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Evaluation of the DMDK GIS implementation results based on interviewing participants in the circulation of precious metals, precious stones and products made from them

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Abstract

The authors conducted a comparative analysis of the opinions of the target group of respondents to assess the results of implementing the state integrated information system of precious stones, precious metals. The results of the analysis are summarised, conclusions are formulated, proposals are developed that take into account the interests of both business and consumers, and in general, contribute to the implementation of an effective state budget policy.

Keywords: interviewing, questioning, precious stones, precious metals, information system.

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采用贵金属和宝石国家综合信息系统的结果评估， 基于对贵金属、宝石及其制品流通参与者的采访

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摘要

作者对目标受访者群体的意见进行了比较分析，以评估采用贵金属、宝石及其制品国家综合信息系统的采用效果。总结了分析结果，制定了结论，提出了兼顾企业和消费者利益的建议，并有助于实施有效的国家预算政策。

关键词：采访，调查，贵金属，宝石，国家综合信息系统。

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该文章在俄联邦财政部金融研究所进行政府任务的科研中编写的。

The creation of a unified information platform for the interaction of participants in the market of precious metals and precious stones is an urgent need for digital reality. Despite the adopted and current legislative acts regulating the sphere of circulation of precious stones and metals, it is possible to ensure the efficiency and thoroughness of their implementation only with the introduction of a full electronic document management. Moreover, such a turnover is intended not only to translate reporting into digital form; its task is to ensure full control at all stages of the circulation of precious stones and metals from the moment they are mined to the moment they are scrapped.

The unified state integrated information system for precious metals and precious stones (hereinafter referred to as GIIS DMDC), which began its work on March 1, 2022, along with refining, trading and other organisations of the business community, provides for the work of state control and supervision bodies, as well as other interested federal executive authorities¹. An important factor in the introduction of the GIIS DMDC system is the protection of the rights of consumers of jewelry: the introduction of digital marking technology makes it possible to verify the authenticity of jewelry on the site. Thus, buyers of jewelry products have the opportunity to become participants, users of the system.

In general, the purpose of introducing an integrated system is to create an effective tool for ensuring the traceability of precious raw materials and goods, preventing the legalisation of counterfeit and fakes, and hiding income for tax purposes.

The functionality of GIIS DMDC is constantly expanding and being adapted by developers to the interests and needs of all interested participants. To understand the requests of participants in the circulation of precious metals, precious stones and products from them, the FRI of the Ministry of Finance of the Russian Federation conducted interviews and questionnaires, which are the most common methods of social research. In a generalised form, they can be defined

as methods for collecting primary sociological information based on direct, in the form of an interview, or indirect, in the form of a questionnaire, socio-psychological interaction between the researcher and the respondent. The answers to the questions offered to the respondent provide the necessary information [Frolov, 2008].

The form of closed questions was chosen for the questionnaire. According to the methodology, such a survey has a number of types, from which a dichotomy was chosen – a variant containing only two answers: “yes” or “no” [Tatarova, 2002]. The generalised data of the questionnaire made it possible to reasonably approach the interview, clarifying why the majority of respondents gave one or another answer. This form of research was chosen consciously, as it most objectively reflects the process of introducing the GIIS DMDC system from different positions: mining, refining, production, trade, pawnshops, acceptance of scrap containing precious metals, control and regulation of the turnover process. When interviewing, as well as when questioning, the principle of confidentiality is respected, which increases the degree of its reliability.

As of July 1, 2022, 22,398 participants were registered on the GIIS DMDC platform. Of these, a surveyed sample of participants was formed: 311 respondents in 42 regions of the Russian Federation. The sample of groups is proportional to the lines of business in the area under study and, accordingly, is representative.

As of July 1, 2022, 22,398 participants were registered on the GIIS DMDC platform. Of these, a surveyed sample of participants was formed: 311 respondents in 42 regions of the Russian Federation. The sample of groups is proportional to the lines of business in the area under study and, accordingly, is representative.

Thus, 1.3% of the total number of DMDC registered on the GIIS platform was surveyed. This percentage ratio approximately ($\pm 0.8-3\%$) is maintained in the sample of survey respondents by type of activity. The largest group

¹ Official website of GIIS DMDC: <https://dmdk.ru/about/>.

consisted of retail trade organisations, the smallest – enterprises engaged in the extraction of precious stones and metals (Table 1).

Table 1

Distribution of survey participants by type of activity

Type of activity	Number of respondents	Percent of respondents (%)
Affination	7	2.3
Pawnshop	84	27.0
Production	73	23.5
Scrap recycling	37	11.9
Retail	110	35.3
Total	311	100.0

Source: compiled by the authors.

Most of the organisations and individual entrepreneurs (hereinafter referred to as individual entrepreneurs) were interviewed. 120 are registered in the Central Federal District (hereinafter referred to as the Central Federal District), which is 38.6% of the total number registered on the GIIS DMDC platform. As of June 27, 2022, 6704 organisations of the Central Federal District were registered on the platform – 29.9% of the total number of organisations, which is also proportional to the sample. Approximate proportions are also observed in terms of the timing of the implementation of activities. Most of the interview participants are organisations with extensive experience and an established understanding of economic processes, problems, prospects and effective directions for the development of the sphere of

circulation of precious metals, precious stones and products from them (Table 2).

When sampling respondents, the organisational and legal forms of organisations are taken into account, which is important in the accounting and reporting system. It should be noted that in retail trade, the largest number of forms of registration is LLC, and in the purchase of office equipment scrap and pawnshops, the numerical advantage is for individual entrepreneurs (Table 3).

The variation of forms of taxation allowed businessmen to choose the most profitable form of activity for their field. At the same time, the choice of the form of taxation can be used as the basis for an analysis in order to find parity between supporting entrepreneurship and replenishing the state budget. The results of the survey confirmed that, despite the fact that only pawnshops, retail trade and acceptance of scrap office equipment work with individuals, there is a request to legalise the admission of individuals to the sphere of refining. In practice, this means that a small business, accepting metal alloys or scrap from individuals, without violating the law, is ready to independently produce and sell jewelry made of precious metals and stones. Today, only 8.3% of the surveyed manufacturers officially work with individuals, respectively, 91.7% of jewelry manufacturers and almost all refining organisations do not work. In our opinion, there is a reserve here for increasing production volumes and, possibly, legalising the production of precious metals and products made from them. The survey confirmed that the majority of craftsmen and individual entrepreneurs do not test their products during the production and alteration of jewelry by individuals and do not enter the GIIS DMDC system.

83% of all respondents believe that a necessary element for integrating programmes for accounting for their turnover on a single platform with subcontractors, controlling and regulating government agencies: 33.3% of refineries, 100%

Table 2

Distribution of survey participants by period of activity

Activity in the DMDC market	Number of respondents	Percent of respondents (%)
Less than a year	8	2.6
From 1 to 5 years	99	31.8
From 5 to 10 years	90	28.9
More than 10 years	114	36.7
Total	311	100.0

Source: compiled by the authors.

Table 3

Distribution of survey participants by organisational and legal forms

Organisational and legal form	Number of respondents	Percent of respondents (%)
LC	47	14.2
LLC	104	31.4
Sole proprietor	126	38.1
Production cooperatives	54	16.3
Total	331	100.0

Source: compiled by the authors.

of pawnshops, 81.3% of manufacturers and 70% of retailers. A sufficiently large proportion of positive responses is certainly a prospect for expanding the platform's capabilities and supporting business. The presence of negative answers is an element of misunderstanding of the platform by users. Therefore, the question is logical: "Do you understand the official website of the GIIS DMDC?" All respondents answered in the affirmative form. At the same time, the answers to subsequent questions indicate that, despite the clear interface, the task of technical support is not solved quickly enough. Visitors to the GIIS DMDC website are forced to look for the necessary information on other information resources.

Minor difficulties in registering on the GIIS DMDC website arose among 36% of respondents who did not properly prepare the constituent documents. Moreover, the largest share – 50% – belongs to representatives of retail trade, represented in all regions of the Russian Federation. Objective difficulties caused by the specifics of trade, requiring the input of commodity balances into the system, are known. Therefore, the deadlines for registration in the retail trade system were shifted.

It should be noted that 64% of the respondents, who noted the absence of difficulties in registering on the site, indicated the need for re-registration with an increase in activities or, for example, assistance in registration from allied colleagues, including employees of executive authorities.

94.2% of respondents contacted the technical support of the GIIS DMDC and other official websites of the participants. This is a lot, given the task of the system – the simplification and efficiency of accounting for the movement of products. A large percentage is also from the standpoint of work experience: almost all respondents are not beginners and are familiar with software products, own various digital tools. It is logical to conclude that there is no proper methodological explanation for various groups of participants. Indeed, the introduction of new tools always requires training and retraining [Blinova, 2017]. For the digital economy, this is also an objective reality, which is reflected in the relevant regulatory documents. The task of the scientific community is to support all areas of development of the sphere by methodological support of the adopted programme and, accordingly, regulatory documents.

65.3% of respondents found answers to their questions on the forum of the GIIS DMDC website (without contacting the support service). Cross-comparison with the answers to previous questions shows that the respondents who found answers on the forum are clearly less likely to contact technical support. The conclusions are obvious: there were many questions and they arose from users more than once.

Interest in the operation of the system was shown not only by the participants in the turnover, but also by state structures of control and accounting. Accordingly, explanatory work is

carried out on their official websites. For an ordinary buyer, the opportunity to check the quality of the purchased jewelry is provided along with the official website of the platform and on the official website of the Federal Assay Chamber (hereinafter referred to as FAC). Actually, the very process of checking the quality of goods by a barcode is not new for Russians, and the pros and cons have long been known [Bogdanov et al., 2018]. FAC also provides technical support to DMDC turnover participants: 53.1% of respondents applied for it and received a response. The remaining 46.9% did not apply to the FAC website.

The same percentage of respondents is observed in requests on the official website of the Ministry of Finance of the Russian Federation: 53.1 to 46.9%. In fact, the information posted on the sites is duplicated, there are cross-references. At the same time, both sites lack summary information on the operation of the GIIS DMDC system, for example, the total number of those registered in the system, which complicates the design of any scientific analysis with mandatory references to sources. In general, requests to the websites of departments could be excluded by automatic redirection to the GIIS DMDC website, created to support the platform.

The analysis of the answers on interaction with the websites of the FAC and the Ministry of Finance of the Russian Federation predictably assumed a large proportion of statements – 41.8% of respondents - about the lack of technical and information support for the work of the GIIS DMDC platform. Pawnshops are most dissatisfied with technical support – 74.5% of respondents. This is explained by a large proportion of small enterprises and individual entrepreneurs working in this area of activity. As a rule, such organisations have a small staff, and the increased workload requires additional time and financial costs from them.

70% of participants agree to e-mailing about all system innovations. Based on marketing theory, this is a very good percentage. Taking into account the negative answers of the respondents and a large package of clarifications on the site forums by the participants of the GIIS DMDC system, this request should be satisfied, especially since an alternative form of support when working in the GIIS DMDC system (participant chats, articles in magazines, assistance from allied workers, etc. .) are used by 94.2% of respondents. This fact once again confirms the current request of the participants for clarifying the work on the new platform.

Simplification of workflow in connection with registration on the GIIS DMDC platform is noted by 10.6% of participants, which is a high proportion, given the large number of questions respondents have when working in the system. This fact should be emphasised when conducting explanatory work with participants in order to avoid hidden sabotage of the implementation of the software product.

Additional software products in connection with registration in the system or the need to improve its operation were purchased by 90.4% of respondents. Such a high percentage was due to 100% positive responses from representatives of the retail trade network and pawnshops, who were faced with the need to automatically enter product balances into the GIIS DMDC system.

Additional office equipment and other equipment in connection with registration in the system or the need to improve its work was purchased by 91% of respondents, which was caused by the need to create an additional workplace (s) and its equipment with office equipment.

In connection with registration on the GIIS DMDC platform, 54% of respondents said that their staff increased. It is logical to assume that the rest increased the workload of existing specialists or took advantage of the assistance offered, including paid assistance.

The increase in the turnover of funds in 7.1% of respondents from the moment of registration on the GIIS DMDC platform is associated with the competent activities of the enterprises themselves and the macroeconomic situation in the world and in the country, rather than with work in the system. Otherwise, it is logical to assume that the share would be much larger, especially in retail, which is, in fact, an indicator of consumer demand. This did not happen - trade showed an increase in only 20% of respondents.

Since registration on the GIIS DMDC platform, the turnover of marketable products has increased for 3.5% of respondents, again in the retail sector. Comparison with the previous answer means several things at once. Firstly, an increase in prices for certain types of products, since domestic jewelry manufacturers did not show an increase in their volumes. Secondly, this share is determined by the increase in imports² and the sale of balances to simplify (reduce) the volume of input into the system.

Summary data of the GIIS DMDC system by types of activity are of interest to 67.2% of respondents. Here, all groups of respondents are unanimous, being in constant competition and looking for new sources of economic growth to make a profit. The 100% positive response of representatives of refineries also reflects the search for stable suppliers of raw materials for uninterrupted work. The competition in this direction is the most acute, and the possession of information allows you to make forecasts and build production plans based on them. At the same time, 81.7% of respondents agree on the openness of their reporting data in the GIIS DMDC system for all registered users, which is surprising, but can be explained by the desire to have a comparative characteristic not only in their area of activity, but also for the entire set of organisations working in the DMDC sphere.

The GIIS DMDC system needs further improvement – 100% of respondents think so. This is explained not only by its shortcomings, but also by the prospects for work that the survey participants saw for themselves and which were clarified by them already during the interview.

Among the unresolved issues that make it difficult to work in the system, it is necessary to note those that are repeated by more than two respondents. The questions were grouped by topic and by type of the activity of the respondents.

Thus, refineries noted:

- 1) the impossibility of transferring the shipment of samples containing precious metals using the existing functionality, similar to the shipment of finished products;
- 2) frequent blocking of boilers when transmitting values of the chemically pure mass of precious metals according to the data of the refinery;
- 3) the impossibility of transferring the data of the calculation passport for several batches of incoming raw materials.

Specialised commercial organisations that provide loans to citizens on the security of their jewelry, as well as their storage on a reimbursable basis – pawnshops note among the problems:

- 1) the need to simplify the input of the balances of collateral and own reserves;
- 2) the problem of integration with the JewelerSoft software;
- 3) lack of step-by-step technological instructions.

Jewelry manufacturers face unresolved issues in terms of:

- 1) registration: when applying for special registration, the programme provides for one main type and two additional ones, all subsequent types of OKVED must be entered with the status “Other”;
- 2) lack of proper technical support and step-by-step technological instructions;
- 3) input of balances stored in warehouses and not transferred for sale.

The most time-consuming transition to work in the GIIS DMDC system, judging by the results of the interviews, turned out to be for retail trade organisations, which noted the following errors:

- 1) technical errors when filling in data for registration;
- 2) withdrawal of marked products from circulation;
- 3) labeling of commodity residues.

All three of the above groups of respondents note:

- 1) the inability to go to the websites in the personal accounts of the Federal Tax Service, the Federal Financial Monitoring Service, the Federal Customs Service;
- 2) the inability to transfer from the GIIS DMDC platform to the websites of the Federal Assay Office, the

²Russian jewelry industry state, problems and risks. <https://uvelir.info/media/files/rossiyskaya-yuvelirnaya-promyshlennost-sostoyanie-problemy-riski.pdf?ysclid=la6ut5epor838639138>.

Ministry of Internal Affairs of Russia, the Ministry of Industry and Trade of the Russian Federation and their integration;

- 3) a long wait for answers (up to a month) from technical support.

In the course of interviewing individual entrepreneurs in the type of activity “Collection, transportation, processing and disposal of waste of hazard classes I-IV”, it was clarified that in this direction, under the current legislation, computer equipment, office equipment, household appliances and other equipment that has lost their consumer properties. As a rule, a small business with a stable reputation, established partnerships and, accordingly, extensive work experience operates in this area. The market is uncompetitive due to low profits. For example, the largest gross revenue of an individual entrepreneur for 15 years of operation amounted to 2,800 thousand rubles. Entrepreneurs seek to reduce production costs; the average number of employees in organisations with the specified type of activity is three people.

The specifics of the work is as follows: in the process of equipment recycling accepted for disposal, scrap of electronic circuit boards and other components containing precious metals is generated. Since the equipment transferred for recycling in 99% of cases is imported office equipment with a low content of precious metals, the income from the sale of scrap containing it is no more than 3% of the gross income of the enterprise. The gold content in the scrap of electronic circuit boards obtained from the dismantling of imported office equipment is within 0.01%, while refineries make payments at a gold content of 0.041% or more³.

It is also necessary to note the peculiarity of the calculations: the cost of precious metals contained in imported equipment is not reimbursed to the customer due to their low percentage in scrap and high costs for their extraction. Another situation is with the old Soviet-made equipment that contains precious metals coming in for recycling. Precious metals in this case were put on a special account. To write them off the register, the customer needs a passport of the actual content of precious metals from the refinery. When accepting such equipment for recycling, the processor is obliged to transfer the received electronic boards and radio components to the refinery, provide the customer with a passport-calculation for the extracted precious metals and return the cost of precious metals. To fulfill these requirements, the processor needs an agreement with the refinery. Prior to the introduction of the GIIS DMDC system in 2021, the transfer of scrap to a refinery required only special registration with the assay office and registration on the Rosfinmonitoring portal.

Despite the complexity of the accounting system, there are no difficulties in registering in the GIIS DMDC system

for entrepreneurs working in this direction; only difficulties in obtaining a license were noted [Grishin, 2018].

It should be clarified that entrepreneurs who have not received a license from the Assay Office due to objective reasons are not deprived of the opportunity to dispose of computers and office equipment. They have the opportunity to transfer electronic scrap to enterprises with a license for the processing of precious metal scrap, which, in turn, after additional processing, transfer enriched raw materials to refineries.

Offers from a business working with the collection and processing of scrap, which the authors support:

1. Placement on the official websites of departments of sample documents required to obtain a license would greatly simplify and reduce the cost of the process.
2. Operational transfer from the Arshin system to the GIIS DMDC. Today, when purchasing scales with a fresh release date, a license applicant may be faced with the need to wait until the verification data is reflected in the State Register of Measuring Instruments of the FSIS “Arshin”. It is necessary to integrate the two state integration systems.
3. One of the possible ways to bring illegal mining and production out of the shadows is to allow the legal sale of electronic circuit boards and other electronic components containing gold and other precious metals to individuals – owners of Soviet-made equipment. The question is debatable, but relevant.

In the course of monitoring the responses of the participants in the GIIS DMDC system, the authors conducted comparisons with the sites indicated in the questionnaire, studied participants’ forums, thematic articles in specialised journals. To assess the results of the interviews, consultations with interested ministries and departments directly working in the system were very useful. The Federal Assay Office (FAO) described the emerging problems in detail by operation. The information was worked out and included in the interview report.

For a wide range of researchers, it is necessary to note the slowness of the system when requesting general information necessary for departmental analysis. Actually, the search itself is difficult. For example, it cannot be carried out according to the given criteria. In the course of interviews with FAO specialists, shortcomings were also noted in terms of maintaining special records: the elimination of duplication in the event of the identity of the name or full name of the head, founder, the inability to change the organisational and legal forms of individual entrepreneurs and organisations already registered in the system. Also, the system must take into account that upon termination of activity, and then its resumption in the IFTS, the TIN of individual entrepreneurs

³ Inventory of electronic scrap and secondary raw materials containing precious metals sent to JSC “Shchelkovsky Plant VDM”. Official website of the Shchelkovsky VDM plant: <http://zavodvdm.ru/wp-content/uploads/2019/10/opis-jel.loma.docx>.

remains unchanged, while the OGRNIP changes. The working conditions of organisations are also changing. Their history is also impossible to trace on the site by regulatory authorities.

Based on the analysis of the survey work done, the authors prepared a number of proposals that complement the proposals of the respondents.

Thus, we believe that in order to improve the work of the GIIS DMDC system, it is necessary to organise the collection of proposals from participants around the clock with public reflection on the site and the possibility of commenting by users. Such a scheme of work is already being implemented, but the collection of proposals is inactive due to the inertia of the participants. Meanwhile, it is irrational to conduct such survey research on a regular basis by scientific institutions, even with the use of administrative resources.

The development of the digital space, the creation of state electronic systems in other areas allows not only to borrow successful solutions to programme problems, but also to integrate interconnected programs. We consider it not only possible, but also necessary to integrate the GIIS DMDC with the programmes of the following departments:

1. Federal Tax Service (FTS):

- automatic pulling up of the exact location of a legal entity address from the Unified State Register of Legal Entities;
- automatic pulling up of OKVED codes from the extract of the Unified State Register of Legal Entities / USRIE and their reflection in the special accounting card;
- automatic replacement of pull-up OKVED codes from the USRIE/USRIE extract with OKVED codes with the necessary explanations/comments (if necessary) for special registration.

2. Ministry of Internal Affairs of Russia:

- automatic check of the status of the passport of the Russian Federation, indicated by the individual entrepreneur / head of the legal entity;
- checking and obtaining a criminal record certificate;

3. State information system “Typical cloud solution for automating control (supervisory) activities” of the Federal Financial Monitoring Service:

- automatic pull-up of the necessary information for obtaining a license, making changes to the register of licenses, terminating licenses from GIIS DMDC to the Federal Financial Monitoring Service;
- automatic pulling of information about the license from the the Federal Financial Monitoring Service to the register of licenses of the GIIS DMDC;
- automatic introduction of changes to the register of licenses directly by GIIS DMDC – the Federal

Financial Monitoring Service, excluding Public Services and Functions Portal, as is currently the case.

In order to reduce the burden on the jewelry industry entities that are members of the national anti-money laundering system, within the framework of fulfilling the requirements of the legislation, the federal service uses the personal account to: obtain a list of organisations and individuals in respect of which there is information about their involvement in extremist activities or terrorism, weapons proliferation mass destruction; a list of organisations and individuals in respect of which measures to freeze (block) funds or other property have been applied or should be applied; decisions of the interdepartmental coordinating body that performs the functions of combating the financing of terrorism. If there is integration between GIIS DMDC and the Federal Financial Monitoring Service, automatic information exchange is possible.

The “Arshin” and “Public Services” systems can become an interconnected platform, additional solutions are needed to integrate the “1C Accounting” programme into the system, which today employs almost all financial workers in the studied area.

The proposed integration must be carried out promptly, in accordance with the requirements of business and the interests of the state. It is clear that for the further development of information platforms it is necessary to attract commercial developers. Even now, in periodic electronic articles published on the websites of the Jewelry Trade Navigator, Jewelry Portal Service, etc., paid options for solving emerging problems and additional software to facilitate work in the GIIS DMDC system are offered⁴. Considering the large number of small businesses, individual entrepreneurs with small turnovers and a small staff of employees working in such areas as scrap collection, pawnshops, trade, a cardinal solution is needed that corresponds to the task of supporting small businesses. In fact, this direction requires additional theoretical study on the part of the scientific community and practical proposals for their implementation.

The results of the interviews can be useful in the development of guidelines, user manuals, step-by-step instructions, etc. documents designed to simplify the use of GIIS DMDC for participants. At the same time, the results of the interviews clearly demonstrated the demand of users for the digitalisation of processes, the facilitation of the document flow of organisations, the hope for the possibility of making more accurate forecasts for the development of their own business. An analysis of the responses allowed the authors of this paper to conclude that the system needs to be adapted as soon as possible to the current demands, including from the state and executive authorities operating in the interests of all Russian citizens.

⁴ Outline: CA. https://kontur-ep.ru/support-dmdk?utm_source=yandex&utm_medium=organic&utm_from=adv-link-enquiry-ca-25290-4108; JewelerSoft. <https://uvelirsoft.ru/blog/registratsiya-v-giis-dmdk-lichnyy-opyt/?ysclid=l8j3fhq3fy158059644>.

References

- Blinova M.G. (2017). New forms and methods of personnel training as an integral element of increasing its competitiveness in modern socio-economic conditions. *Innovative Economy: Prospects for Development and Improvement*, 1(19). (In Russ.)
- Bogdanov V.N., Vikhlyantsev P.S., Simonov M.V., Bludov D.A. (2018). *Systems of protective marking and tracing of goods*. Moscow, Izdatel'skie resheniya. (In Russ.)
- Grishin V.A. (2018). Turnover of precious metals. A look from the inside. *Jewelry Trade Navigator*, 12(180). <https://njt.ru/archive/2018/18-12/23889/>. (In Russ.)
- Tatarova G.G. (2002). Qualitative methods in the structure of data analysis methodology. *Sociology: Methodology, Methods and Mathematical Modeling*, 14:33-52. <http://ecsocman.hse.ru/text/16458709/>. (In Russ.)
- Frolov S.S. (2008). *General sociology*. Moscow, Prospekt. (In Russ.)

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