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COVID–19 in transport industry: the case of Kazakhstan: government measures and public reaction

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Abstract

This study is devoted to identifying the potential for assessing public opinion through the development of assessment tools, in the context of instability of global processes. The transport and logistics system turned out to be one of the most affected areas as a result of the COVID-19 pandemic. The negative consequences are based on various factors: the closure of state borders, the introduction of restrictions on the movement of people and goods, the disruption of supply chains, a decrease in demand and purchasing power. Now, during the coronovirus pandemic, much attention is paid to recording and monitoring new cases of the disease, however, the review of the literature shows that there is a lack of research on the development of tools that allow using clear criteria for assessing the current situation. In the article, for the analysis and interpretation of public opinion survey data, modeling tools are used, based on the results of which management decisions can be made.

1. Introduction

COVID–19 has become one of the most serious global crises for the public administration system. All states of the world are in search of effective strategies to counter new types of threats. Society expects from the state an effective strategy that will help ensure security and maintain the usual standard of living. For the first time in the history of independent Kazakhstan, a state of emergency was declared from March 16 to May 11, 2020. Restrictive measures were introduced again in July 2020, a "lockdown" was announced, all facilities were closed except for grocery stores, pharmacies, and catering. The situation was complicated by restrictive measures in the field of transport, which had a negative impact on the situation of all subjects: business, population, international partners. Since the transport industry is a connecting element of the entire country macrosystem, its problems are reflected in

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the economic and social situation of economic entities and the population. This is one of the main factors influencing the mood and perception of all subjects on the anti–crisis policy of the state.

Restrictions for certain areas of activity remain to this day. The policy of their introduction is based on the matrix of the epidemiological situation, built on the principle of a "traffic light", where the "red" zone suggests strengthening restrictions, and the "green" zone suggests the possibility of easing them. The pandemic cost Kazakhstan a 3% fall in GDP in 2020. According to World Bank experts, the forecast for growth in 2020 was 2.5%. The crisis has led to a serious increase in poverty, with World Bank experts pointing out that the proportion of the poor will be 12.7%, which corresponds to more than 800 thousand people. According to the EBRD, Kazakhstan spent 8.7% of its GDP on anti–crisis support measures for the economy, which is more than other EAEU member countries. Speaking about the response of public administration to the challenges of the pandemic, it should be understood that information about the level of satisfaction, public trust is an evidence base for testing the quality and effectiveness of decisions made. The high adaptive capacity of data–driven management will allow the authorities to build effective strategies for resolving problem situations in the context of a crisis caused by a pandemic based on the principle of evidence–based policy.

The purpose of the study is to identify the potential for assessing public opinion through the development of tools – methods of qualitative analysis (survey) in the conditions of instability of global processes. The main focus is to justify the need to use various methods of data processing and interpretation. Research Hypothesis: The use of modeling tools to analyze and interpret public opinion based on a survey makes it possible to identify new approaches to managerial decision–making.

To confirm the hypothesis and study the impact of the pandemic on the situation in Kazakhstan, with the support of the Astana Civil Service Hub, in the summer of 2020, studies were conducted on the search for effective mechanisms to counter the crisis. The effectiveness of the measures taken is determined through assessments of respondents' perception of the effectiveness of government decisions.

2. Methods

Analysis of public opinion measurement data regarding the work of government bodies and structures allows you to build a model using the principles of evidence–based policy. These principles apply to the management of regions.

The principle of evidence–based management is presented as a way to implement management actions that are carried out based on the results of data analysis. The study of public opinion, during a period of acute crisis, has become a way that will allow the authorities to quickly control the situation, timely direct and adjust measures, based on how they are assessed by society and how citizens perceive state measures to administer the crisis (Karieva et al., 2020; Niyazbekova et al., 2021).

In 2020, researchers conducted a mass survey of 1,500 citizens of the Republic of Kazakhstan aged 18 to 65. The data set selected for analysis contains data on the average level of perception of the management effectiveness of organizations in the public and quasi–public sectors in 17 regions of Kazakhstan. The study is based on a non–probabilistic random sample through an Internet survey with filling out a questionnaire.

The Internet questionnaire was distributed through mailings, posting on social networks. To ensure the correctness of the online study, the survey questionnaire was developed in compliance with general methodological requirements, such as motivation, stimulation of recall, prevention of respondent memory overload, confidentiality guarantee, and more. The sample is not representative of the country's population, the use of the self–selection method suggests that the sample included active adult Internet users from 89% of the country's population with free access to the Internet in 2020 (Figure 1).

The key procedure for anti–crisis management is performance monitoring. The theoretical basis of managerial control is the feedback principle developed by N. Viner (Viner, 1958), according to which the combination of direct managerial influences with the feedback mechanism creates the necessary prerequisites for the optimal functioning of socio–economic processes in a crisis.

When analyzing the effectiveness of public administration, the social effect is of particular importance (Anzorova et al., 2021; Vasilyeva et al., 2019; Katorgina et al., 2016). With the growth of uncertainty and unpredictability of external conditions (pandemic coronavirus 2019), in which the policy is implemented, the state is forced to solve

new problems with new methods, involving new forces and often with unpredictable results. Thus, Ansell, Sørensen and Torfing researched the search for reliable management solutions in a pandemic (Ansell et al., 2020), and Di Mascio, Natalini, Cacciatore identified the need to include crisis management in research programs.

The study exacerbates respondents' perceptions of protective behaviors related to the transport sector and COVID–19. sheds new light on how income inequality expressed as the Gini index and the reported number of deaths due to COVID–19 per 100,000 inhabitants.

In a cross–country study by Barbieri et al. (2021) shows the impact on respondents' perceptions of responses to the COVID–19 passenger transport crisis response of two factors – income inequality, expressed as a Gini index, and reported deaths due to COVID–19 per 100,000 inhabitants. What is of interest in terms of choosing individual mobility models for all modes of transport (walk, bike, motorcycle, solo car, company car, bus, metro, tram, train, plane) before and during the restrictions adopted in ten countries on six continents.

It should be noted the work on assessing the effectiveness of public administration during the pandemic by country. The case of Sweden is considered by Kavaliunas et al. (2020), a comparative analysis of the situation in ASEAN countries is done by Djalante et al. (2020), for Central and Eastern European countries Nemec et al. (2020) carried out a public policy analysis during Covid 19. Bouckaert et al.'s analysis of different policies in Europe during the pandemic. (2020) shows how important the institutional environment and system administration are to manage. For the purposes of public policy, the opinion of this part of the population is the most important. Thus, according to the rule of minorities, only 4% of the active population is able to change the world (Mottaev et al., 2021; Mottaeva et al., 2021; Yang et al., 2020; Xu et al., 2020).

Particular attention should be paid to research based on surveys. So Chinese scientists, due to the fact that they were the first to experience the impact of a pandemic, are actively studying how the state responds to a crisis situation. Chinese scientists are studying how China's public health response to the pandemic and assessing the effectiveness of the measures used. Yang et al., (2020) study the behavior of university students during the pandemic in Wuhan. The survey of the population is the basis for a study of public opinion on the reactions of states and the state as a whole to the pandemic by researchers from the United States. Also Callow et al. (2020), based on a survey, examines the attitudes of older people towards social exclusion.

Thus, speaking about the degree of study of the topic, it is worth paying attention to the fact that there is an active collection and accumulation of material, in particular on the public opinion survey, while there are some problems with the development of tools that will allow the use of clear evaluation criteria using evidence. The pandemic crisis demonstrates the need for such tools, the contribution of the authors is the development of tools that allow you to quickly evaluate the effectiveness of certain measures that the state is trying to implement to counter the threats of the crisis.

3. Results

To improve the quality of the data, the received array of responses from all suspicious respondents was cleaned. Elimination of sampling bias was carried out using post–stratification – re–weighting based on gender and region categories. The post–stratification step is completed by calculating the weighted sum in each region to obtain the posterior predictive samples from the survey distribution at the country level.
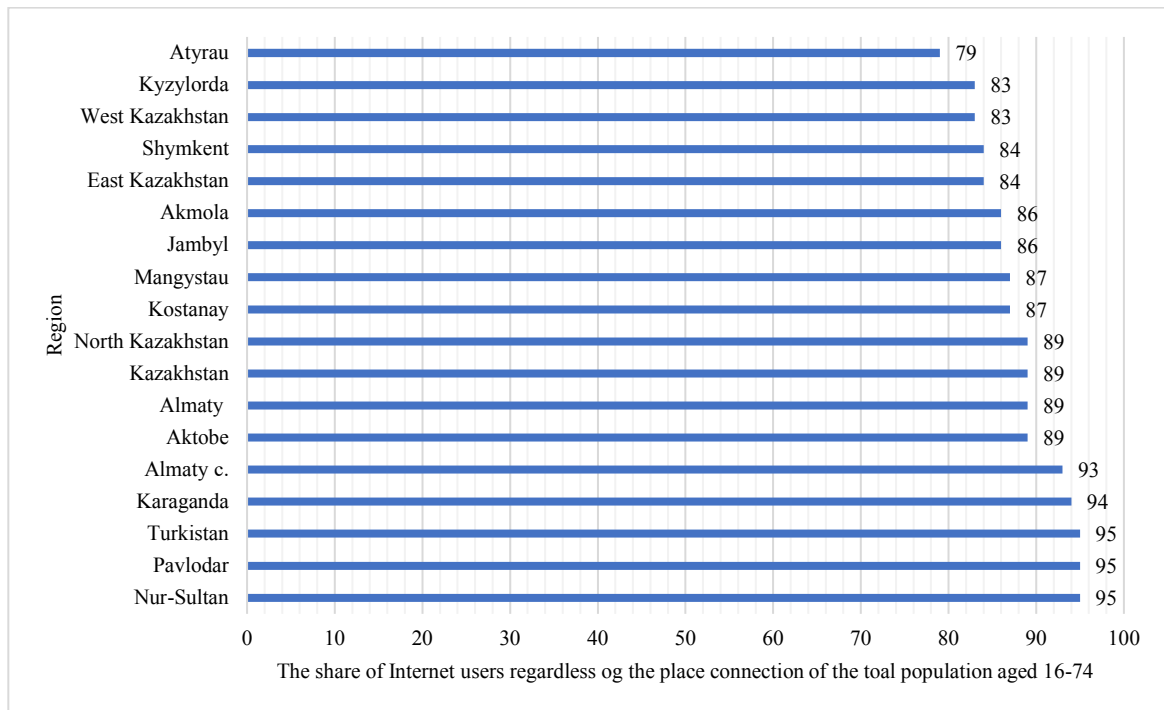
Fig. 1. The share of Internet users aged 16–74 of the total population of the regions, regardless of the place of connection.

The data set contains the analysis and processing in coded form of answers to the question "Rate from 1 to 5 the effectiveness of the work of central government agencies and the quasi–public sector in a pandemic." The score is discrete from 1 to 5, where 1 is completely ineffective and 5 is effective. The mass survey questions were tested by calculating the Cronbach's Alpha coefficient, which shows a high level of reliability. The correlation coefficient of questions and answers with each other is in the range of 92–99%, the Scale reliability coefficient is 98.9%.

Table 1. Cronbach 's Alpha Coefficients.

Questions	Average Interitem covariance	Cronbach 's Alpha
Do you think that public authorities disseminated information sufficiently during the pandemic?	0.99	0.97
Do you think that during the pandemic, information from government agencies was prompt?	0.99	0.97
In your opinion, how effective is the work with the population during the pandemic of the following state bodies?	1.17	0.98
In your opinion, how open are government agencies to dialogue with the population in a pandemic?	1.17	0.99
From which channels is it more convenient for you to receive information in a pandemic?	0.94	0.97
Please rate the availability of information about the pandemic using the following forms: 1 – very bad, 2 – bad, 3 – satisfactory, 4 – good, 5 – excellent.	0.99	0.96
Please rate how convenient it is for you to use the following channels of communication with government agencies?	0.95	0.95
Please rate how often you use the following sources of information about the epidemiological situation during the pandemic, where: 1 – do not use; 2– try not to use; 3 – use as needed; 4 – use from time to time; 5 – I use it all the time.	1.00	0.95

Do you experience a lack of information during a pandemic? Please rate your degree of informational satisfaction on a 5–point system, where 1 is absolutely not satisfied, 5 is completely satisfied.	0.42	0.60
Please rate how often you receive conflicting messages from the authorities during the pandemic on a 5–point scale, where 1 is rare, 5 is very often.	0.42	0.60
Do you consider the measures of state bodies to stabilize the epidemiological situation effective? Please rate on a 5–point system, where 1 is completely ineffective, 5 is effective.	0.42	0.60
Do you agree with the statement: "I have no difficulty in finding the necessary information from government agencies on the epidemiological situation?" Please rate your answer on a 5–point scale. (1–strongly disagree, 5–strongly agree).	0.42	0.60
Do you agree with the statement: "There are problems in providing information to the public from government agencies in a pandemic." Please rate your answer on a 5–point system: (1–completely disagree, 5–completely agree. Availability, specificity, conciseness, understandability, relevance of information)	1.64	0.98

Somewhat non–identical results are observed in questions 9–12 regarding the lack of information, its inconsistency, the effectiveness of government measures and the difficulty of finding the right information, the Cronbach Alpha coefficient is 0.60. Each attribute in the questionnaire can be interpreted as a generation in the data array of a breakdown of respondents according to the number of gradations of this attribute. Gradation is formed by examining the number of people who answer a question, as well as identifying a group of people who think about the same. This feature of public opinion formation legitimizes the cluster analysis method chosen by the authors as a research tool. Technical tools – a package of applied programs SPSS, Statistica, Power BI. Studying the situation in society through measurements of public opinion and subsequent mathematical modeling of the situation provides a valid set of data that contributes to the adoption of a deliberate and effective decision.

The conducted rank correlation analysis between the assessment of the work of state bodies as a whole and individual state bodies, organizations with the verification of the statistical significance of the results according to Spearman, made it possible to form associative cluster groups. This study assesses the potential of public administration through the prism of public opinion, providing an opportunity to receive immediate feedback. All regions were divided into classes based on a set of parameters. An analysis was carried out, the main result of which was the conclusion that the observations that fell into one group can be considered as indicators of the degree of intensity of the conflict potential. Indicators of conflict potential can be used by managers to analyze the situation in terms of the level of conflict in the country. In this case, the calculations made allow, based on a set of certain group parameters, to identify clusters of objects according to given variables.

Table 2. Results of cluster analysis.

Region	Average	Standard deviation	Cluster	Cluster average
Nursultan	2,60	0,16	1	
Almaty	2,57	0,19	1	
Aktobe region	2,64	0,12	1	2,638 (Group 1)
Almaty region	2,74	0,20	1	
Atyrau region	2,72	0,12	1	
Mangystau region	2,56	0,21	1	
Shymkent	2,80	0,12	2	
Akmola region	2,93	0,16	2	
Karaganda region	2,91	0,12	2	2,886 (Group 2)
Kyzylorda region	2,86	0,26	2	
Turkestan region	2,93	0,07	2	

East Kazakhstan region	3,08	0,17	3	
Zhambyl region	3,07	0,13	3	
West Kazakhstan region	3,10	0,12	3	3,183
Pavlodar region	3,17	0,13	3	(Group 3)
North Kazakhstan region	3,40	0,16	3	
Kostanay region	3,28	0,09	3	

Conflictogenicity is disagreements, unsatisfied expectations, tensions caused by the actions of various social communities or political leaders.

Social conflictogenicity is a set of tensions of a social, mental and socio–psychological nature, which, under certain conditions, can develop into a conflict.

Kazakhstan is a unitary state, but due to the peculiarities of development, it turned out that regional management in the field is poorly developed. The severity of the crisis necessitates a fundamentally new approach to management, which provides for the implementation of completely different principles, functions, methods and tools. The regions of Kazakhstan were divided by SPSS into three clusters according to the numbers given in Table 1. For example, 1–Nur–Sultan, 3–Shymkent.

The average value for the cluster became the basis for dividing into groups, Group 1, Group 2, Group 3 correspond to the severity of the conflict potential.

Group 1 consisted of 6 regions of Nur–Sultan, Almaty, Aktobe, Almaty, Atyrau, Mangystau regions. This cluster characterizes regions with conflict potential (civil activity) – on average, at the level of 2.638. In these regions, the dissatisfaction of citizens with the actions of the authorities in countering the pandemic is clearly expressed. Evaluations of the effectiveness of actions were at a low level. It is the two capitals, the zone of the Almaty urban agglomeration and the regions in the west of the country that demonstrate a high number of cases.

Group 2 (5 regions): Shymkent, Akmola, Karaganda, Kyzylorda, Turkestan regions. The cluster characterizes regions with an average factor of conflict potential (civil activity) – on average at the level of 2.8.

Group 3 (6 regions) is East Kazakhstan, Zhambyl, West Kazakhstan, Pavlodar, North Kazakhstan, Kostanay regions. This zone is characterized by a higher level of public assessment of the effectiveness of the actions of the authorities. This cluster united the regions with the lowest factor of conflict potential (civil activity) – on average at the level of 3.18.

Group 3 is mainly regions located along the Kazakh–Russian border. It should be noted that the geographical location along the border is not the only factor determining the composition of the cluster, as this cluster includes areas with a relatively low population density. Group 3 included mainly the regions of the south and partly the center of the country. Group 1 united both capitals, regions in the west and southeast of Kazakhstan. There is a trend associated with low levels of assessment of the effectiveness of the authorities' actions to combat the pandemic. The chosen methodology allows introducing the method of measuring social conflict potential. Such work gives the authorities the opportunity to understand in which case a social conflict is possible, and to work in advance to prevent it. At the same time, it is important to understand that the "red regions" can also be assessed as potentially promising regions in terms of the development of civil society. "Green regions" have a pronounced level of social optimism due to the influence of such factors: population density, economic situation, availability of medicines, etc.

Also, it is advisable to note among the confictogenic factors the restrictions on passenger traffic, which led to the disruption of traditional ties in social groups of the population. Thus, in 2020, compared to 2019, revenues from passenger rail transport decreased by 53.9%, air passenger transport – by 54.3%, and bus transportation by 33.4%. An analysis of the responses allows us to unequivocally speak about the presence of gaps in the work of akimats in the field. Each of the answers was scaled from one to five points. Low levels of satisfaction, from 1 to 3 points, correspond to the ratings "no response", "reacting with delay" and "rather not responding than responding", thus 49.1% of respondents are not satisfied with the way the local authorities are coping with the coronacrisis situation.

The study of the data set and the results of cluster analysis show that the largest number of those who believe that akimats do not respond to the challenges of the pandemic live in Nur–Sultan (15.2%), Atyrau region (16.2%),

Aktobe region (14.8%) and Kyzylorda region (12.8%). Those. regions located in the "red" and "yellow" zones of the traffic light of social conflict.

An analysis of the answers of the respondents of the survey allows us to see the assessment of respondents on the effectiveness of the work of akimats (Figure 2).

The minimum level of giving low ratings to the activities of the akimat is observed in the North Kazakhstan region, only 4.8% of respondents indicated a belated reaction from the akimat. 72.1% of residents of the Kostanay region (score of 4 and 5 points) are satisfied with how their akimat works in a pandemic. Separately, it should be noted that 41.1% of the residents of the East Kazakhstan region gave an "excellent" rating to the work of akimats. Based on the results of cluster analysis, these regions are included in Group 3.

Thus, the methodology developed by the authors shows how the information obtained as a result of this work can be used as a basis for decision–making by public authorities. A data set of this kind can serve as an evidence base for developing a communication strategy in a crisis.

Another method of analysis developed by the authors of the study allows us to speak about the degree of efficiency of the work of central government bodies and the quasi–public sector. The object of analysis was perception assessments, i.e. answers to the questions of the mass survey questionnaire: How do you assess the work of state bodies and structures during the pandemic in general? Rate from 1 to 5 the effectiveness of the work of central government agencies and the quasi–public sector in a pandemic. Responses are given on an ordinal scale from 1 – not at all effective to 5 – effective.
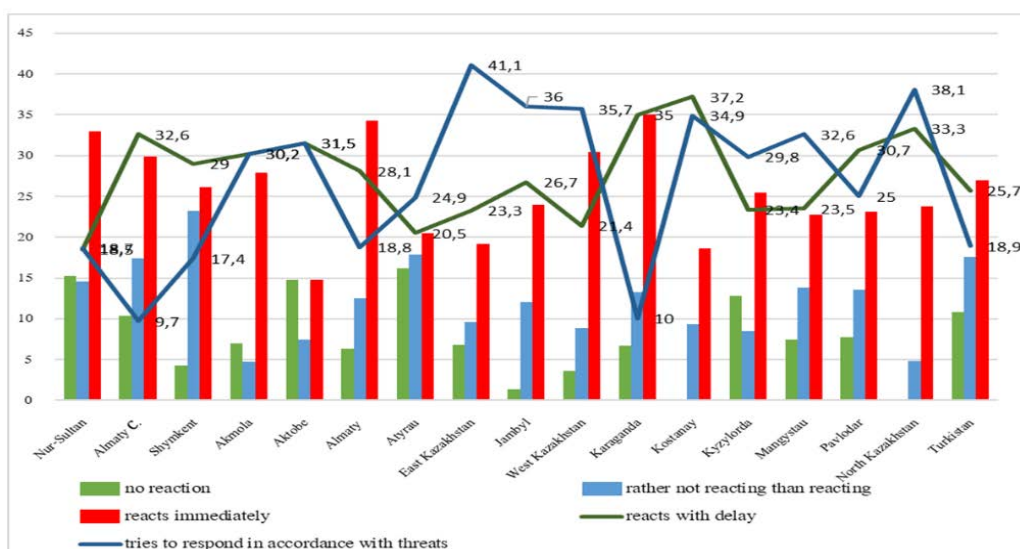

Fig. 2. Akimats' reaction to the challenges of the pandemic.

The assessment of government agencies during the pandemic as a whole was used as the first variable, the assessment of the effectiveness of the work of the Interdepartmental Commission on the Non–Proliferation of Coronavirus was used as the second variable, the assessment of the activities of the Ministry of Health was used as the third variable, and all variables (government agencies, organizations) were coded accordingly.

Due to the fact that the variables have ordinal scales, Spearman's sample rank correlation coefficient was used.

By means of calculations in the statistical package Statistica 13, a check was made of how the assessment of the work of state bodies as a whole is connected with the assessment of the effectiveness of individual bodies and organizations. All scores are statistically significant. The coefficients are greater than 0.4, which shows a moderate direct relationship between the perception of the assessment of the work of state bodies in general and the perception of the work of individual bodies.

Interpreting the results obtained, it is possible to make an assumption that the assessment of the work of government agencies during the pandemic, in general, is most closely associated among respondents with the

assessment of the work of the interdepartmental commission on the non–proliferation of coronavirus (0.489) and the weakest coordination of assessments among all state and quasi–state bodies "Atameken" (0.404). It can be concluded that the majority of Kazakhstanis tend to evaluate the activities of government agencies in general through the perception of the activities of the Interregional Commission (Table 3).

Table 3. Spearman's coefficients between the assessment of the work of government agencies as a whole and individual government agencies, organizations

Pair of Variables	Valid N	Spearman R	t (N–2)
Interdepartmental Commission on the Nonproliferation of Coronavirus	950	0.48	17.27
Ministry of Health	950	0.42	14.37
Ministry of Education and Science	950	0.42	14.41
Ministry of Trade and Integration	950	0.40	13.67
Ministry of National Economy	950	0.42	14.49
Ministry of Internal Affairs	950	0.47	16.56
Ministry of Labor and Social Protection	950	0.45	15.75
Ministry of Information and Public Development	950	0.44	15.36
Ministry of Digital Development, Innovation and Aerospace Industry	950	0.42	14.41
National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken"	950	0.40	13.61
Pharmacy Insurance Company	950	0.42	14.39
Health Insurance Fund	950	0.43	14.88

Note: Spearman Rank Order Correlations (Spreadsheet10), MD pairwise deleted, marked correlations are significant at p 0,5000.

It should be noted that full correlation is not possible in social studies, and in this situation from 0.5 to 0.6 correlation can be considered strong, from 0.3 to 0.5 – moderately strong, below 0.3 – weak. On the basis of pairwise correlations, groups of government agencies were identified that are closely associated with respondents, as strongly related in terms of the perception of work efficiency, let's call them associative groups (Table 4).

Table 4. Pairwise rank correlations, according to "performance evaluation".

Government agencies	Variables	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
Assessment of the work of state bodies in general	P1	1.00	0.48	0.42	0.42	0.40	0.42	0.47	0.45	0.44	0.42	0.40	0.42	0.43
Interdepartmental Commission on the Nonproliferation of	P2	0.48	1.00	0.82	0.72	0.76	0.77	0.76	0.77	0.76	0.74	0.74	0.68	0.71

Coronavirus														
Ministry of Health	P3	0.42	0.82	1.00	0.74	0.73	0.76	0.75	0.78	0.74	0. 74	0.73	0.72	0.74
Ministry of Education and Science	P4	0.42	0.72	0.74	1.00	0.76	0.74	0.73	0.73	0.73	0.74	0.72	0.64	0.63
Ministry of Trade and Integration	P5	0.40	0.74	0.73	0.76	1.00	0.82	0.76	0.75	0.76	0.75	0.76	0.70	0.72
Ministry of National Economy	P6	0.42	0.77	0.76	0.74	0.82	1.00	0.81	0.83	0.78	0.77	0.80	0.71	0.72
Ministry of Internal Affairs	P7	0.47	0.76	0.75	0.73	0.76	0.81	1.00	0.80	0.79	0.76	0.77	0.64	0.64
Ministry of Labor and Social Protection	P8	0.45	0.77	0.78	0.73	0.75	0.83	0.80	1.00	0.80	0.79	0.76	0.71	0.74
Ministry of Information and Public Development	P9	0.44	0.76	0.74	0.73	0.76	0.75	0.83	0.80	1.00	0.81	0.82	0.68	0.72
Ministry of Digital Development, Innovation and Aerospace Industry	P10	0.42	0.74	0.74	0.74	0.75	0.72	0.76	0.79	0.81	1.00	0.80	0.71	0.72
National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken"	P11	0.40	0.74	0.73	0.72	0.76	0.80	0.77	0.76	0.82	0.80	1.00	0.74	0.73
Pharmacy Insurance Company	P12	0.42	0.68	0.72	0.64	0.70	0.71	0.64	0.71	0.68	0.71	0.74	1.00	0.85
Health Insurance Fund	P13	0.43	0.71	0.74	0.63	0.72	0.72	0.64	0.74	0.72	0.72	0.73	0.85	1.00

All Spearman's correlation coefficients are statistically significant; the table contains groups with strong cross–correlations of perceptions of performance evaluation (greater than 0.8).

Based on the results of the calculation, four associative groups were identified from the total volume of identified state institutions, which unite ministries and organizations that are similar in the type of assessments received. There is a connection between their activity and the assessment of their perception by respondents in the form of connected blocks. In each block, the answers of the respondents have a similar ranking of assessments of the perception of the effectiveness of ministries and organizational structures. (Niyazbekova et al., 2021), (Mottaeva et al. 2020).

In this case, the prioritization in the assessment is implied, which allows them to be combined into similar associative cluster groups. (table 5).

Table 5. Associative cluster groups.

Composition	Comments
Ministry of National Economy, Ministry of Trade and Integration, Ministry of Internal Affairs, Ministry of Labor and Social Protection, National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken".	All organizations are connected with the solution of economic issues
Pharmacy Insurance Company, Health Insurance Fund	Outsiders of ratings, provision of medicines, treatment
Ministry of Internal Affairs, Ministry of Labor and Social Protection	We had direct contact with the population, solved social issues
Ministry of Labor and Social Protection, Ministry of Information and Public Development, Ministry of Digital Development, Innovation and Aerospace Industry	Engaged in the organization of social payments, authorized body, information support, technical support

In this case, the assessment of the effectiveness of the activities of state bodies is assessed based on the perception of the result of actions in certain areas, based on their area of responsibility. The effectiveness of the activities of state bodies whose area of responsibility coincides is ranked approximately the same. The multidimensionality of the analysis is provided by different sets of variables used for the analysis.

Among the criticized organizations are IC "Pharmacy" and the Medical Insurance Fund, and a smaller number of sharply negative reviews refers to government bodies located in cluster group 2.

Let's compare how the results of mathematical analysis and the findings are corrected with the results of the data obtained in the course of a sociological survey. So, the respondents were offered a list of organizations that are shown in the tables above, they were asked to rate them on a scale from 1 to 5, where 1 is completely ineffective and 5 is effective.

The public spoke sharply negatively about the activities of such structures as the "Medical Insurance Fund" and NCE "Atameken". Every third of the respondents (31.0%) indicated that the work of the Federal Migration Service is completely ineffective, which corresponds to a score of 1 point. 36.2% gave 1 point to the work of NCE Atameken during the pandemic.

An estimate of 2 points ("partially effective") is the election corridor from 19.5 to 25.5%. At the bottom of this border is the 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.

From 19.8 to 26.6% of the respondents rated the activities of state bodies and structures at 3 points. In the lower part of this range of elections were such structures as NCE "Atameken" and the Ministry of Health.

The corridor of the elections is assessed as "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 Social Development.

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

As a result of the analysis of the survey results, a certain similarity was revealed in the respondents' assessment of the activities of individual government agencies and other organizations that participated in the implementation of anti–crisis measures in the country. The information obtained is of practical importance in building communications and organizing the work of government agencies in close interconnection by levels and areas of activity in the post–crisis period.

4. Discussion

At the moment, there are many platforms for monitoring the situation with COVID–19. So Johns Hopkins University record new cases of coronovirus, scientists from Oxford University maintain real–time updated dashboards on the dynamics of incidence, deaths, vaccination rates, at Nazarbaev University created an epidemic

simulator that uses real data to predict the dynamics of the spread of COVID–19. All this makes it possible to receive and use information in a timely manner. However, they do not provide effective tools for crisis management. While a significant contribution of this article is the development of such tools that can be used for timely assessment of a crisis situation and making effective management decisions.

Studying how society responds to government measures to counter the crisis, through the study of public opinion, provides a valid data set that contributes to making an effective decision.

Relying on public opinion in this case solves the problem of the lack of rules and regulations, the authorities receive valid data for making an effective decision. The clustering of mass survey data carried out by the authors made it possible to identify the level of social conflict/civil activity in the territorial context (conflictogenicity cartogram) in order to develop a set of preventive measures to reduce social tension and organize communication work with the population.

We are talking about meaningful 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–based basis for the development of a communication strategy in a crisis.

Strategic management. The validity of the results of Internet surveys can be ensured by comparison with the results of similar studies. This issue is related to digital governance – the formation of a database and knowledge of all studies in the field of assessing the effectiveness of the public administration system, providing for automatic search and comparison of results. The specific benefit of the knowledge base will depend on its content and algorithms for its processing. Using the knowledge base allows us to make management more flexible, adapted to permanent crises, including the coronovirus pandemic.

Regular Internet surveys on the topics of public administration efficiency allow you to get timely feedback from the active part of society on government actions in specific cases. The published results of polls contribute to the formation of an idea about the structure of society, they can change the positions and intentions of the majority. The results of the polls form a general idea of what problems are important for society, that is, the line of division of discussions. By publishing survey results in the media, you can manage the topics of public discussions – promoting topics by priority.

5. Conclusion

Ensuring transparency in the authorities during emergency situations is of great importance in terms of public confidence in the actions of the state, which correlates with information openness. According to the results of the survey, society does not consider the work of state bodies and structures to be open; in the majority of institutions, the information openness of the assessed structures was recognized as insufficient. The least open structures were recognized as IC "Pharmacy" and the Medical Insurance Fund, as well as the Interdepartmental Commission. Respondents considered the activities of akimats, the Ministry of Education and Science of the Republic of Kazakhstan quite open.

When developing an anti–crisis strategy of the state, it is necessary to actively use the arsenal of all analytical tools, form an open data base to provide a high–quality evidence base for management decisions – the concept of "Evidence–based policy" should be introduced into public administration practice.

The analysis of public opinion in this situation seems to be an effective and efficient procedure that makes it possible to fully use the adaptive potential of management mechanisms.

At the same time, it is important to compare empirical data with a functional set of a hierarchized set of evidence in order to be able to use the results of statistical analysis in practice to influence measures on the policy of states in relation to a particular situation.

As a result of the study, we have identified the possibility of using modeling tools to analyze public opinion based on a survey, develop a meaningful interpretation for making management decisions. Carrying out such an analysis reveals the main evaluation criteria, which in the future allow for variability in the interpretation of the survey data, in particular, zones of conflict (social activity) are identified – zones with different levels of citizenship, allowing for differentiated strategies for interacting with society.

The results of the study can be used to implement state policy during global crises. In particular, the breakdown of regions into classes according to the level of conflict potential will make it possible to introduce corrective

measures to mitigate tensions in the region. Corrective measures in the regional policy based on the analysis of conflict potential can be aimed at building direct and clear channels of communication, increasing the frequency of explanatory speeches by authorized persons, akims of regions.

Using the Spearman coefficient, public policy receives a tool for identifying vulnerabilities in government bodies associated by the population with the failure of public policy, which makes it possible to timely adjust the mechanisms of interaction between government structures during emergency situations.

The validity of the results of Internet surveys can be ensured by comparison with the results of similar studies. This issue is related to digital management – the formation of a knowledge base for all studies, automatic search and comparison of results. The specific benefit of the knowledge base will depend on its content and algorithms for its processing.

The published results of polls contribute to the formation of an idea about the structure of the society in which we live, and inevitably change the positions and intentions of the majority. The results of the polls form a general idea of what problems are important for society, that is, the line of division of discussions. By publishing survey results in the mass media, it is possible to control the topics of public discussion – to highlight topics that are beneficial to the state, and obscure those that it prefers not to discuss.

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