineffective, 2 - rather not effective, 3- Neutral, 4- Rather effective, 5 - effectively:*
You should set a rating for each line

Sector	Assessment
#HEALTHCARE	
Introduction of online consultation of citizens to reduce the burden on medical institutions	
Availability of qualified personnel to work in the context of a pandemic	
Sufficiency of hospital beds to accommodate patients	
Informing the public about COVID-19	
Provision of emergency primary medical care (ambulance)	
Technical equipment of medical institutions	
The provision of guaranteed free medical care	
Remuneration of medical workers	
Provision of protective equipment for medical workers	
Convenience and accessibility of medical services	
Sufficiency of medicines in pharmacies	
# EDUCATION	
Effectiveness of distance learning	
The introduction of electronic systems, automation of processes	

Technical equipment of educational institutions in connection with the transition to distance learning	
# SOCIAL SPHERE	
Payment of 42500 for citizens who lost their income during the emergency period	
Fight against unemployment caused by the imposed restrictions	
The provision of targeted social assistance	
Support for small and medium-sized businesses	
Efficiency of the PSC, special PSC in remote operation mode	

7. Evaluate the effectiveness of measures to combat COVID-19 on a scale of 1 to 5, where 1 – Completely ineffective, 5 – effectively:

You should set a rating for each line

Measures taken	**Assessment**
Introduction of the state of emergency for the period from 16.03.2020 to 11.05.2020	
Mandatory wearing of masks	
Restriction of railway traffic within the country	
Transfer of state bodies to remote operation mode	
Prohibition of activities in the field of trade in non-food products	
Prohibition of activities in the field of beauty salons	
Ban on the activities of fitness centers	
Transfer of educational institutions to remote operation	
Strengthening of quarantine measures from 05.07.2020	
Restrictions on the operation of public catering outlets	
The closing of the international message	
Cancellation of planned hospitalizations	
Cancellation of intercity bus service	
Partial bans on recreation areas	
Restrictions on PSC operation	
Social distancing measures	
Complete cancellation and prohibition of mass and entertainment events	

Block 3. State and society in the period of emergency and lockdown

8. How does the introduction of restrictions on the movement of citizens affect the increase in the number of cases of domestic violence?

Reduces	Reduces slightly	Not reflected in	Increases slightly	Increases slightly

significantly		any way		
1	2	3	4	5

9. How does the situation with the pandemic affect the increase in the number of offenses?

Reduces significantly	Reduces slightly	Not reflected in any way	Increases slightly	Increases slightly
1	2	3	4	5

10. Evaluate the activity of the state in the context of the pandemic in the regions. *You can choose one of the answer options*

1. I believe that the policy is equally effective throughout Kazakhstan, regardless of the region and urban/rural areas;
2. There is a significant imbalance - work is primarily conducted in Nur-Sultan, Almaty and some of the major cities;
3. I Consider it insufficient to work in rural areas;
4. the work Carried out does not always take into account the specifics of the region and is therefore ineffective.

11. How often have you personally experienced various forms of corruption during the pandemic: 1 not encountered, 5 encountered often

Response **for each line.**

Field of activity	**Assessment**
Enforcement authorities	
Social security	
Health	
Education	
Public service	

12. How, in Your opinion, should the state Finance the following areas of activity

Response for each line

Field of activity	**Increase**	**Leave it unchanged**	**Decrease**
State administration			
Army and police			
Social security			
Healthcare			
Education			
Culture			
The science			
Professional sport			
Industry, heavy industry			
Transport and logistics			
Other (write it down)_____			

Block 4. Assessment of public opinion regarding the state's activities during the pandemic

13. Do you think the authorities will be able to protect You in the event of a second wave of coronavirus? *You can only choose one answer option.*
1. Rather yes
2. Probably not
3. No, it can't

14. How do you think your financial situation will change if the second wave of coronavirus starts. *You can only choose one answer option.*
1. Deteriorate
2. Improve
3. Not change

15. Did you feel support from the state during the emergency and lockdown. *You can only choose one answer option.*

16. Do you think the government will be able to protect you You in the event of a second wave of coronavirus? *You can only select one response option.*
1. Probably Yes
2. Probably not
3. No, it won't

17. How do you think, как it will change Your financial situation in the event of the onset of the second wave of coronavirus. *You can only select one response option.*
1.Deteriorate
2.Improve
3. Not change

18. Did you feel it You get support from the state during a state of emergency and lockdown. *You can only select one response option.*
1.Felt
2.Felt not fully
3.Not feel

19. Who Inыparticular wasв большей most expected to get help в under restrictions в during emergencies and lockdowns. *You can choose up to three response options*
1.State and local authorities
2.Friends
3.Relatives
4.Colleagues
5.Employers
6.Cans
7. Other (write it DOWN)_____

Block 5. Information flows during the pandemic

20. Evaluate the information openness of government agencies and readiness for dialogue with the population on a scale from 1to 5, where 1 — the work is closed and opaque, 5 — the Agency is open, any information is available:

Response for each line

Structure	Rating Structure
The interdepartmental Committee on nonproliferation of coronavirus	
Ministry of health	
Ministry of education and science	
Ministry of trade and integration	
Ministry of national economy	
Ministry of internal Affairs	
Ministry of labor and social protection of population	
Ministry of information and public development	
Ministry of digital development, innovation and aerospace industry	
National chamber of entrepreneurs of the Republic of Kazakhstan "Atameken»	
SK Pharmacy	
The health insurance Fund	
Administration in your region	

21. Which of these sources do you use to get information about the epidemiological situation and government support measures:

Response for each line

	I use it constantly	I use it from time to time	I use it if necessary	I try not to use it	Do not use
	5	**4**	**3**	**2**	**1**
Official sites	5	4	3	2	1
Facebook	5	4	3	2	1
Instagram	5	4	3	2	1
VK	5	4	3	2	1
OK	5	4	3	2	1
Television	5	4	3	2	1
Radio	5	4	3	2	1
Youtube	5	4	3	2	1
Messaging Apps (Telegram,	5	4	3	2	1

Whatsapp)					
Newspapers	5	4	3	2	1
Official broadcasts of briefings in the CCS and at the regional level	5	4	3	2	1
Relatives and family	5	4	3	2	1
Friends	5	4	3	2	1
Neighbors	5	4	3	2	1

22. Please tell me how much you trust the sources of information about the epidemiological situation o and measures of state support, on a scale *from 1 to 5, where 1 — completely distrust, 5- completely trust:*
Response for each line

Source	Evaluation
Official sites	
Facebook	
Instagram VK Official websites Score	
VK	
OK	
Television	
Radio	
Youtube Radio	
Messaging Apps (Telegram, Whatsapp)	
Newspapers	
Official broadcasts of briefings in the CCS and at the regional level	
Relatives and family	
Friends	
Neighbors	

IN CONCLUSION, PLEASE PROVIDE GENERAL INFORMATION ABOUT YOURSELF:

D1. Your gender: 1) Male 2) Female

D2. Your age:

D3. Your ethnicity (nationality):

1) Kazakh (Kazakh woman)
2) Russian (Russian)
3) Ukrainian (Ukrainian woman)
4) Uzbek (Uzbek woman)
5) Tatarin (Tatar woman)
6) German (German woman)
7) Korean (Korean woman)
8) Representative of another nationality (*write IT down)*_____

D4. Your marital status:

1. Never married

2. I Am married, including in a civil marriage
3. Divorced
4. Widower/widow

D5. Education

1) Incomplete secondary
2) Secondary General
3) secondary vocational
4) secondary special
5) Incomplete higher
6) Higher education
7) Higher education with a degree (doctor, candidate of science, master, PhD)

D7. what social category do you Place Yourself in?

1) Student
2) Civil servant
3) NGO representative
4) media representative
5) Businessman
6) The representative of the religious associations
7) Teaching staff
8) The worker in industry, construction, transport and communications
9) Trade and service sector employee
10) Agricultural worker, farmer
11) Retired people
12) Self-employed
13) Unemployed, temporarily not working, a housewife
14) Other *(write it DOWN)* _____

D8. what sector do You work in?

1) Private
2) State
3) Nongovernmental

D9. How do You assess your financial situation?

1) We live in affluence, with almost nothing to deny ourselves
2) We live satisfactorily and have everything we need
3) We can't make ends meet, many people have to give up
4) We live in poverty, we deny ourselves the most necessary things

D10. Your living conditions

1. I have my own living space
2. I rent a house

D11. Select your region of residence

1	Nur-Sultan
2	Almaty
3	Shymkent
4	Akmola region
5	Aktobe region

6	Almaty region
7	Atyrau region
8	East Kazakhstan region
9	Zhambyl region
10	West Kazakhstan region
11	Karaganda region
12	Kostanay region
13	Kyzylorda region
14	Mangystau region
15	Pavlodar region
16	North Kazakhstan region
17	The Turkestan region

D12. Specify the type of locality where you live

A city of national significance	City	Village
1	2	3

Thank you for participating in the survey!

Appendix 3

INTERVIEW GUIDE

START the INTERVIEW|_____|_____| h.|_____|_____| min.

Dear expert!

We ask you to take part in an analytical study to assess the effectiveness of government authorities during the coronavirus pandemic. To do this, we suggest that You answer the questions in this questionnaire. All data that you provide will be used anonymously and in a generalized form. Our conversation will take the form of a semi-structured interview.
The conversation will be recorded on a dictaphone, the recording of which will be used in the course of analytical processing of materials. You have the right at any time to ask to turn off the recording, if you do not want any part of the conversation to be recorded on tape, in this case we ask you to record your opinion in writing

Thank you in advance for your cooperation!

1. How do you assess the overall performance of government agencies during a pandemic? Rate the work of government agencies on a scale of 1 to 5.
1. Completely ineffective
2. Rather not effective
3. Neutrally
4. More effective
5. Effectively

2. How do you think the system of interaction between Central, local state bodies and quasi-state structures has changed over the entire period of the pandemic:
1. Significantly deteriorated
2. Slightly deteriorated
3. Not change
4. Slightly improved
5. Significantly improved

3. Rate it your условия workingconditions in remote mode range from 1 to 5, where 1 is very bad and 5 is very good.
1. I had to work in stressful, psychotraumatic conditions
2. Работать It is difficult to work, and there are organizational problems
3. Did not feel a change from the situation before the pandemic
4. I note changes for the better
5. Remote work is more comfortable than working in the office

4. What are the difficulties what do you experience when switching to remote forms of work?
1. Technical
2. Psychological

3. Organizational
4. Social
5. I don't have any difficulties
6. Others

5. What measures can help overcome them

_____
_____

6. What measures of public administration would make it possible to radically improve the epidemiological situation?

_____
_____

7. Is it necessary to take into account in the development of state policy in the field of combating the pandemic and its implementation on the ground, regional factors such as regional migration, the specifics of employment in the region and others?

1) Yes, it is necessary to take into account the existing specifics and develop different approaches;
2) more likely yes than no;
3) Rather no than yes;
4) No, the measures taken must meet uniform standards, otherwise transparency and efficiency will suffer;
5) Other

_____

8. In your opinion, what measures are most effective in the fight against COVID-19 for the Republic of Kazakhstan, in what sphere can they find their application?

1) In the field of education:

_____
_____

2) in the field of healthcare:

_____
_____

3) in the social sphere:

_____
_____

4) Directly in the sphere of your activity

_____
_____

9. In your opinion, the experience of which foreign countries and in which areas can be implemented in the strategy of confrontation COVID-19 of the Republic of Kazakhstan?
***1) In the field of education**:*

_____
_____

2) In the field of healthcare:

_____
_____

***3) In the social sphere**:*

_____
_____

4) Directly in the sphere of your activity:

_____
_____

10. In which areas of public administration have corruption risks increased in the context of the pandemic?

_____
_____

11. What, in Your opinion, is the public assessment of the results of the work of state bodies in the fight against the pandemic? Rate it on a scale from 1 to 5.

1. the Situation is catastrophic, the government shows complete failure, and a social explosion is not far away
2. Sharply negative assessment, growth of social tension
3. the Assessment is rather negative, most are dissatisfied with the work of government agencies
4. the Assessment is rather positive, with approval expressed on key points
5. The evaluation is positive, a high level of trust in the authorities

12. Your practical recommendations for dealing with COVID-19 - what you should pay special attention to*:*

1) In the field of education:

_____
_____

2) in the field of healthcare:

_____
_____

3) in the social sphere:

_____
_____

4) Directly in the sphere of your activity:

_____
_____

13. What are the problematic issues it is advisable still to be reflected in this profile

_____
_____

INTERVIEW END TIME|_____|_____| h.|_____|_____| min.

End of the INTERVIEW: thank You for participating!