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### ANALYSIS OF FOREIGN POLICY OF THE REPUBLIC OF KAZAKHSTAN IN FOREIGN ELECTRONIC MEDIA: APPLICATION EXPERIMENT OF MATHEMATICAL-STATISTICAL METHODS AND COMPUTER TECHNOLOGIES

The formulation of the problem of studying the foreign policy activity of the Republic of Kazakhstan on the basis of the materials of the leading English and Russian language press using content analysis, mathematical and statistical research methods and computer data processing technologies is extremely important for our country, as it actualizes the question of how Kazakhstan's reputation in the international arena coincides with the image created by PR-management of the country. An attempt to give a more objective answer, based on scientifically based research methods and data from reputable global media, is being undertaken in this paper.

**Key words:** Republic of Kazakhstan, foreign policy, electronic media, content analysis, mathematical and statistical methods, computer technologies, English-language press, Russian-language press.

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#### Электронды шетел БАҚ-нда Қазақстан Республикасының сыртқы саясатына талдау жасау: математикалық-статистикалық әдістер мен компьютерлік технологияны қолдану тәжірибесі

Жетекші ағылшын және орыс тілді баспасөздердің контент-талдау, математикалықстатистикалық зерттеу әдістері материалдары мен компьютерлік технологиялар бойынша біздің еліміз үшін төтенше маңызды деректерді өңдеуде, ҚР сыртқы саяси қызметі мәселелерін зерттеуде мынандай өзекті сауал қойылады: халықаралық аренадағы Қазақстанның беделі еліміздегі PR-менеджмент қалыптастырған имиджге қаншалықты сәйкес? Осы жұмыста әлемдік беделді БАҚ-тағы деректер мен ғылыми зерттеу әдістері негізіне сүйене отырып, неғұрлым ақиқат жауапты беруге талпыныс жасалды.

**Түйін сөздер:** Қазақстан Республикасы, сыртқы саясат, электронды БАҚ, контент-талдау, математикалық-статистикалық әдістер, компьютерлік технологиялар, ағылшын тілді баспасөз, орыс тілді баспасөз.

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## Анализ внешней политики Республики Казахстан в электронных зарубежных СМИ: опыт применения математико-статистических методов и компьютерных технологий

Постановка проблемы изучения внешнеполитической деятельности РК по материалам ведущей англо и русскоязычной прессы с применением контент-анализа, математикостатистических методов исследования и компьютерных технологий обработки данных чрезвычайно значима для нашей страны, так как актуализирует вопрос: насколько репутация Казахстана на международной арене совпадает с имиджем, создаваемым PR-менеджментом страны? Попытка дать более объективный ответ, опираясь на научно обоснованные методы исследования и данные авторитетных мировых СМИ, предпринимается в настоящей работе.

**Ключевые слова:** Республика Казахстан, внешняя политика, электронные СМИ, контентанализ, математико-статистические методы, компьютерные технологии, англоязычная пресса, русскоязычная пресса.

#### Introduction

In modern conditions, the world's information space has a tendency when the image (the opinion expressed) and the reputation (the opinion deserved) of the country and its political leadership may not in fact coincide with each other. In fact, these related concepts are not synonymous, since if the image is largely created by PR management, then the reputation as a kind of element of socio-political «portrait» is formed on an expert level, based on more reliable, plain characteristics, reinforcing or destroying gradually the foreign policy status of the state.

In this context, the role of an expert is fulfilled very often by the authoritative media (mass media), which plays the role of not only the information translator, but also its creator. Thus, CNN, BBC, Euronews, The NewYork Times and other leading publications «are not only instruments of influence on the leading countries of the world, but also have a significant impact on the world public opinion, national and world politics.» (Fokina, 2013: 1). At the same time such media is not limited by local or national space, but acts as an activist of modern international relations.

The mass media is one of the most important communication channels of interacting between the authorities and the society, an effective link for establishing international cooperation between states, the main tool for creating / destroying the image and reputation of a country whose opinion in the information society environment is difficult to ignore. As a result, foreign policy departments of countries have to draw up their policies, adjusting the social image presented in the global media.

In recent years, our state has stepped up foreign policy efforts aimed at more complete integrating the country into international political processes and promoting national interests. In this regard, it becomes important not only to respond promptly to international information about Kazakhstan, but also to interact with major world media, covering the entire world community's activities on-line.

The problem set in the article is relevant not only from the scientific, but also from the practical point of view. The application of interdisciplinary approaches gives the researcher opportunities to move towards less relativism, to establish greater evidence, depth and accuracy of the findings obtained by means of mathematics and computer science, increasing the objectivity of research results (Zhakisheva, 2011: 8). These provisions are directly connected with the scientifically based and correct choice of methods, techniques and technology research.

#### Modern methods for assessing the influence and citations of electronic media in global Internet

To assess the reputation of the Republic of Kazakhstan in the international arena, it is necessary to identify the most influential and cited English and Russian-language electronic media in the global Internet. We have used the most authoritative methods of ranking electronic printed publications in Russian and English: Title Popularity Ranking (TPR) and 4imn.com (Terin, 2000: 18-46).

Title Popularity Ranking is a professional methodology for ranking Russian print media that assesses the popularity of printed media on the part of readers, advertisers and journalists. The rating is made on the basis of open calculated data and is independent of the opinion of individual experts, that makes it the most attractive for all professionals working in the field of public relations

The rating takes into account such parameters as audience coverage (popularity indicator among readers), citing the publications in other media (popularity and importance of the publication in the professional community), citing the publications in social media (an indicator of popularity and significance among socially active sections of the public). This technique can be used for the media, both varying in terms of thematic significance and by their types.

Before starting the work on rating, the experts of the Agency select and verify an expanded pool of publications that claim to be included in to the rating. To calculate auditoria coverage (for printed media – the average audience of a single issue of the publication), the data of TNS Gallup and Comcon (or the publication itself) are used, which regularly conduct studies on the size and structure of readership media throughout Russia.

The citation of publications in traditional media is calculated on the basis of the ExLibris Agency media publication database, which includes more than 3,500 publications. Ranking of the citing publications in social media is prepared on the basis of the Yandex system, Blogs with more than 15,000,000 sources. The calculation of quotations does not take into account publications that contain self-citation (citation by publication of themselves), citing the publication in their own regional and thematic issues and applications, information on litigation caused by cited materials, citing or references of materials published before 1991. This makes the methodology of rating modeling the most reliable.

On the other hand, publications that cite thematic applications and issues of publications are taken into account, there are links to materials published on the websites of editions, publications written by a permanent journalist in editions under study or in other publications, if it is indicated thereupon in the publication, if there is information about the authors' professional awards and awards for materials published in the edition under study, if there are references to the use of photographs from the edition under study. Proceeding from such an account, getting into the rating of publications with plagiarism is reduced to zero.

Another rather authoritative method for ranking newspaper publications is the 4imn.com method, named after the eponymous website, which publishes a daily updated rating of cited newspaper publications. 4 International Media & Newspapers is an international reference book and a search system oriented to world newspapers. 4imn.com includes 7,000 newspapers, estimating popularity on the Internet in 200 countries.

Newspapers are sorted according to the exclusive web-rating 4imn.com. The current rating is based on an algorithm that includes four unbiased and independent web metrics extracted from three different search systems. These include: Google's page rankings, a rating from Alexa Traffic Rank, Majestic Seo counters and Majestic Seo Trust Flow.

These web metrics are collected every week to minimize temporal fluctuations and maximize comparability. The preliminary computer filter is used to detect a coincidence in the original data. Further research and review of data through the Alexa Traffic Rank is carried out for newspapers that accept subdomains as their official home page.

After filtering and viewing subdomains, Web metrics data are normalized to a scale of 0 to 100, taking into account the logarithmic nature, which expresses both the Google page rank and the Alexa traffic indicator. Four normalized values are analyzed based on a weighted average algorithm that generates the final result and a web rating (Nazarov, 1999: 83-97).

The main goal of this technique is to give an approximate rating of popularity in the world of newspapers, based on the popularity of their websites.

Thus, when compiling media ratings, research companies and agencies use different counting techniques. It is worth paying attention to some of the nuances of such calculations. Ideally, when viewing a published rating, a person should understand the basis for selecting specific evaluation criteria and prioritizing the sources from which information was obtained, etc., that is, the rating methodology should be described in details and accessibly defined. Based on these criteria, it can be stated that present day ratings based on the methods of Title Popularity Ranking and 4imn.com are the most reliable and consistent with these criteria.

We will try to characterize and substantiate the effectiveness of the use of electronic English and Russian-language media as the basis for investigating the reputation of the RK foreign policy in the global media community. According to the rating compiled using the 4imn.com ranking method, currently the most popular and quoted in the world are English-language newspaper publications. Their leadership is explained by the fact that English is the language of international communication and its linguogeography is extensive. It is native to about 335 million people, it is the third largest speaking language in the world after Chinese and Spanish, entire English speakers, including English as the second language – over 1.3 billion people. Proceeding from this, the leadership in the rating of the most quoted mass media is indisputable. Favorites in the ranking are such publications as The New York Times, Daily News, The Washington Post, Wall Street Journal.

The New York Times ranks first in the rating, as the average daily number of citations exceeds million times a day. NYTimes.com is the most popular electronic newspaper in the country, which not only carries a significant amount of content from news articles of a printed newspaper, but also has many functions created only for the online version. These include modern slide shows, diagrams and a huge amount of video content. NYTimes.com also has rubrics where readers can comment or participate in surveys. Many of the best authors of the printed version conduct their online blogs. Most online publications print the material only after its release in the printed version of the newspaper. The site NYTimes.com publishes more than one hundred news articles a day. The latest news is often reported by newspaper employees and, unlike most other Internet sites, uses unverified news sources, as an add-on, but not as the main source of content.

The second place by the citation is occupied by the newspaper The New York Daily News, whose average number of citations exceeds seven hundred thousand times a day. The main feature is the fact that the size of its web audience is more than twice as large as its print circulation. Of course, this is less than in other major newspapers, since most of the readers belong to the category of «blue-collar workers». Of course, this causes a decline in sales revenue from the printed version in relation to online sales, but this ratio gives serious reasons for thinking about switching assets from print to online version, as the multimedia and interactive features of the site are very modest.

The third line on citing among the Englishlanguage press belongs to the newspaper The Washington Post with an average citation of about 673 thousand times a day. The data from 4imn.com show that the income from the online version of the newspaper is relatively small and represents only a modest part of the total income. The Washingtonpost. com homepage is extremely simple. However, a peculiar feature of the online version is the forum. It hosts web discussions, which are one of the best interactive features: you can discuss and learn the latest news 24 hours a day. Most of the websites are devoted to political enlightenment, that we expect issuing from the general direction of the publication. Another distinctive feature is the use of widgets in order to receive fresh articles from other sites and blogs.

The Wall Street Journal ranks fourth in the rating of citations with a half-million citation per a day. WSJ.com is a part of the largest newspaper in New York. This site is considered to be the highest paid online news resource on the Web, spreading messages to more than 980 thousand subscribers. The site has an extensive news section. Selected articles on the site are reviewed by the best journalists from the newspaper. Unlike many news sites on the Internet, The Wall Street Journal perfectly copes with the presentation of significant news, rather than presenting ordinary topics to readers.

Among the Russian-language newspapers, the leading places in the rating are taken by Izvestiya, Rossiyskaya Gazeta, Kommersant. Of course, the linguogeography of the Russian language is not as extensive as of English, however, despite this, Russian-language publications are included into a hundred citing ratings.

The first position in the rating is occupied by Kommersant with an average number of citations exceeding three hundred thousand times a day. The online version of the newspaper Kommersant is called kommersant.ru, which makes the website address easily memorable. The next most-cited Russian-language publication is the Rossiyskaya Gazeta. Its average number of citations varies within two hundred fifty times a day. On the site RG.ru local news are on the top, and the navigation on the site is easy to find and read. The third most cited publication is the newspaper Izvestia, covering the average daily number of citations within one hundred and fifty thousand times a day. This site, known as izvestia.ru, is one of the best online newspapers in Russia. The online edition has carefully deliberated content using interactive slides, videos, polls, special reports and blogs. RSS-channels are categorized, so readers do not need to get all the headlines or even all the headlines from one section.

An important advantage of any online newspaper is that all the issues of the newspaper can be collected on one site at once or all available information are not divided into issues, but distributed according to the topic (Zasursky and others, 2003). This fact gives a big advantage over printed publications, because in order to find the necessary information in a paper newspaper, it is necessary to review carefully a whole pile of publications, and sometimes even refer to the archive, which is a rather time-consuming and time-taking occupation, which cannot be said about searching for information on the Internet-papers.

#### Content analysis and mathematical and statistical analysis of the foreign policy of the Republic of Kazakhstan in foreign electronic media on the basis of problem-oriented database

Analysis of the foreign policy of the Republic of Kazakhstan via foreign electronic media in problem-oriented database (DOB) involves two stages: precomputer and computer data processing (Figure 1). Functional attributes of the structure imply the necessity for frequency and classification transformations of newspaper articles that contain voluminous textual amount into a mass source (a method known as content analysis) (Slavko, 1981).

1. The stage of pre-machine processing.

selection of the search systems of newspaper articles and
subsequent analytical and synthetic processing;
definition of the informational structure of newspaper
articles, the degree of their completeness and reliability;
definition of the volume of selective combination and
finding ways of observing selective units;
compilation of a unified questionnaire;
measurement of signs;
filling in questionnaires related to each newspaper article
in a sample set and signs coding.
2. Machine processing stage.

2. Muenine processing suge.					
choice of software;					
input of unified questionnaire by data on the materials of					
the sample set into the computer and its placement;					
installation of mathematical-statistical material					
processing and calculation of a selective error;					
evidence of sample representativeness.					

Figure 1 – The structural scheme study of electronic English and Russian newspaper articles

In modern times, the difficulty of translating a text source into an electronic form is not such a problem as it was a couple of decades ago. This is due to the fact that there are more and more sources that do not require translation into an electronic format, as they were created in this form initially. Besides, quite a large number of non-electronic sources are translated or translated into a machine-readable form and with the development of laser reading of information, the translation of a document into an electronic form is not a problem.

This innovation has not passed by the sphere of mass media. At present, there are many electronic libraries, where digitized newspapers are kept; magazines are freely available to visitors from all over the world. Moreover, most major mass media are not limited to publishing only printed editions of their newspapers and magazines, but also produce versions for various electronic media, but at the same time duplicate produced information they publish on their websites.

However, in order to conduct a frequency content analysis of electronic media, a sufficiently powerful search system is necessary, which would have taken into account all the required inquiries of the researcher.

According to Netmarketshare company statistics, which is engaged by counting users' inquiries, searching Internet systems (Search Engines), used in the world for searching information from newspapers, have the rating for May 2017 presented in Figure 2.

We have drawn our choice on the search engine newspaper.com, as it covers about 80% of the world's requests for information in the newspapers. This is newspaper database (DB) with a built-in unique search engine in the branch of companies associated with Ancestry.com. Their database includes more than 200 million pages with more than 5 thousand of the most authoritative newspapers in the US and other English-speaking countries.

Newspaper.com meets three important requirements for modern search engines: uniqueness of data, design, and compliance of requests. The content of the site is unique, as there is no any analogue of the search system today containing such a number of electronic versions of newspaper publications. On Newspapers.com it's easy and convenient to search or look through articles. Highquality digital images and a powerful navigating tool for studying historical documents make it easy to print, to save and to share discovered information.

The priority task of the site's developers was to extract accurate and representative data to create an accurate electronic copy of the newspaper. This electronic version includes not only the original text of the article, but also an additional content in the form of images, tables, graphs. The main advantage of this site over others is the provision of a file not in the form of a static image, but in the form of an electronic file with its own layout structure, which allows to preserve the original design of the article without losing its integrity. A distinctive feature of the site is its unique search engine, which is placed on a separate web service and performs such functions as analysis of digitized articles and recording the results of analysis on a separate server page, searching for information on the user's request, providing a convenient interface for searching information and the search results survey by the user.

The scheme of searching the necessary information using this search engine is simple. A user types a key phrase and activates the search. After that, he gets a selection of articles on his formulated request. This list of articles is ranked by the system so that at the top of the list are those articles that most closely match the user's request. It's worth noting that each link in the list of search results contains a snippet – several lines from the found article, among which there are keywords. Before clicking a link, the user can evaluate the compliance of the snippet with the query topic. For the user it is of great importance which documents will be in the first two or three dozen documents based on the search results and how these documents correspond to the user's expectations. The website newspaper.com offers two ways to search - simple and advanced search using a special query form and without using it.

A simple query gives an extensive amount of articles, as the list of results includes articles containing one of the words entered at the request, or a simple phrase. A simple search does not limit the user in the wording of the query, but the search results provide a lot of unnecessary information, because by default the search engine applies all available search conditions.

Advanced search uses more stringent search criteria. This type of search implies also the inclusion of «search operators» in queries. The application of query refinement operators and advanced search techniques allows you to increase the efficiency of your work and quickly find the necessary information. Using the «and / or» symbols operators, the user can associate the query words in the required sequence to get the most appropriate result for the query. The «and» operator allows you to specify that all keywords should be included in the content of the document. Nevertheless, the number of documents can still be large, and viewing them will take much time. Therefore, in some cases it is much more convenient to use the context operator «near», indicating that words should be located in the document in sufficient proximity. Using «near» significantly reduces the number of found documents. The presence of the symbol «\*» in the query string means that the word will be searched by its graphic (visual image).



Figure 2 - Search Engine Rankings, compiled by netmarketshare.com

Special attention should be paid to the tools and search categories provided on the site as a separate menu. «Intelligent» newspaper.com tools have been specifically designed to adapt to the requirements of users for searching articles. The «publication date» tool allows you to limit the search results by the date of their publication in the newspaper. The «exact match» function searches for exact words or phrases. The «personal results» tool displays search results articles related to the name inserted into the search. There is also the possibility to issue only those articles that are published in newspapers by the country chosen by the user.

This state of affairs allows you to save time by avoiding the transfer of large non-electronic text arrays to the digital form and manually highlighting the required features, as the ready-made information is already maintained on the newspaper.com website. This, in its turn, allows us to begin assessing the number of electronic media with the information in Kazakhstan.

The classification stage of content analysis allows us to identify a certain system of peculiarities that characterize the properties of the research object. On the basis of this stage, a pattern was developed for processing the source, which has the form of a table. A serious problem of this stage of the research was the distinguishing and measurement of the main requests, since each newspaper article in various print media does not have a well-organized structure. Clarification of a set of queries consists of two main steps.

We have identified seven most quoted English and Russian-language news portals – The New York Times, The Wall Street Journal, The Washington Post, Daily News, Izvestia, Rossiyskaya gazeta, Kommersant. It was done according to the newspapers where the «filter by publication» tool was used.

The next step is to analyze the selected resources: topics, key phrases and groups of topics for search are highlighted through the system of newspapers. com. A topic denotes a certain sub-area of the subject field under consideration, for example, «Kazakhstan and the CIS». The topic is associated with a set of key phrases that characterize its various aspects. For example, the key word combinations for the topic «Kazakhstan and the CIS» are: «Kazakhstan-«Kazakhstan-Ukraine», «Kazakhstan-Russia». Kyrgyzstan», etc. Note that the same keyword combination can enter into several topics. It is convenient to group together topics closely related to the main meaning. For example, the themes «Kazakhstan - UN», «Kazakhstan - OSCE» and «Kazakhstan – SCO» are expedient to unite into the group «Kazakhstan and international organizations». However, splitting topics into groups is not an ideal solution of the classification problem in our case. It turns out that many of the topics can be attributed to several groups. For example, the topic «Kazakhstan and the OSCE» should be included in the group «Kazakhstan and international organizations», as the OSCE is an international organization. But it is also advisable to include this topic in the group «Kazakhstan and international issues», since the main task of the OSCE is to counteract such an international problem as terrorism. In this and other similar cases, we include the topic in all groups, where it fits in the meaning. At the same time, the group where the topic appears first, we describe it in details, asking for all key phrases that occur in the articles under consideration. And in the second and subsequent occurrences, we include this topic as a reference to the above given description. The group can also include phrases directly, without any topical distinctions. The selection and grouping of certain word combinations into separate topics occur in accordance with the focus of the study. Each group is directly connected with the object of research – the foreign policy of the Republic of Kazakhstan. The use of grouping of requests is conditioned by the need to receive articles directly related to the Republic of Kazakhstan and the screening of articles, where it is mentioned only in a general context. Based on the analysis of these resources, a query table was constructed, the fragment of which is presented in Table 1.

After compiling the table, requests were inserted into the newspaper.com search engine, applying the filter for the selected publications and the filter for the publication time. The results of the analysis of Internet resources were grouped for a more convenient presentation in a separate Table 2.

By the general request of «Kazakhstan» on the site newspaper.com website, 28024 newspaper articles were found among seven selected newspapers. The largest number of articles with the mention of Kazakhstan was found in the newspapers of the publishing house Kommersant – 9370, the least number of articles was published by Daily News – 551 articles, which is understandable, since electronic versions of articles started only from 2000. Applying the filter for publication time, the period of the chronological framework of the research was chosen – from 2000 to 2017. The total number of articles in this period constituted 22,798 articles, where most of the articles appeared under Kommersant edition.

Group of topics	General topic queries	Inquiries
Kazakhstan and international organizations	Kazakhstan and UNO	«Kazakhstan – UNO» «Kazakhstan – Assembly of the UN» «Astana – New-York» «Kazakhstan – member state of the UN» «Kazakhstan – under the auspices of the UN»
	Kazakhstan and OSCE	«Kazakhstan – OSCE» «Kazakhstan – the chairman» «Kazakhstan – summit» «Astana – Helsinki»
	Kazakhstan and SCO	«Kazakhstan – SCO» «Kazakhstan – chairman» «Astana – Shanghai» «Kazakhstan – Shanghai five»
Kazakhstan and peacemaking activity	Kazakhstan and Syrian problem	«Kazakhstan – negotiation» «Kazakhstan – Syria» «Kazakhstan – peaceful negotiations»
	Kazakhstan and humanitarian support	«Kazakhstan – humanitarian support» «Kazakhstan – cargo» «Kazakhstan – provided assistance»
	Kazakhstan military peacemaking act	«Kazakhstan – doctrines» «Kazakhstan – Kazbat» «Kazakhstan – military operation»

Table 1 – Grouping of queries «Fore	ign policy of the RK» in a search system
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Table 2 - Results of the search for Internet resources on request «Foreign Policy of the Republic of Kazakhstan»

Newspaper	Total number «Kazakhstan»	«Kazakhstan» For 2000 – 2017 y.	«Kazakhstan» in the section «Politics» For 2000-2017 y.
Izvestiya	3113	2112	585
Russian Newspaper	8902	6896	665
Kommersant	9370	7839	260
NY Times	4325	2608	390
Wall Street Journal	2314	1178	309
The Washington Post	(from 2005 y.)	1614	543
Daily News	(from 2000 y.)	551	245
Total	28024	22798	2997

After searching all the queries divided into groups, 7894 articles were found during 2000-2017, in which the foreign policy activity of the Republic of Kazakhstan was touched on. After screening out duplicate articles on different groups of requests, the number of unique articles constituted 2997 articles.

Proceeding from this, 2997 articles received during the evaluation of the number of electronic mass media are the basis for creating a problem-oriented database «Kazakhstan's Foreign Policy at the Present Stage Based on the Materials of the English- and Russian-Language media».

# Formation of a problem-oriented database (PODB)

Classification stage of pre-computer data processing made it possible to single out a certain system of signals characterizing the properties of the object of investigation. On the basis of this stage, a model for processing the source was developed, having the form of a unified questionnaire (Table 3).

After the stage of selecting features, the values of each of them were graduated and coded, i.e. appropriation of the corresponding quantitative equivalent to the units of the attribute were formed into a conditional numeric designation.

The next stage included the computer processing of a set of questionnaires employing mathematical and statistical methods for a given program to identify intra-systemic links and to conduct substantial analysis of the research problem. Preliminary logical analysis and classification stage of content analysis in accordance with the chosen structural model of the database made it possible to formulate a unified questionnaire from the materials of newspaper articles with more than 10 structure-forming features and with more than 40 gradations.

	Index	Gradation	Code
1	Language of writing a newspaper article	Russian English	1 2
2	Country of writing a newspaper article	Russia The USA Great Britain	1 2 3
3	Date of issue of newspaper article	2000  2016 2017	1  16 17
4	The period of foreign policy at the time of publication of a newspaper article	2000-2008 2009-2014 2015-2017	1 2 3
5	Evaluation of the international activities of the RK newspaper article	Mono-semantic positive Mono-semantic negative Mixed	1 2 3
6	Sphere of cooperation	Energy Economics Education Culture Military Affair Global problems Politics	1 2 3 4 5 6 7
7	Geography of cooperation	Regional International	1 2
8	Region of integration process	Asia Eurasia Europe APR America Peace	1 2 3 4 5 6
9	Form of participation in the international process	Participation Chairmanship Observation Mediation	1 2 3 4
10	Type of peacekeeping activity	Initiator of negotiations Humanitarian support Peacekeeping missions	1 2 3

Table 3 – Unified Questionnaire

Determinative features were formed according to the following scheme: linguistic, geographical, stylistic, and political. Separately, a set of features was identified, related specifically to analytical articles. This differentiation of indicators makes it possible to analyze two points of view on the foreign policy pursued by the state: as an informational point of view that represents directly official information, and an analytical point of view that presents information from analysts. For more reliable extraction of information from newspaper articles, it was also necessary to take into account all the identified invariant components common to all or most of the source varieties, and moreover the features in the unified questionnaire were formulated in such a way that, in subsequent substantial analysis, there was no need to further separate them into smaller constituents (Slavko, 1981; Zhakisheva, 2011).

As an example, disclosing the procedure of content analysis, we cite an article by A. Vasiliev from the Rossiyskaya Gazeta. Federal issue No. 5661 of December 19, 2011) (Figure 3).

Proceeding from this newspaper article, ten features were singled out, expressed in a direct form: 1) the language of writing; 2) country of writing; 3) date of issue; 4) genre; 5) style; 6) sphere of cooperation; 7) geography of cooperation; 8) region of the integration process; 9) the form of participation in an international organization; 10) a kind of peacekeeping activity

On the basis of articles in the analytical genre, the number of features of the unified questionnaire has increased. Such characteristics as «wise international policy» and «reasonable costs» have allowed inserting into the questionnaire such a feature as «the nature of the newspaper article». At the same time, personal signs «name and surname of the author of the article», «article number», and «newspaper title» were introduced for identification of the search work in the database or as an illustration. Thus, in the unified questionnaire, 12 different signs were recorded, characterizing both the stylistic features and the estimated nature of the article.

The next stage of work at newspaper articles was the measurement of signs. It was necessary to give an accurate graduation for each of the selected features through a careful preliminary study of the contents of the articles.

To measure the signs, generally accepted methods of scaling the analysis of sociological information were used: a) the scale of titles (nominal) and b) the order (ranking). In this case, it was necessary to take into account that each of these scales corresponds to the operations: a) establishing equality and b) establishing relations (more – less), and using 3 methods of grading the signs: natural (for example, the language of the article); in the form of intervals (for example, the release date of the article); frequency of occurrence of responses to signs (for example, titles of international organizations) (Slavko, 1981).

In the designation scale, first the values were regulated by the content based on the natural ratio on meaningsof the quantitative and qualitative characteristics or, based on the degree of significance of the units. Then distinguished indicators were assigned a numerical equivalent in the form of a sequential variant. For example, the sign «the language of writing a newspaper article» had two natural gradations - «Russian language» and «English». The principle of measurement in the ordinal scale, called the ranking, was implemented in a much more complicated, was especially for attributive characters. For example, the signs «sphere of cooperation» and «region of the integration process» revealed in the informational articles, while grading, the principle of frequency occurrence was applied. The sign «country of writing a newspaper article» was naturally divided into countries where publishers are based - the USA, Russia, and Great Britain.



Figure 3 – Article from the «Rossiyskaya Gazeta»

Most of the features contained in the questionnaire and reflecting, for example, the form of participation in an international organization, type of activity, etc., were qualitative, i.e. not having a quantitative measure or a numerical equivalent, and required a clear definition of possible answers, based on the frequency of their occurrence. For example, the sign «form of participation in an international organization» presupposed gradations: «membership», «chairmanship», «observer», «intermediary», and the sign «geography of cooperation» was divided into gradations: «regional» and «international».

The notice «the nature of the newspaper article» remained open without acquiring rigid gradations, which was due to the qualitative variety of source information. In this case, the column «mixed» was supplied. The introduction of this graduation is explained by the fact that some analytical articles often do not have a clear affiliation to a monosemantic positive or unambiguously negative character. Therefore, articles not belonging to any of the two grades were included into the gradation «mixed».

Interval grading assumed the solution of the problem of determining the optimal value of the interval, i.e. its value, where the specificity of the phenomenon was viewed. For example, the sign «date of publication of a newspaper article» was naturally divided into gradations corresponding to the date of printing a newspaper article. As a result of the analysis of a selected group of newspaper articles, it was revealed that the most optimal was the interval equal to one calendar year, with variations in the values from a period of month to a quarter of being printed. Thus, the interval of gradation was equal to each year in the chronological framework of our study.

Another sign that demanded an interval graduation was the «period of foreign policy at the time of publication of the newspaper article», but this feature was divided into gradations proceeding from chronological analysis of foreign policy at the precomputer stage. Three grades were singled out for this feature: «2000-2008» - temporary frame for the development, adoption and operation of the Foreign Policy Concept of the Republic of Kazakhstan, approved by the Security Council of the Republic of Kazakhstan; «2008-2014» – temporary frame for the development of a new Concept of Kazakhstan's foreign policy; «2014-2017» - the time frame for the adoption and operation of the Foreign Policy Concept of the Republic of Kazakhstan for 2014-2020.

Thus, 12 main features were included into the unified questionnaire, which had a very high informational value for solving research problems.

The next stage of pre-computer processing was data encoding, i.e. assigning each indicator a

corresponding numerical value. The encoding and recording in the PODB were performed according to the principle of «free recording», i.e. while the new gradations were introduced into the computer, they were assigned the following digital code. For example, the sign «the language of writing a newspaper article» was assigned indexes 1 and 2, and the signs «country of writing a newspaper article» – from 1 to 3 (respectively, Russia, the United States and Great Britain).

After the unified questionnaire was prepared and the characteristics were measured, it was necessary to transfer the information from each newspaper article to the transformed questionnaire according to the selected gradation of the characteristics, and then insert the information into the computer's memory. As a result, a set of documents homogeneous in content and informativeness was developed, representing a synthesized new (secondary) mass source, the basis for the formation of database.

The most important attributes of pre-computer processing of materials from the English and Russian-speaking press were, according to the logic of the sourcing study, the assessment of the reliability and representativeness of these sources. For this purpose, a comparative-contrastive analysis of documents indexes was applied with data from other sources and a selective method of survey (representative method). As is known, the problem-oriented database, in addition to the «archiving» functions, has the capabilities for a research analysis of the information stored in it. This eliminates the necessity to analyze data on all collected newspaper articles. Using the methods of mathematical processing, the practice of a partial survey of combinatory units, known in statistics as a sampling method, was applied. The arrangement of the sample survey was subordinated to the idea of obtaining such a result of selecting units of observation that would represent general aggregation. In addition, the implementation of the sampling method has resulted in saving time and labor to process a great amount of information. As a result of necessary calculations, the sample set, organized according to the 10% random mechanical selection method, constituted 300 units. This means that the results obtained in the study of the sample of 300 units, in 99 cases out of 100, will presuppose an error of 5 and only in 1 case the error will be greater than 5. Thanks to such a high degree of reliability of data and results, the conclusions drawn up from the sample can be transferred to a total number of 3,000 units out of the 7 most cited newspapers in the world.

The most difficult stage of the proof representativeness was the identification of the quantity of errors in the results with respect to the studied general aggregation. It should be noted that the value of the sample error for a number of characteristics did not exceed 5. Data exceeding the permissible error limit was not allowed to the study.

The data of the received unified questionnaire were inserted in the PODB, formed on the basis of standard relational database management system Microsoft Access 2013 (the formation of the PODB was done by T.E. Ramazanov).

This choice of software is due to the fact that the Microsoft Access interface is intuitive by clear even to a person who is far from programming. Mobility simplicity is also in favor of Access. Databases created in the program do not have a lot of weight, and are collected into one file, which eliminates the destruction of the integrity of the structure.

As a result of working with the DBMS, the table forms were developed shown in Figure 4.

		Страна написа	ния 💷 Фо	рма участия в междунаро,				2
Зсе объекты А 🖻	«	Имя пол	_	рма участия в междунаро, Тип данных	дной органі		(необязательно)	
ouck	o 🖕	• Градация	124	Счетчик		Описание	(необязательно)	
Габлицы 🖈 🗍	- <b>-</b>	Форма участия в м						
Вид миротворческой де		Форма участия в к	леждународ	короткии текст				
Газетные статьи								
🔲 География сотрудничест								
🔲 Дата выпуска газетной с								
Название газеты				Свойства	0.049			
	- III r							
		Общие Подстани						
		Размер поля	Длинное це					
Регион интеграционног		Размер поля Новые значения						
Регион интеграционног Страна написания		Размер поля	Длинное це					
Регион интеграционног Страна написания Сфера сотрудничества		Размер поля Новые значения Формат поля Подпись Индексированное пол	Длинное цо Последоват е Да (Совпад	ельные				
Регион интеграционног Страна написания Сфера сотрудничества		Размер поля Новые значения Формат поля Подпись	Длинное це Последоват	ельные		знаков (вклю	ожет содержать не более 64 чая пробелы). Для получени	
<ul> <li>Регион интеграционног</li> <li>Страна написания</li> <li>Сфера сотрудничества</li> <li>Форма участия в междун</li> </ul>		Размер поля Новые значения Формат поля Подпись Индексированное пол	Длинное цо Последоват е Да (Совпад	ельные		знаков (вклю	чая пробелы). Для получени менам полей нажмите клави	
Регион интеграционног Страна написания Сфера сотрудничества Форма участия в междун Характер газетной статьи		Размер поля Новые значения Формат поля Подпись Индексированное пол	Длинное цо Последоват е Да (Совпад	ельные		знаков (вклю	чая пробелы). Для получени	
Регион интеграционног Страна написания Сфера сотрудничества Форма участия в междун Характер газетной статьи Язык написания газетно		Размер поля Новые значения Формат поля Подпись Индексированное пол	Длинное цо Последоват е Да (Совпад	ельные		знаков (вклю	чая пробелы). Для получени менам полей нажмите клави	
Регион интеграционног Страна написания Сфера сотрудничества Форма участия в междун Характер газетной статьи Язык написания газетно апросы \$		Размер поля Новые значения Формат поля Подпись Индексированное пол	Длинное цо Последоват е Да (Совпад	ельные		знаков (вклю	чая пробелы). Для получени менам полей нажмите клави	
<ul> <li>Регион интеграционног</li> <li>Страна написания</li> <li>Сфера сотрудничества</li> <li>Форма участия в междун</li> <li>Характер газетной статьи</li> <li>Язык написания газетно</li> </ul>		Размер поля Новые значения Формат поля Подпись Индексированное пол	Длинное цо Последоват е Да (Совпад	ельные		знаков (вклю	чая пробелы). Для получени менам полей нажмите клави	

Figure 4 – Basic tables in Design regime

When starting the PODB, the Main button form opens (Figure 5), from which the user starts various parts of the application using command buttons. The advantage of command buttons is obvious – they allow you to run macros easily and VBA procedures (Visual Basic for Applications) opening other forms, execute queries, print reports.

The menu button «Open Database» allows you to open a full database of newspaper articles for viewing or editing. The button «Add an article to the database» provides an opportunity for the researcher to add a new article to the database, and a simplified interface with drop-down features (Figure 5) allows even an unprepared person to insert relevant newspaper material. First, you should choose the title of the newspaper, and then a blank opens to fill in the results of the questionnaire. This blank contains forms with drop-down choices. Selection the answer option is realized by clicking a mouse on the desired row of the drop-down list. It should be noted that the numeric code corresponding to the text version of the answer is automatically registered into the database.

If necessary, you can edit and view the inserted data, indicating the number of introduced article (ID) in the editing window (Figure 7), appearing when you click on the «Edit Database» out of the main button form.

The form «Print Database» (Figure 8) allows you to print a database of newspaper articles entirely or selectively. To select a more flexible print range, there are filters provided by features. With the help of the filter, the researcher can sort and arrange the articles, which will bring out printing in the specified order. Before printing, the table can be formatted: change the print, style, width of columns and line height. Activating the «Analysis by Features» form enables you to analyze the database of articles using various Access DBMS queries. When creating summary queries with calculated values for data groups, Access provides various functions that simplify the execution of group calculations.

Access supports a special type of summary query, called a cross-type query. It allows you to display the calculated values into a cross table. To present the information received from the database, the best suited component of Microsoft Access as reports. Reports provide extensive opportunities for composing and calculating common totals and they can be used as a visual material for presentations and reports.

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АЙЛ	ГЛАВНАЯ	СОЗДАНИЕ	ВНЕШНИЕ ДАННЫЕ	РАБОТА С БАЗАМИ ДАННЫХ	КОНСТРУКТОР	упорядочить -
III 1	азетные статы	Меню				×
•	I		териалам анг	кстана на современ ло- и русскоязычны анализ проблемы		
			0.05	Открыть БД авить статью в БД		
			-	ировать статью в БД		
				Печать БД		
			Анал	из по признакам		
				Выйти из БД		

Figure 5 – Main button shape

	Добавление статьи		
		Добавление газетной статьи	
▶			
	ID	(N0)	
	Название газеты	•	
	Заголовок статьи	Российская газета	
	Salohobok charby	Известия Коммерсант	
	Ссылка на статью	NYTimes	
		Wall StreetJournal The Washington Post	
	Автор статьи	Daily News	
	Страна написания газетной статьи	▼.	
	Дата выпуска газетной статьи		
	Период внешней политики на момент публикации газетной статьи		
	Характер газетной статьи		
	Сфера сотрудничества	•	
	География сотрудничества	•	
	Регион интеграционного процесса		
	Роль в процессе международных отношений	Y	
	Вид миротворческой деятельности		

Figure 6 – Form for adding new articles to the database

	Газетная статья	
ID	1	
Название газеты	Известия	-
Заголовок статьи	Казахстан может возглавить ОБСЕ	
Ссылка на статью	http://izvestia.ru/news/384994	
Автор статьи	izvestia.ru	
Страна написания газетной статьи	Россия	-
Дата выпуска газетной статьи	2006	•
Период внешней политики на момент публикации газетной статьи	2000-2008	-
Характер газетной статьи	Однозначно положительный	-
Сфера сотрудничества	Культура	•
География сотрудничества	Межрегиональное	•
Регион интеграционного процесса	Азия	•
Роль в процессе международных отношений	Председательство	•
Вид миротворческой деятельности	Инициатор переговоров	-

Figure 7 – Form for editing a newspaper article

#### Analysis of foreign policy of the Republic of Kazakhstan in foreign electronic media: application experiment ...

D • Название газеты •	Заголовок статьи 👻	Ссылка на статью 🔻	CTROUT	Пото	Период г •	Характер газетной статьи 👻	Сфера сотрудниче 👻
34 Известия		http://izvestia.ru/news/			2009-2014		Мировые проблемь
						Однозначно положительный	
35 Известия	1.11	http://izvestia.ru/news/			2000-2008	Однозначно положительный	Политика
36 Известия	В Казахстане закрыли	http://izvestia.ru/news/	Россия	2011	2009-2014	Однозначно отрицательный	Культура
37 Российская газета	Студенты государства	https://rg.ru/2012/10/19,	Россия	2012	2009-2014	Однозначно положительный	Образование
38 Российская газета	Дорога без границ	https://rg.ru/2016/10/04	Россия	2016	2015-2017	Однозначно положительный	Экономика
39 Российская газета	Обновление политич	https://rg.ru/2013/05/08	Россия	2013	2009-2014	Смешанный	Политика
40 Коммерсант	Казахстан стал госуда	https://www.kommersar	Россия	2002	2000-2008	Однозначно положительный	Экономика
41 Коммерсант	Россия и Казахстан до	https://www.kommersar	Россия	2017	2015-2017	Однозначно положительный	Экономика
42 Коммерсант	Парламент Казахстан	https://www.kommersar	Россия	2015	2015-2017	Однозначно положительный	Экономика
43 Коммерсант	В Казахстане создана	https://www.kommersar	Россия	2009	2009-2014	Однозначно положительный	Военное дело
44 NY Times	Kazakhstan Moves to 1	https://bits.blogs.nytime	США	2015	2015-2017	Однозначно отрицательный	Культура
45 NY Times	Kazakhstan Seeks to B	http://www.nytimes.com	США	2008	2000-2008	Однозначно положительный	Мировые проблемы
46 NY Times	Kazakhstan: Leader of	http://www.nytimes.com	США	2012	2009-2014	Однозначно отрицательный	Мировые проблемы
47 NY Times	Kazakhstan: President	http://www.nytimes.com	США	2007	2000-2008	Однозначно отрицательный	Политика
48 NY Times	Cheney, Visiting Kazal	http://www.nytimes.com	США	2006	2000-2008	Однозначно положительный	Энергетика
49 NY Times	Big Oil Will Be a Big Te	http://www.nytimes.com	США	2010	2009-2014	Смешанный	Энергетика
50 NY Times	Kazakhstan: Passage f	http://www.nytimes.com	США	2009	2009-2014	Однозначно положительный	Военное дело
51 Известия	Казахстан может возг	http://izvestia.ru/news/	Россия	2006	2000-2008	Однозначно положительный	Культура
52 Известия	Наблюдатели от СНГ	http://izvestia.ru/news/	Россия	2012	2009-2014	Смешанный	Экономика
53 Известия	Выбор Астаны	http://izvestia.ru/news/	США	2016	2015-2017	Однозначно положительный	Мировые проблемы
54 Известия	ОБСЕ и глобальная бе	http://izvestia.ru/news/	Россия	2010	2009-2014	Однозначно положительный	Мировые проблемь
55 Известия	В Астане пройдет Юб	http://izvestia.ru/news/	Россия	2011	2009-2014	Однозначно положительный	Мировые проблемь

Figure 8 – Printing the table «Newspaper articles»

Thus, the creation of the PODB «Foreign policy of Kazakhstan at the present stage based on the materials of the English and Russian-language media» makes it possible to realize not only search-information and archival functions, but also conduct a serious analytical study. The application of mathematical and statistical data processing and analysis of information embedded in a computer database provide wide opportunities for obtaining a fairly objective and reliable assessment of the foreign policy activity of the Republic of Kazakhstan for the period from 2000 to 2017.

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