SOI: 1.1/TAS
DOI: 10.15863/TAS
Scopus ASJC: 1000

ISSN 2308-4944 (print)
ISSN 2409-0085 (online)

№ 10 (102) 2021

Teoretičeskaâ i prikladnaâ nauka

Theoretical & Applied Science

Philadelphia, USA

Teoretičeskaâ i prikladnaâ nauka

Theoretical & Applied Science

10 (102)

2021

International Scientific Journal

Theoretical & Applied Science

Founder: **International Academy of Theoretical & Applied Sciences**

Published since 2013 year. Issued Monthly.

International scientific journal «Theoretical & Applied Science», registered in France, and indexed more than 45 international scientific bases.

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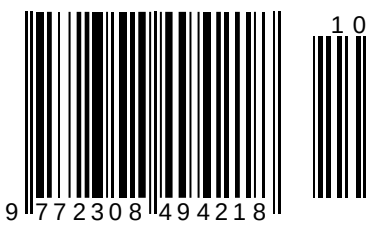
ISSN 2308-4944



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International Scientific Journal

Theoretical & Applied Science

ISJ Theoretical & Applied Science, 10 (102), 1064.
Philadelphia, USA

Impact Factor ICV = 6.630

Impact Factor ISI = 0.829
based on International Citation Report (ICR)

The percentage of rejected articles:

ISSN 2308-4944

Impact Factor:					
	ISRA (India) = 6.317	SIS (USA) = 0.912	ICV (Poland) = 6.630
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SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2021 **Issue:** 10 **Volume:** 102

Published: 01.10.2021 **http://T-Science.org**

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ABOUT THE POSSIBILITY OF THE DEVELOPED SOFTWARE FOR ASSESSING THE PROFESSIONAL COMPETENCE OF EXPERTS AND MANAGERS OF ENTERPRISES THAT FORM THE PRODUCTION OF ATTRACTIVE AND POPULAR PRODUCTS

Abstract: *The authors recommend that the market reconsider the concept of forming it with in-demand and import-substituting goods, taking into account their attractiveness. Such a concept will fully correspond to the desire of the consumer to satisfy his desire and desire to make a purchase, taking into account his social status, providing manufacturers with the sale of their products in full and guaranteeing enterprises stable TPP of their activities.*

Key words: *standard, software, competence, demand, products, jobs, economic development, life activities, comfort, production, light industry, pathological deviations, demand, profit, children's shoes.*

Language: *English*

Citation: Blagorodov, A. A., Shcherbakov, D. S., Prokhorov, V. T., & Volkova, G. Y. (2021). About the possibility of the developed software for assessing the professional competence of experts and managers of enterprises that form the production of attractive and popular products. *ISJ Theoretical & Applied Science, 10 (102),* 301-365.

Soi: http://s-o-i.org/1.1/TAS-10-102-22 ***Doi***: https://dx.doi.org/10.15863/TAS.2021.10.102.22

Scopus ASCC: *2000.*

Introduction

UDC 685.17: 319.77

A scientific experiment has always been costly and scientists are constantly looking for ways to reduce these costs through the so-called surveys of specialists in order to find out the most significant factors in order to conduct the experiment on the basis of the survey results. Today, the authors of the article have developed software, the use of which provokes more active participation of respondents to receive answers to the questions posed in the questionnaires. But it turned out to be not so simple, it was necessary to pay more attention to the choice of these respondents, whose competence on the problem under study should not cause the experimenter to doubt their

reliability. To create such a technique for assessing the competence of respondents, we proposed to use the coefficient of concordance (W), the value of which is known to be varies within $0 \leq W \leq 1.0$. If a respondent, according to the results of a priori ranking, has the value of the concordance coefficient in comparison with the reference value of the competence of the leading specialist within $0 \leq W \leq 0.5$, then the opinion of such a respondent can be neglected, that is, his opinion can be excluded from the survey results. In this regard, in order to reduce the number of such incompetent respondents, the researchers involved in the survey should be highly qualified specialists in this field, employees of scientific schools, the results of which on this issue have been recognized by scientists of other scientific schools, scientists - experimenters, graduate students, masters and bachelors studying in similar scientific directions. The number of survey participants is not limited by anything, but only by the desire of the experimenters to get answers to the questions posed to them. Wherein, participation in the survey of young researchers is preferable, since this will definitely provoke the expected effect and reliable result. At the same time, it is possible to hear another version of the solution to the problem, which means that the experimenter will be able to remove doubts by clarifying the list of factors that influence the achievement of effective results, and, if necessary, re-question all the participants dealing with this problem in order to confirm or refute their assumptions and doubts. In any case, the use of a survey will be less costly, and the effectiveness of the results obtained and their reliability are quite high, which will make it possible to formulate the only correct solution to the problem in front of him, and in which the solution will be achieved with minimal costs, which is especially important today and, ultimately, tomorrow. This opinion is due today to limited funding for the implementation of research, but with its obligatory solution - this discrepancy between the need and the possibilities will help the experimenter to ensure the implementation of the task set before him and help young researchers to master the new method of organizing research work at the lowest possible cost, which is always relevant.

Increasing the demand and competitiveness of the products of footwear enterprises is one of the most important areas of real economic growth, both in Russia and in the regions of the Southern Federal District and the North Caucasus Federal District. Therefore, the current situation has led to the need to release products of the original assortment, taking into account the national and climatic characteristics of these regions and to improve the metrological support for testing footwear and leather goods and haberdashery to improve the quality of manufactured products within the framework of import substitution.

It is not enough just to produce products on the territory of the Southern Federal District and the North Caucasus Federal District, but it is necessary to ensure the development and expansion of their production in the future, which is possible taking into account the interests of all participants in this process in the development of a competitive assortment, in the introduction of an innovative technological process using more productive, universal and multifunctional equipment, in the improvement of metrological assurance of the quality of the production of footwear and leather goods and haberdashery, in the interest and support of regional, municipal and federal branches of government.

What is most important today for the success in the market of many new and long existing small, medium and large enterprises is their ability to provide the consumer with shoes of higher quality than before, and at the same time for the same or less price.

Modern production or, as it is also called, world-class production must meet the following requirements:

– have greater flexibility, the ability to quickly change the range of products. The product life cycle has become as short as never before, the variety of product assortments is higher, and the seriality of products, the volume of one-time production batches is less. Hence, a production focused on the release of mass, standardized products (strictly corresponding to standards, specifications, technical conditions), unable to constantly adapt to the needs of real, often small groups of consumers, is now doomed to extinction;

– use new forms of control, organization and division of labor, taking into account the more complex production technology;

– rely on comprehensive quality management. Quality requirements not only increased, but also changed the nature of decision-making: it is not enough to produce good products, it is also necessary to think about organizing after-sales services, about providing additional branded services to consumers who are highly individualized in their requests;

– simultaneously improve product quality and reduce costs. If earlier it was possible to offer the consumer a lower quality product at a lower price and, conversely, a high price always corresponded to high quality, today the situation has changed. The higher quality of the product should be provided at the expense of the same lower price.

Main part

Now in our country there is a situation where most of the population has a very modest income, and it is she who is a potential buyer of mass-produced footwear.

Solving the problems of style, marketing, advertising will allow domestic footwear of mass production to be demanded by this wide sector of the population of Russia. Small and medium-sized shoe enterprises should provide footwear to a more

profitable part of the population, however, as well as highly automated production complexes.

In recent years, the absolute increase in the production of leather footwear has been constantly increasing, the range of footwear is being updated at shoe enterprises, taking into account the demand of the population, the production of model and insulated footwear, footwear with a top made of white leather and genuine patent leather, smart shoes for children is increasing. The transition of the country's economy to market relations led to a sharp deterioration in the situation in the footwear industry in Russia due to a decrease in the effective demand of the population, deepening inflationary processes, a crisis of non-payments, which, in turn, caused an imbalance in production and circulation.

When organizing the sale of manufactured footwear, one should not forget that in the South and North Caucasian federal districts there have been and remain so-called "hot spots", which are territories with a crisis in the economic situation and a negative political situation.

Correct definition of quality, consistency and systematic quality management give the manufacturer a decisive advantage in the competition for the consumer. It would seem that everything is simple, but simplicity is equally brilliant and deceiving. The general plan for solving the problem determines the vector of movement, sets the factorial priorities of activity - no more.

A product made by man is dual in nature, it combines the natural properties of raw materials and the characteristics introduced into it by human labor. The product has a rental value and added value. In this context, it is not value that is important - it serves as a quantitative equivalent of the quality of a product in general, but the result of labor - in the form of a transformation of the natural state of an object. The product of human activity has a natural, basic, level and a superstructure, introduced. Hence the need for a dualistic perception of the quality of the product, which should not be interpreted primitively as a double quality. The quality of the product is one, but the production duality of the product is associated with it.

Such two-sidedness of the quality of the goods misleads those who, having not yet understood the art of dialectical thinking, strive to sort everything out “on the shelves”, forgetting about the structure of which these shelves are parts. The quality of a product is only determined by a natural basis, but it is built artificially.

The quality of the product has several creators. This is a fashion designer, constructor, technologist, manager; their qualifications, experience are measured without problems. Others are also within reach, only their measurement is difficult, especially when it comes to the consumer.

The economic situation affects both producers and consumers, shakes the market on the waves of its uneven movement, and together with purchasing power and perceptions of quality...

The designer, technologist, manager develop their understanding of the quality of the goods (they can be compensated), they are linked by the common interest of the manufacturer. The buyer has a special approach to quality. As a consumer, he is not sure about the integrity of the manufacturer. In addition, the buyer has his own tastes, reasons, conditioned by the real buying opportunity. There are also the interests of the market, which has become an independent subject of the economy. Speculation is legalized and attracts with its potential. By controlling the market, an intermediary - a speculator - is able to form an image of quality in his own interests, in particular, through advertising, giving priorities, etc. Finally, there is the quality of the product itself, expressed in the totality of properties of natural origin and added by the manufacturer. As a result, we came to the "quality square",

Anything common exists objectively, but only through a single one: at the end of the process, there is always a separate, concrete buyer, Pyotr Stepanovich Sidorov, and boots, which Pyotr Stepanovich chose from dozens of different ones. They seemed to him the best in quality and price. The sales assistant professionally explained to Petr Stepanovich that there are better quality boots in the same price range, but, being an independent person, he did not change his mind. This is why pre-sale preparation of products and the culture of the seller are important. The last word belongs to the buyer, his perception of the quality of the product. Everything else only plays up to him.

The most serious contradiction, apparently, remains the discrepancy in the images of product quality between the manufacturer and the consumer. The special importance of a different approach to the quality of the manufacturer and the consumer is natural. They are the main subjects of the system of economic relations, they have a common goal - a product. The former make it, the latter consume it, but they have different motives due to their different position in the system and the culture of target perception....

The manufacturer creates the product, but not the product - the ultimate goal of the manufacturer, but the sale of the product. The direct connection between the producer and the consumer is local because it has a negative effect on the producer. The seller blocks the consumer from the manufacturer, and the manufacturer is forced to focus not on the market, but on the market situation, which is most often artificially formed by a speculator and advertising.

The manufacturer, unlike the seller, is responsible for information both by law and by his professional reputation. The seller manipulates the

information as he sees fit - the manufacturer is constrained by responsibility, besides, the market often dictates the rules of relations to him.

What is the solution for the manufacturer? There is only one way out - a direct presence in the market and significant investments in education and education of consumers. It is difficult to overcome such a program alone, uniting is absolutely real. The domestic manufacturer has everything it needs to oust the speculator from the retail market. He has professional experience, qualified personnel, scientific and technical support, a certain confidence of buyers returning to the old, pre-reform, priorities, which are actively exploited by unscrupulous manufacturers and to which the authorities shyly close their eyes, which does not want to return to the Soviet experience. Confectioners, meat-makers, wine-makers shamelessly use Soviet brands, replacing them with surrogates. Brands of Vyatka, Orenburg, Ivanovo are returning to the market, some Moscow and Leningrad enterprises. The trend of returning interest is gaining stability.

Filling technological processes for the production of competitive and popular footwear for consumers in the regions of the Southern Federal District and the North Caucasus Federal District is costly. The use of universal and multifunctional equipment forms the technological process in such a way that it makes it possible to produce the entire assortment of high quality footwear with different price niches.

But in this case, it is necessary to find a solution that would allow the manufacturer to have a tool for assessing the effectiveness of innovative processes. Such a solution is possible if, in each case, an efficiency coefficient is used for such an assessment, the value of which, as a concordance coefficient (W), will be applied within the limits $0 \le K_{эф} \le 1$ ... If its value tends to one, then this means that the manufacturer has managed to find the most optimal solution, but if its value tends to zero, then an analysis of the reasons for such an unsatisfactory result and a search for errors that provoked such a result are required.

In the practice of expert assessment, the assessment of competence with the help of an expert's self-assessment has become widespread. There are various approaches to assessing this indicator. In accordance with one of the methods, the assessment of the competence of expert auditors is based on the calculation of the competence coefficient Kj, which is calculated on the basis of the expert auditor's judgment about the degree of awareness of the problem being solved and the indication of the sources of reasoning for his own opinion. Competence ratio, K_j calculated by the formula:

$$K_j = 1/2 \times (K_{uj} + K_{aj}), \qquad (1)$$

where Kuj is the coefficient of awareness of the problem; Kaj is the coefficient of argumentation on the same problem.

The expert's awareness coefficient is calculated based on the expert's self-assessment, namely:

- awareness of the state of the modern market economy (1);
- awareness of the state of affairs in light industry (2);
- competence in the field of marketing communications (3);
- competence in advertising communications (4).

The experts gave preference to advertising and sales promotion as the main means of marketing communications for promoting light industry products in the sales market with unstable demand.

But if the customs commission (TC) needs to make sure that experts have professional competence, it is necessary to use the addition to the program for processing the results of a priori ranking developed by the authors, expanding its capabilities by giving it an evaluation function. This need arose due to a significant increase in the volume of customs work. Now the customs is forced to invite a wider and not always prepared group of specialists as experts to participate in assessing the quality of such a wide range of products without sufficient experience in a qualified assessment of their purpose and quality, which can provoke the entry of low-quality products into domestic markets. In this regard, there was an urgent need for the developed methodology, according to an objective assessment,

To confirm the reliability of the proposed methodology in an objective assessment of the competence of experts, a survey was carried out of a group of experts and teachers of higher educational institutions of the Rostov region, who participate in the training of the specialists themselves involved in the examination by customs.

To do this, we will expand the list of the most preferred advertising communications used to promote light industry products using the assessments of expert auditors, namely: radio, television, print, Direct Mail, Public relations, telemarketing, sales promotion, special advertising, advertising facilities, other types of product promotion (flyers, posters, handouts, balloons).

The results of the survey of experts are shown in table. 1, and university teachers - in table. 2. We were pleasantly surprised that the preliminary designated competence of the invited specialists for the questionnaire was confirmed by the final results - their assessment of the importance of the proposed competencies (the effectiveness of marketing communications for promoting light industry products to the consumer) basically coincided (Tables 2 and 3). But, given that the main task of the customs is to obtain an assessment of the competence of each expert during their work in customs and to make a decision

on their possible participation in the examination in the future or their refusal to do so, we conducted a comparative assessment of the results of the questionnaire survey on these marketing communications for all participants in the experiment, that is, for experts and for university professors.

The results of the survey are given in table. 4. The sum of the ranks for each competence was compared among themselves both for experts and for teachers, and this made it possible, based on the value of the coefficient of concordance, to arrange them according to the degree of competence. The group of the most competent, whose concordance coefficient was 0.9 ÷ 0.97, included 9 teachers out of 10, and only one teacher had a concordance coefficient lower than the normative one, namely, 0.54; but for expert experts - the results of their participation in the examination are much worse, none of them received the value of the coefficient of concordance, which was shown by the teachers - they have it equal to 0.5 - 0.87, therefore,

What factors would you prefer when evaluating advertising communications for promoting light industry products to domestic sales markets? Taking advantage of the privileges - to assign them the appropriate rank from the arithmetic series - preferable starting from 1, and not preferable - a higher digit, ensuring that the requirements of the arithmetic series are met, namely, by not allowing missing digits in the arithmetic series. If you have difficulties in choosing your preferences, you can use "linked ranks" by assigning two or more factors the same rank, but here you must comply with the requirements of the arithmetic series:

Table 1. Characteristics of the most preferred advertising communications

No.	Characteristics of the most preferred advertising communications for promoting light industry products on the market of the regions of the Southern Federal District and the North Caucasus Federal District	Rank
1.	Radio	
2.	A television	
3.	Printing	
4.	"Direct mail"	
5.	Public relations	
6.	Telemarketing	
7.	Sales promotion	
8.	Special advertising	
9.	Advertising constructions	
10.	Other Promotion: Product: Flyers, Posters, Handouts, Balloons	

Table 2 - The results of the questionnaire survey by experts - students about the most effective advertising communications for promoting light industry products

Expert	Element of advertising communications									
	1	2	3	4	5	6	7	8	9	10
1	4	1	6	7	9	10	2	3	5	8
2	9	4	8	7	2	3	1	5	6	10
3	6	1	2	5	4	3	7	8	10	9
4	10	2	1	4	3	8	5	9	6	7
5	10	1	3	2	9	7	4	5	6	8
6	10	5	2	7	8	4	1	9	3	6
7	2	1	3	9	8	7	4	5	6	10
8	2	1	7	8	3	10	4	5	6	9
9	4	5	1	2	3	7	6	9	8	10
10	10	5	6	3	7	1	2	8	9	4
Total:										
Output										

Table 3 - The results of the questionnaire survey by experts - teachers about advertising communications for the promotion of light industry products in the presence of "related" ranks (after processing)

Expert	Element of advertising communications									
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
1	10	1	2	3	5	4	6	7	8	9
2	8	1	3	2	4	5	6	7	9	10
3	10	1	3	4	5	6	2	7	8	9
4	10	5	1	2	3	4	6	7	9	8
5	10	1	3	4	5	6	2	7	8	9
6	10	1	3	4	5	6	2	7	8	9
7	4	1	6	7	9	10	2	3	5	8
8	10	1	6	3	4	5	2	7	8	9
9	10	1	3	4	5	6	2	7	9	8
10	10	1	2	5	3	6	4	7	9	8
Sum of ranks										
conclusions										

But at the same time, I would like to warn the heads of organizations that attract experts about their responsibility to provide concise, unambiguous information about goods, in the decoding of which the experts involved will participate. The advantages of this information are brevity, unambiguity, but the perception of symbols requires a certain professional training to decipher the information. The basic requirements for commodity information are the following basic requirements: availability, sufficiency, reliability.

These requirements became known as the "Three Ds".

- The first "D" - reliability - implies the truthfulness and objectivity of information about the product, the absence of misinformation. Unreliability of information is information falsification.

- The second "D" - availability - is associated with the principle of information openness of information about the product for all users. The Federal Law "On Protection of Consumer Rights" states that information about a product must be in Russian.

- The third "D" - sufficiency - is interpreted as rational information saturation, i.e. both incomplete and redundant information should be excluded. Incomplete information, for example, the expiration date of a dairy product is not specified, can lead to damage to the health of the consumer. Too much information is useless information about a product; it can irritate the consumer and prompt them to abandon a purchase.

Table 4 - Transformed matrix of ranks based on the results of questioning by experts - students and expert - teachers on the influence of advertising communications on the promotion of lightweight products and the results of calculating the coefficient of concordance W

Survey participants		Factor										
		X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	*W*
Expert students, graduate students and representatives of enterprises	1	4	1	6	7	9	10	2	3	5	8	0,59
	2	9	4	8	7	2	3	1	5	6	10	0,71
	3	6	1	2	5	4	3	7	8	10	9	0,85
	4	10	2	1	4	3	8	5	9	6	7	0,87
	5	10	1	3	2	9	7	4	5	6	8	0,82
	6	10	5	2	7	8	4	1	9	3	6	0,68
	7	2	1	3	9	8	7	4	5	6	10	0,64
	8	2	1	7	8	3	10	4	5	6	9	0,51
	9	4	5	1	2	3	7	6	9	8	10	0,79
	10	10	5	6	3	7	1	2	8	9	4	0,75
Experts - teachers universities	11	10	1	2	3	5	4	6	7	8	9	0,87
	12	8	1	3	2	4	5	6	7	9	10	0,92
	13	10	1	3	4	5	6	2	7	8	9	0,96
	14	10	5	1	2	3	4	6	7	9	8	0,90

	15	10	1	3	4	5	6	2	7	8	9	0,96
	16	10	1	3	4	5	6	2	7	8	9	0,96
	17	4	1	6	7	9	10	2	3	5	8	0,96
	18	10	1	6	3	4	5	2	7	8	9	0,54
	19	10	1	3	4	5	6	2	7	9	8	0,96
	20	10	1	2	5	3	6	4	7	9	8	0,96
Places												
Expert opinions												
Teachers' opinions												
Rank sums												

The ideology of satisfying consumers of products and services of higher education will burst into the life of universities more and more energetically every year. Quality becomes a universal criterion in a competitive environment. Quality is the main measuring instrument by which comparisons will be made. The first steps have already been taken in Russia, an independent system of attestation and quality control of education is being formed on the basis of the concept of multidimensional quality management of an educational institution, and project contests are being held on the problem of "Management of the quality of education". We are confident that universities that have declared quality as their main goal will live and fight for prosperity, while those that have abandoned the quality program face an unclear future.

The formation of a Common European educational space requires significant efforts from Russian universities to bring the educational process in line with the criteria in the field of higher education in order to facilitate the independent recognition of degrees and the development of student mobility. For this, universities are recommended to undergo international certification. One of the most important ways to improve the educational process, taking into account the common European principles, is the introduction and improvement of the system for ensuring the quality of education.

The main conditions for the implementation and effective operation of the quality management system in the university is compliance with the standards GOST R ISO 9001: 2011 "Quality management systems. Requirements ", which define the requirements for the QMS and are aimed at customer satisfaction. According to ISO standards, quality is the set of characteristics of an object related to its ability to meet the stated and anticipated needs of customers. An object can be an activity or a process, a product or a result of a service, an organization or a system.

In this context, one can say:

- on the quality of the results of educational processes;

- the quality of the processes themselves; and - the quality of the system or organization of activities and their relationship.

The quality of the educational services provided presupposes their ability to meet the needs and expectations of a particular consumer.

Naturally, the high quality of the results of educational activities, which is determined by the level of knowledge and skills of university graduates, can be achieved only with a good level of organization and control of the educational process. This quality, in turn, is determined, on the one hand, by the content of training, and on the other, by the provision of resources: material and technical, educational, methodological, informational, and personnel. The most important component can be considered the content side of education.

ISO standards are based on eight principles of quality management, one of which is the process approach. The introduction of a process approach allows you to more efficiently manage activities and related resources to achieve a given result. In accordance with this principle, ISO standards require that the processes in the institution be defined, identified and described.

All these schemes are based on the well-known idea of product quality management through process quality management. Any area of university activity is represented as a set of processes. For each process, the parameters of the quality of resources, input data (raw materials) and output data (results) are identified, and "suppliers and consumers of input and output" are determined. For all elements of this typical scheme, quality meters are installed, requirements for the quality of input data, processes, resources and output data are fixed.

Each of the training courses acts simultaneously in the role of both a "supplier" and a "consumer", that is, each teacher puts forward requirements for the quality of teaching "foreign" disciplines and satisfies the needs of teachers for the quality of processes and results of their activities.

The transition to new management schemes and the involvement of the entire team in quality management processes involves continuous retraining of employees. This task of transforming the university into a continuously learning organization is the most difficult (there are few teachers-managers who know the basics of quality management).

A global computerization of all spheres of the university's activity will be required. At the university, the solution to this problem is complicated by the different pace of movement of the departments towards the creation of electronic teaching materials.

As a rule, each professional at the university, instead of paying more attention to coordinating work with his colleagues, focuses on his own person. In a relatively calm environment, this principle can be proud of. This kind of freedom is a defining moment in the creative process. However, autonomy comes with significant costs. These costs lie in the fact that the institution sometimes begins to function as a disorderly collection of elements moving in different directions without any unifying idea, or without clear goals of what the team members are doing and why. Of course, it is not news that universities are conservative institutions, indecisive in terms of introducing changes to established processes. In a stable environment with no competition, this lack of innovation has little impact. Universities can live quietly, solving problems as they arise. Today it is necessary to limit the autonomy of departments and staff, no matter how paradoxical it may sound. The time of genius personalities has passed. The era of brilliant organizations, teams working together is coming. A clear focus on working in teams, which is an integral part of the philosophy of strategic quality management, allows people to work towards common rather than independent goals.

The process approach involves the design of a quality management system as a set of interrelated processes, while for each process the main characteristics should be provided: inputs, outputs, consumers of each of the processes, their requirements should be identified, and their satisfaction with the results of the process should be studied in the course of the system's activity.

For the effective operation of a set of basic processes, it is necessary to establish ways of interaction between them, to clearly define which material or information objects are the outputs of previous processes and, at the same time, the inputs of subsequent ones. Such a relationship should be determined primarily in order to be able to carry out effective control and measurement of educational processes in order to determine the degree of their compliance with the requirements of consumers.

In a university, the object of study is always a "student" and is at the entrance and exit of the educational process. The task of training: meeting the consistently increasing needs of the student and other consumers of university graduates (employers, the state, etc.). The release of specialists who meet the requirements of modern production, possessing advanced design tools and methods, is one of the main tasks of training modern highly qualified personnel.

The quality of training of specialists is largely determined by the perfection of the equipment used in training, the use of modern information and pedagogical technologies. If the Ministry of Education and Science finances the training of specialists in full, then we can confidently expect that the goals and objectives formulated by the fourth generation Federal State Educational Standard will be achieved. But the constant reorganizations of higher education carried out by the Ministry of Education and Science of the Russian Federation have stumped the best forces of higher education not only in the so-called elite universities of the Russian Federation, as officials from the ministry like to call them, but also in those others, most of which are not baked. What did they want to have in the end? They did not have time to "make a shower of rain" for the funeral of the list of specialties, and the directions of masters and bachelors were born,

Who needs it? Regrettably, there is no intelligible answer to all these questions from the ministry, and this is confirmed by the fact that universities have already begun to issue bachelors and masters, and there are no qualification requirements for them, as well as for specialists who will come to be hired at enterprises and institutions to work. , not.

Who will be responsible for such a situation? Again, it will be passed on to universities that they did not get through, did not decide, did not insist, did not approve, etc. etc. And this is how many times. You might think that the opinion of employees of universities and employers once wanted to hear.

Why did it so easily, for the sake of the Bologna Agreements, we lost independence in assessing the results of our work, when our specialists were reasonably considered the best and demanded by many enterprises, organizations and scientific institutions? Why break what was functioning? First, they destroyed the industry, and then, when there was only a place for specialists in the free labor market, universities were again to blame, that there was not enough engineering personnel, technicians disappeared, but the saddest thing and skilled workers and this whole chain collapsed when highly qualified workers who prepared the so-called SSTU and vocational schools, became qualified middle-level specialists, and already middle-level specialists made up the elite of high school graduates. What about now? Some competencies,

Prime Minister of the USSR A.N. Kosygin, when meeting with the student activists of Moscow universities about their small scholarships (22 - 26 rubles per month), confirmed that this is really insufficient amount. But at the same time he noted that the scholarship can never be sufficient for their normal social protection. But what is now paid to students is, of course, completely insufficient, and the Politburo of the Central Committee of the CPSU decided to increase it for 1st - 3rd year students to 35 rubles per month, and for 4th - 5th year students - respectively up to 40 rubles per month. Delighted with such a turn

of the discussion of the main question, one of the secretaries of the Komsomol committee of the university asked him just one more question - what attitude is formed in society and in you personally, Alexei Nikolaevich, to higher education ?! The answer was immediate - the most positive.

But with regret today you cannot say that about modern leaders, and the negative consequences of such an unjustified policy are already making themselves felt. Therefore, it would be justified for all forms of training to exist and this would be the prerogative of the university - which is preferable for them, taking into account the demand for their graduates. But to monitor this demand, namely: who is better taken by the heads of organizations, industrial enterprises and scientific institutions - specialists, masters or bachelors and based on these results make decisions on adjusting the admission of applicants to the number of students.

But let's get back to the Federal Educational Standards of Higher Professional Education. Who and who called the qualifications "Academic Bachelor" and "Applied Bachelor" - we have no words at all - this is something that needs to be invented?

When it was said about the second stage of a master's degree and two years of study - everyone took heart - instead of five years, in six you can really prepare a specialist of the highest qualification. And the characteristics of professional activity seemed to confirm this intention, namely:

- area of professional activity of masters:
- rational;
- resource-saving, competitive technologies for the design and manufacture of products for the light industry and the fashion industry (leather, fur, clothing, footwear, accessories and other products from different materials).
- objects of professional activity of masters:
- methods and systems for designing garments, footwear, leather, fur, leather goods, technological processes and equipment for their production; normative and technical documentation and standardization systems, methods and means of testing, quality control of materials and products of light industry,
- types of professional activities of masters:
- research;
- production and technological;
- organizational and managerial;
- project and design;
- scientific and pedagogical.

The specific types of professional activities for which the master is mainly prepared are determined by the higher educational institution together with the students, scientific and pedagogical workers of the higher educational institution and associations of employers,

- tasks of professional activity of masters;
- management of the results of research activities and the commercialization of intellectual property rights;
- drawing up work plans and programs for scientific research and technical development, preparation of individual assignments for performers;
- collection, processing, analysis and systematization of scientific and technical information on the research topic, the choice of methods and means for solving the problem;
- conducting patent analysis;
- implementation of the results of research work, innovative technology and advanced technology;
- production and technological activities:
- ensuring the manufacturability of clothing, footwear, leather, fur, leather goods and their manufacturing processes;
- organization of technological preparation of production;
- assessment of the economic efficiency of products and technological processes;
- development of measures for the rational use and replacement of scarce materials for clothing, footwear and leather goods;
- introduction of new materials and technological processes into production for the production of products in accordance with market requirements and industry development trends; research of the causes of defects in production, development of proposals for its prevention and elimination, the choice of systems to ensure the environmental safety of production;
- organizational and management activities:
- organizing the activities of marketing and sales structures for business development, increasing its stability and competitiveness, merchandising of fashion industry products;
- management in terms of a spectrum of opinions, determination of the order of work;
- preparation of applications for inventions and industrial designs of products;
- professional development and training of employees;
- development of plans and programs for organizing innovative activities at the enterprise;
- design and design activities:
- preparation of assignments for the development of project and design solutions;
- preparation of generalized options for solving emerging problems, from analysis,
- forecasting the consequences, finding compromise solutions in conditions of multi-criteria;
- development of sketches, projects of technical specifications, standards, technical descriptions of new products, technological processes and business plans using information technology;
- study and implementation of domestic and foreign experience, development of rationalization and invention;

- assessment of the innovative potential of the project;

- scientific and pedagogical activity:

- performing pedagogical work in educational institutions of secondary vocational and higher vocational education as a teacher and assistant under the guidance of a leading teacher, professor or associate professor in the disciplines of the direction;

- development of teaching materials used by students in the educational process.

And if by this time the ruined branches of the national economy had risen from the ruins, and graduates with the qualification only "Academic Bachelor" could have recruited the branches of departments, which, according to the order of the Ministry of Education and Science No. 958 of 08/14/2013, were to be created on the basis of organizations, carrying out activities in the profile of the relevant educational program, namely:

- the procedure for the creation by professional educational organizations and educational organizations of higher education of departments and other structural units that provide practical training for students, on the basis of other organizations carrying out activities in the profile of the corresponding educational program.

This procedure determines the rules for the creation by professional educational organizations and educational organizations of higher education (hereinafter referred to as educational organizations) departments and other structural units that provide practical training for students (hereinafter referred to as structural units), on the basis of other organizations operating in the profile of the corresponding educational program (further - organization).

Structural units are created for the purpose of practical training of students in the corresponding educational program, through the implementation by the educational organization of a part of the educational program of the corresponding profile, aimed at the formation, consolidation and development of skills and competencies, and including the possibility of conducting all types of training sessions and carrying out scientific activities.

The structural unit in its activities is guided by the Federal Law of December 29 2012 year... No. 273-FZ "On Education in the Russian Federation", other federal laws, regulatory legal acts of the President of the Russian Federation and the Government of the Russian Federation, this Procedure, constituent documents of an educational organization, regulations on a structural unit.

The regulation on the structural unit is approved by agreement with the organization in the manner prescribed by the charter of the educational organization.

A structural unit is created subject to the following conditions:

– compliance of the educational program implemented by the educational organization with the profile of the organization's activities;

– availability of property necessary to achieve the goals of the structural unit;

– ensuring the conduct of practice, practical classes, seminars, laboratory workshops and other types of educational activities, provided for educational activities, provided for by the curriculum, in the structural unit;

– providing organizations with conditions for the preparation of graduate qualification works and other types of work stipulated by the educational program, including participation in the formation of topics of graduation qualification works and other works, provision of scientific guidance and reviewing of graduation qualification works and other works, free provision of access to information to students required for the preparation of final qualifying works;

– creating a safe learning environment;

– observance of special conditions for receiving education by students with disabilities.

Then one would expect that the bachelor will come to his university after 2 - 3 years of highly qualified work for the position of a middle manager or for a workplace requiring a high level of training, with the desire to continue his studies in the magistracy with the corresponding basic educational program - agreed and with the university and with enterprises. Then the role and meanings of the formed competencies are not clear, which are listed in table. 5. We proposed to express their importance for the formation of the quality of training of specialists for schoolchildren - graduates of 11 classes of 2020, bachelors - graduates of the university in 2020, teachers of universities in the Rostov region and specialists - graduates of universities working at light industry enterprises in the regions of the Southern Federal District and the North Caucasus Federal District.

The results of the survey are given in table. 6 - 12 and fig. 1 - 6. They were obtained when processing questionnaires according to the program developed by the authors for processing the results of a priori ranking.

Questionnaire

to assess the most significant competencies in the preparation of masters within the framework of their qualification characteristics formed in the Federal State Educational Standard of Higher Professional Education

You are invited to fill out a questionnaire - a questionnaire, which contains a list of competencies that form the level of training of specialists. We would like to ask you to rank the ranks according to the degree of their importance on the quality of training of these specialists. The peculiarity of the filling is that it is necessary to use the rule of the arithmetic series,

namely: to assign ranks from 1 place to n (the number of competencies n = 19), without missing numbers, but at the same time they should be exactly n = 19, the sequence of ranking - any. It is allowed, in case of your doubt, to assign two or more competencies the same rank - place (related ranks), but at the same time, the rule of the arithmetic series must be fulfilled, i.e. again - from 1st place, but with a smaller number n of the arithmetic series by the number of related ranks.

Example. No linked ranks

Rank	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	2	4	5	19	18	17	14	13	6	11	10	1	3	9	8	7	15	16	12

Example. With related ranks

Rank	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	3	3	3	3	2	2	5	5	4	7	6	1	1	9	10	10	11	8	8
	6,5	6,5	6,5	6,5	3,5	3,5	10,5	10,5	9	13	12	1,5	1,5	16	17,5	17,5	19	14,5	14,5

Since the number of related ranks is 8, then in the arithmetic series from 1 to 19 places will remain 19 - 8 = 11, i.e. there will be only 11 places in the new arithmetic series.

Table 5 - List of indicators for ranking

room	Competence	Rank
PC-1	independently solve the tasks of their professional activities at a modern level	
PC-2	the ability to professionally use modern equipment and assess the economic efficiency of technological processes (in accordance with the objectives of the master's program)	
PC-3	use in-depth knowledge of legal and ethical norms in assessing the consequences of their professional activities, in the development and implementation of socially significant projects	
PC-4	ability analyze the received production information, summarize, systematize the results of production works using modern equipment and technology	
PC-5	readiness to study scientific, technical information, patent documentation and make practical recommendations on its use	
PC-6	use the knowledge of fundamental sciences in research and the creation of new methods for the design of products and processes of light industry	
PC-7	the ability to set research objectives, choose methods of experimental work, interpret and present the results of scientific research in the form of reports, abstracts, publications and in public discussions	
room	Competence	Rank
PC-8	the ability to use modern information technologies for the organization and effective implementation of technological processes for the production of clothing, footwear, leather, fur, accessories and leather goods for various purposes	
PC-9	to develop measures for the integrated use of materials and their replacement with promising ones in the production of light industry products	
PC-10	carry out production control of the stage-by-stage production of parts of products, semi-finished products, conduct standard and certification tests of clothing, footwear, leather goods and materials for them, investigate the causes of defects in production and develop proposals for its prevention and elimination	
PC-11	choose technical means and technologies taking into account the environmental consequences of their use	
PC-12	analyze the technological process as a control object, develop regulatory methodological and production documents	
PC-13	use elements of economic analysis when creating products, taking into account the requirements of quality, reliability and cost	
PC-14	systematize, summarize information on the formation and use of enterprise resources	
PK-15	make management and economic decisions based on a constructive dialogue, taking into account different approaches and opinions in small and large teams of performers on the principles of marketing	

PC-16	to develop design and technological documentation and develop sketches of light industry products, taking into account the constructive and technological, aesthetic, economic, environmental and other parameters	
PC-17	use information technology and computer-aided design systems in the development of new products for light industry	
PK-18	to form students' professional qualities in the chosen direction of training, civic position, attitude to work and life in the conditions of modern civilization and democracy	
PK-19	choose teaching methods and means that ensure high quality of the educational process	

Table 6 - Results of the survey of bachelors - graduates of 2020

Experts	Factors																		
	X1	X2	X3	X4	X5	X6	X7	X8	X9	X 10	X 11	X 12	X 13	X 14	X 15	X 16	X 17	X 18	X 19
1	1	8	4	11	5	13	12	15	7	9	17	9	10	18	2	14	16	16	10
2	6	3	18	4	15	7	8	2	9	1	13	5	11	13	17	12	14	15	16
3	1	2	3	3	2	4	5	6	7	8	4	9	10	11	12	13	14	15	16
4	1	2	3	3	2	4	6	5	7	8	4	9	11	10	13	14	12	15	8
5	6	4	5	11	17	18	12	14	3	14	7	1	2	10	9	13	16	16	18
6	5	4	11	5	6	2	12	14	7	13	15	1	3	17	8	10	9	7	1
7	6	1	17	16	8	9	15	2	14	3	18	4	11	12	13	5	10	13	1
8	5	1	4	2	7	8	9	1	5	2	10	3	11	12	6	4	10	13	19
9	1	5	2	3	6	8	4	10	18	11	15	7	14	17	9	12	16	19	6
10	8	2	9	3	10	11	4	5	12	7	13	1	14	17	18	15	16	12	12
11	2	8	13	3	9	10	7	3	4	6	10	1	11	14	5	13	11	17	18
12	1	6	2	3	4	5	7	9	8	10	11	12	13	14	15	16	16	15	7
13	1	9	2	3	13	4	6	10	17	13	16	14	11	12	18	5	8	5	15
14	1	6	11	7	16	8	12	2	13	3	9	18	17	14	19	4	10	19	17
15	2	1	3	5	6	4	9	7	8	11	15	16	14	12	18	13	10	18	16
16	1	6	4	5	3	2	9	7	8	11	14	10	12	17	19	15	13	18	13
17	1	6	12	10	3	2	9	7	8	11	5	19	4	16	17	14	15	6	3

Table 7 - The results of processing the a priori ranking of bachelors - graduates of 2020 according to the assessment of the importance of competencies that form the level of quality of training of future specialists

Expert	**Factor**																			
	X1	**X2**	**X3**	**X4**	**X5**	**X6**	**X7**	**X8**	**X9**	**X 10**	**X 11**	**X 12**	**X 13**	**X 14**	**X 15**	**X 16**	**X 17**	**X 18**	**X 19**	**Tj**	**QC**
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	1	8	4	12	5	14	13	16	7	9,5	18	9,5	11	19	2	15	17	6	3	6	0,49
2	6	3	19	4	16	7	8	2	9	1	13,5	5	11	13,5	18	12	15	17	10	6	0,63
3	1	2,5	4,5	4,5	2,5	6,5	8	9	10	11	6,5	12	13	14	15	16	17	18	19	18	0,91
4	1	2,5	4,5	4,5	2,5	6,5	9	8	10	11	6,5	12	14	13	16	17	15	18	19	18	0,91
5	6	4	5	11	18	19	12	14,5	3	14,5	7	1	2	10	9	13	17	16	8	6	0,40
6	5,5	4	12	5,5	7	2	13	15	8	14	16	1	3	18	9	11	10	17	19	6	0,73
7	7	1,5	18	17	9	10	16	3	15	4	19	5	12	13	14	6	11	8	1,5	6	0,44
8	9,5	2	7,5	4,5	12	13	14	2	9,5	4,5	15,5	6	17	18	11	7,5	15,5	19	2	48	0,55
9	1	5	2	3	6	8	4	10	18	11	15	7	14	17	9	12	16	13	19	0	0,91
10	8	2	9	3	10	11	4	5	12	7	13	1	14	17	18	15	16	19	6	0	0,80
11	2	9	17,5	3,5	10	11,5	8	3,5	5	7	11,5	1	13,5	19	6	17,5	13,5	15,5	15,5	30	0,67
12	1	6	2	3	4	5	7	9	8	10	11	12	13	14	15	16,5	16,5	18	19	6	0,91
13	1	9	2	3	13,5	4	6	10	18	13,5	17	15	11	12	19	5	8	16	7	6	0,59
14	1	6	11	7	16	8	12	2	13	3	9	18	17	14	19	4	10	5	15	0	0,52

15	2	1	3	5	6	4	9	7	8	11	15	16	14	12	18	13	10	19	17	0	0,91
16	1	6	4	5	3	2	9	7	8	11	14	10	12	17	19	15	13	18	16	0	0,91
17	1	6	12	10	3	2	9	7	8	11	5	19	4	16	17	14	15	18	13	0	0,86
																				156	
Rank sums	55	77,5	137	105,5	143,5	133,5	161	130	169,5	154	212,5	150,5	195,5	256,5	234	209,5	235,5	260,5	209		
Sum of ranks without heretics	6	18	18	22	18	24	42	40	44	54	53	62	66	70	83	77,5	71,5	91	90		
The importance of competence	1	2	6	3	7	5	10	4	11	9	15	8	12	18	16	14	17	19	13		
The Significance of Competence Without Heretics	1	2	3	5	4	6	8	7	9	11	10	12	13	14	17	16	15	19	18		
Coef. concordations		0,37		0,91																	
Crete. Pearson		113,42		24,31																	

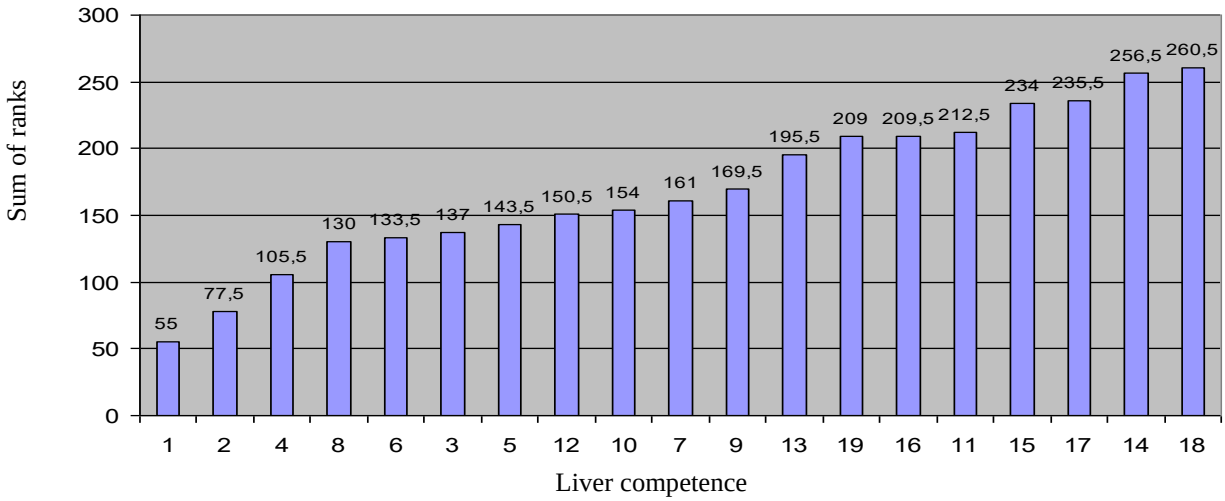

Fig. 1. Characteristics of the importance of competencies that form the level of quality of training of specialists, expressed by bachelors - graduates of 2021

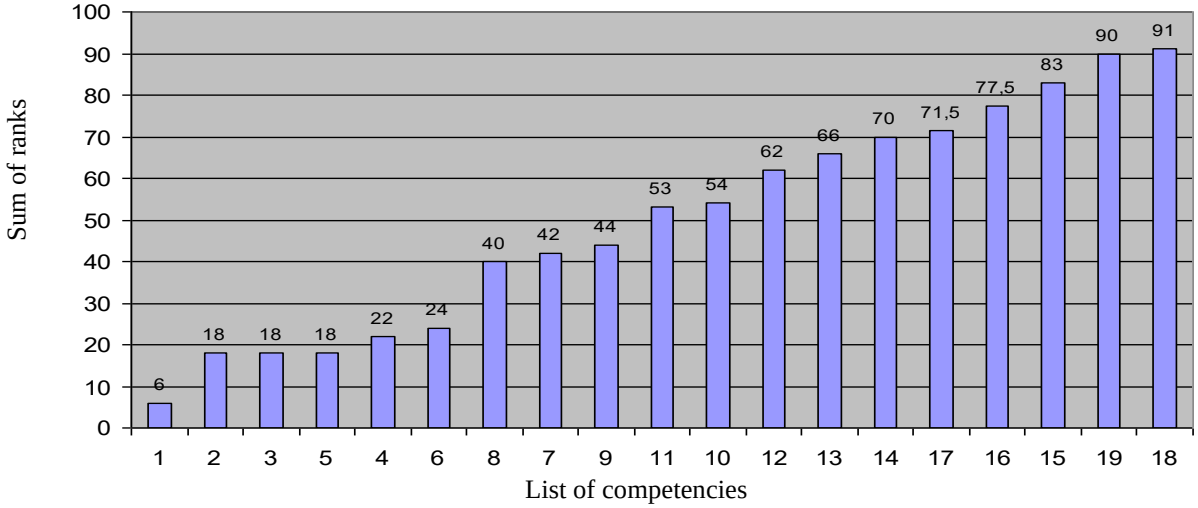

Fig. 2. Characteristics of the importance of competencies that form the level of quality of training of specialists, expressed by bachelors - graduates of 2021, but without heretics, i.e. whose opinion differs significantly from the larger number of respondents participating in the survey

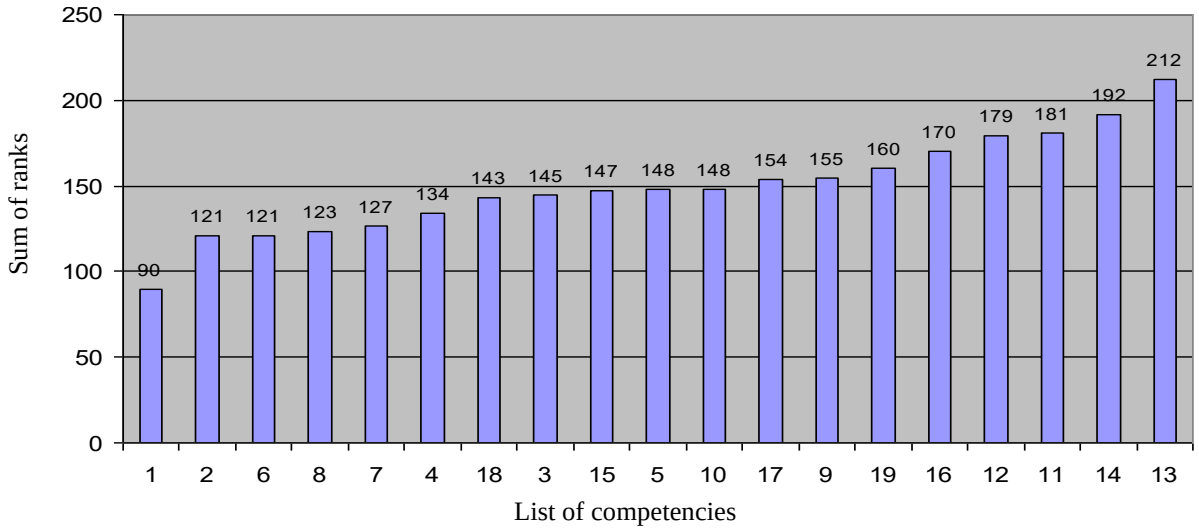

Fig. 3. Characteristics of the importance of competencies that form the level of quality of training of specialists, expressed by schoolchildren - graduates of the 11th grade of 2021

Table 8 - The results of the survey of schoolchildren - graduates of the 11th grade in 2021

Experts	Factors																		
	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19
1	11	13	15	1	10	2	8	5	9	7	12	4	17	16	19	14	3		
2	7	11	19	14	2	16	3	15	1	12	18	5	17	9	4	8	6	18	6
3	4	5	7	8	16	17	3	9	10	1	19	14	18	6	2	11	15	10	13
4	13	6	14	5	15	4	7	16	11	12	1	19	17	18	10	8	9	13	12
5	5	3	11	14	17	8	13	1	16	4	18	9	12	19	2	15	6	3	2
6	14	17	18	19	16	15	13	8	12	7	1	11	6	5	4	3	10	10	7
7	13	1	2	5	9	6	14	7	15	10	11	17	18	16	8	3	12	2	9
8	3	1	2	4	7	6	5	8	10	9	12	11	14	15	13	19	17	4	19
9	1	7	15	11	6	2	8	12	3	14	5	16	4	19	10	17	18	16	18
10	1	3	2	5	4	6	7	9	10	14	18	8	19	13	15	16	12	13	9
11	9	11	4	2	15	5	10	1	14	7	16	18	13	17	19	6	12	11	17
12	1	4	3	5	2	6	10	11	9	15	12	17	19	8	13	18	7	8	3
13	1	17	12	16	9	14	18	2	15	11	13	3	19	10	4	8	5	14	16
14	2	10	18	16	9	13	6	3	14	7	8	19	4	17	11	5	15	6	7
15	5	12	3	9	11	1	2	16	6	18	17	8	15	4	13	19	7	1	12

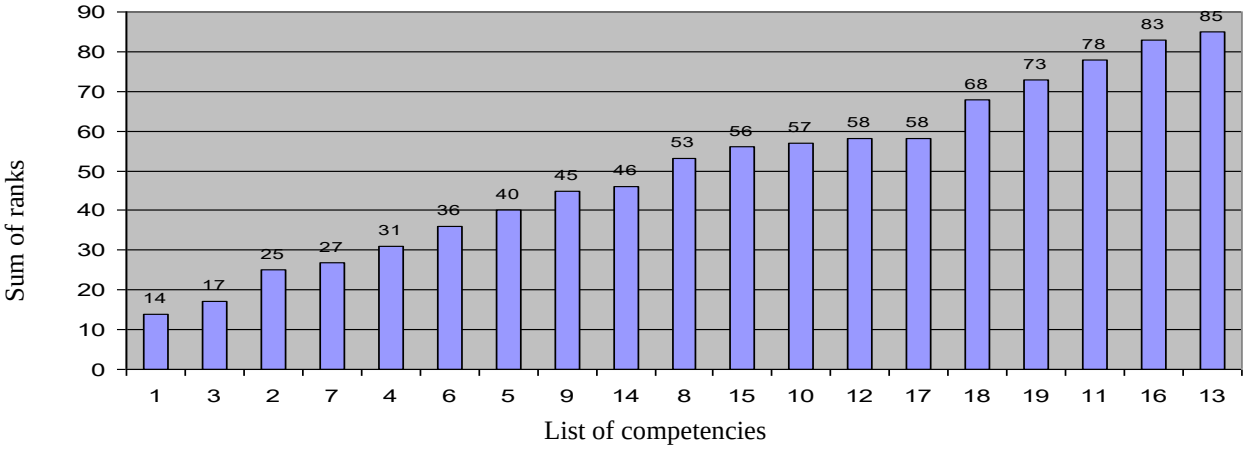

Fig. 4. Characteristics of the importance of competencies, which form the level of quality of training of specialists, expressed by schoolchildren - graduates of the 11th grade of 2021, but without heretics, i.e. whose opinion differs significantly from the larger number of respondents participating in the survey

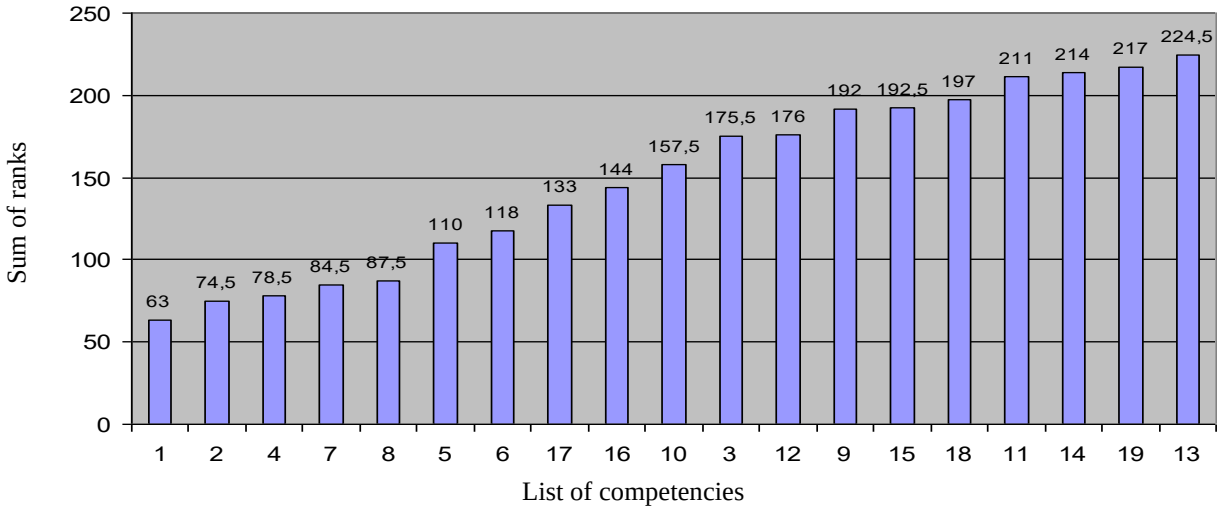

Fig. 5. Characteristics of the importance of competencies that form the level of quality of training of specialists, expressed by teachers of universities in the Rostov region

Table 9. Results of processing the a priori ranking of schoolchildren - graduates of grade 11 in 2021

Expert	Factor																				
	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19	Tj	QC
1	11	13	15	1	10	2	8	5	9	7	12	4	17	16	19	14	3	18	6	0	0,43
2	7	11	19	14	2	16	3	15	1	12	18	5	17	9	4	8	6	10	13	0	0,19
3	4	5	7	8	16	17	3	9	10	1	19	14	18	6	2	11	15	13	12	0	0,59
4	13	6	14	5	15	4	7	16	11	12	1	19	17	18	10	8	9	3	2	0	0,30
5	5	3	11	14	17	8	13	1	16	4	18	9	12	19	2	15	6	10	7	0	0,38
6	14	17	18	19	16	15	13	8	12	7	1	11	6	5	4	3	10	2	9	0	0,17
7	13	1	2	5	9	6	14	7	15	10	11	17	18	16	8	3	12	4	19	0	0,59
8	3	1	2	4	7	6	5	8	10	9	12	11	14	15	13	19	17	16	18	0	0,59
9	1	7	15	11	6	2	8	12	3	14	5	16	4	19	10	17	18	13	9	0	0,34
10	1	3	2	5	4	6	7	9	10	14	18	8	19	13	15	16	12	11	17	0	0,59
11	9	11	4	2	15	5	10	1	14	7	16	18	13	17	19	6	12	8	3	0	0,50
12	1	4	3	5	2	6	10	11	9	15	12	17	19	8	13	18	7	14	16	0	0,59
13	1	17	12	16	9	14	18	2	15	11	13	3	19	10	4	8	5	6	7	0	0,22
14	2	10	18	16	9	13	6	3	14	7	8	19	4	17	11	5	15	1	12	0	0,26
15	5	12	3	9	11	1	2	16	6	18	17	8	15	4	13	19	7	14	10	0	0,59
																				0	
Rank sums	90	121	145	134	148	121	127	123	155	148	181	179	212	192	147	170	154	143	160		
Rank sums without heretics	14	25	17	31	40	36	27	53	45	57	78	58	85	46	65	83	58	68	73		
The importance of competence	1	2	8	6	10	3	5	4	13	11	17	16	19	18	9	15	12	7	15		

The Significance of Competence Without Heretics	1	3	2	5	7	6	4	10	8	12	17	13	19	9	11	18	14	15	16		
Coefficient of concordance		0,12		0,59																	
Crete. Pearson		31,24		17,71																	

Table 10. Results of the questionnaire survey of university professors in the Rostov region

Experts	Factors																		
	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19
1	11	10	14	2	3	4	1	5	17	6	16	7	15	12	13	8	9	18	19
2	2	4	10	6	8	1	5	3	14	15	16	17	18	12	9	11	7	13	19
3	1	5	10	3	11	2	6	4	14	15	17	18	12	13	9	7	8	16	19
4	2	1	8	10	13	9	4	11	16	5	19	15	17	18	12	6	7	14	3
5	1	2	5	4	1	6	3	3	4	7	8	7	9	8	8	3	2	1	2
6	16	6	15	7	4	5	1	1	9	3	10	2	18	11	17	12	8	13	14
7	1	3	6	2	10	4	11	5	16	17	6	12	13	18	15	14	8	9	7
8	1	3	2	7	18	13	12	5	8	6	14	15	16	17	19	10	4	11	9
9	1	4	18	5	2	6	9	7	16	14	17	10	15	11	13	12	8	3	19
10	1	3	17	4	2	8	5	6	16	14	18	10	11	15	12	13	7	9	19
11	1	6	15	3	4	2	5	11	9	13	16	8	12	10	17	7	14	18	19
12	6	8	7	5	10	9	2	4	18	1	12	13	15	19	3	16	17	14	11
13	1	4	16	9	15	17	8	6	7	5	14	11	12	13	3	2	10	18	19
14	12	7	14	2	3	13	1	5	9	10	7	9	11	8	11	4	6	15	16
15	1	4	7	2	3	8	5	6	9	15	10	11	16	17	18	12	13	19	14

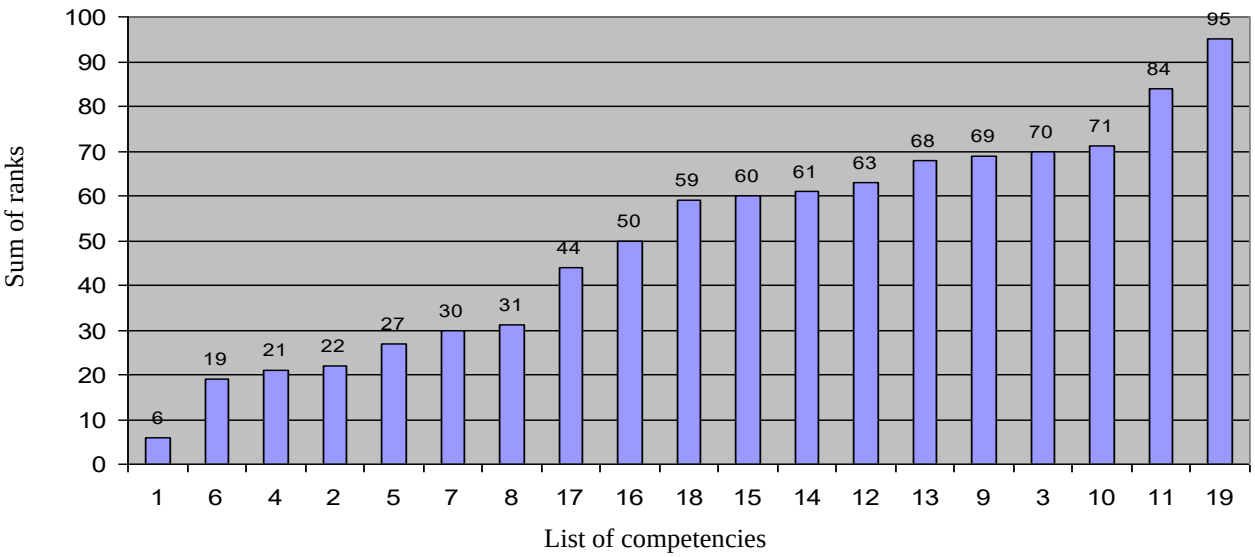

Fig. 6. Characteristics of the importance of competencies that form the level of quality of training of specialists, expressed by teachers of higher educational institutions of the Rostov region, but without heretics, ie. whose opinion differs significantly from the larger number of respondents participating in the survey

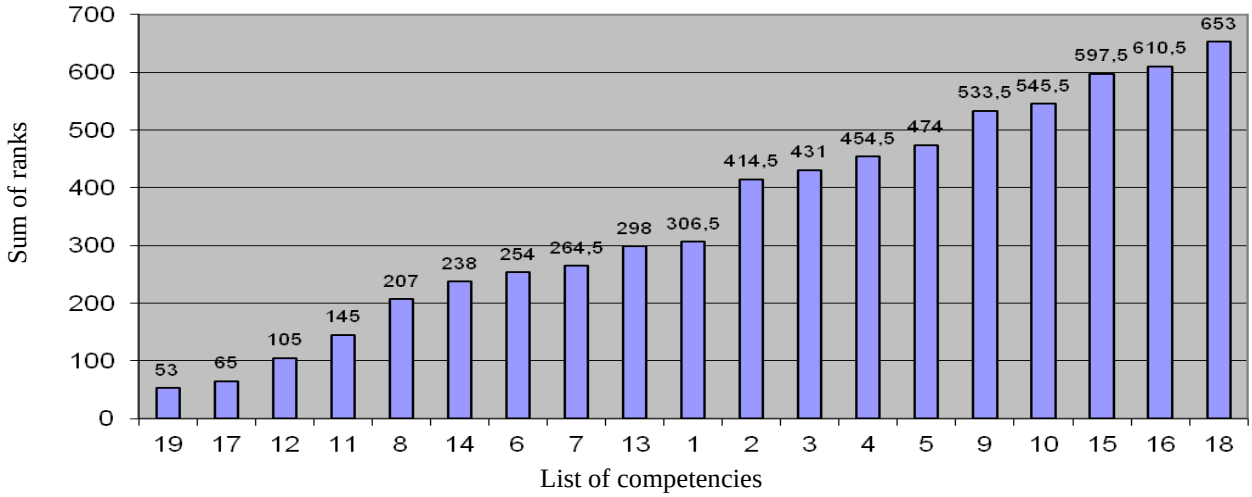

Fig. 7. Characteristics of the importance of competencies that form the level of quality of training of specialists, expressed by specialists - graduates of universities working at light industry enterprises in the regions of the Southern Federal District and the North Caucasus Federal District

Table 11 - The results of processing the a priori ranking of teachers of higher educational institutions of the Rostov region

Expert	Factor																				
	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19	Tj	QC
1	11	10	14	2	3	4	1	5	17	6	16	7	15	12	13	8	9	18	19	0	0,73
2	2	4	10	6	8	1	5	3	14	15	16	17	18	12	9	11	7	13	19	0	0,77
3	1	5	10	3	11	2	6	4	14	15	17	18	12	13	9	7	8	16	19	0	0,77
4	2	1	8	10	13	9	4	11	16	5	19	15	17	18	12	6	7	14	3	0	0,53
5	2	5	12	10,5	2	13	8	8	10,5	14,5	17	14,5	19	17	17	8	5	2	5	108	0,56
6	17	7	16	8	5	6	1,5	1,5	10	4	11	3	19	12	18	13	9	14	15	6	0,65
7	1	3	6,5	2	11	4	12	5	17	18	6,5	13	14	19	16	15	9	10	8	6	0,60
8	1	3	2	7	18	13	12	5	8	6	14	15	16	17	19	10	4	11	9	0	0,47
9	1	4	18	5	2	6	9	7	16	14	17	10	15	11	13	12	8	3	19	0	0,77
10	1	3	17	4	2	8	5	6	16	14	18	10	11	15	12	13	7	9	19	0	0,77
11	1	6	15	3	4	2	5	11	9	13	16	8	12	10	17	7	14	18	19	0	0,77
12	6	8	7	5	10	9	2	4	18	1	12	13	15	19	3	16	17	14	11	0	0,50
13	1	4	16	9	15	17	8	6	7	5	14	11	12	13	3	2	10	18	19	0	0,45
14	15	7,5	17	2	3	16	1	5	10,5	12	7,5	10,5	13,5	9	13,5	4	6	18	19	18	0,71
15	1	4	7	2	3	8	5	6	9	15	10	11	16	17	18	12	13	19	14	0	0,77
																				138	
Rank sums	63	74,5	175,5	78,5	110	118	84,5	87,5	192	157,5	211	176	224,5	214	192,5	144	133	197	217		
Rank sums without heretics	6	23	70	21	27	19	30	31	69	71	84	63	68	61	60	50	44	59	95		
The importance of competence	1	2	11	3	6	7	4	5	13	10	16	12	19	17	14	9	8	15	18		
The Significance of Competence Without Heretics	1	4	16	3	5	2	6	7	15	17	18	13	14	12	11	9	8	10	19		
Coef. concordations		0,43		0,77																	
Crete. Pearson		115,0		23,2																	

Table 12 - Results of the survey of specialists - university graduates working at light industry enterprises of the regions of the Southern Federal District and the North Caucasus Federal District

Experts	Factors																		
	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19
1	7	8	8	8	8	5	6	5	9	9	4	1	8	7	10	10	3	10	2
2	6	8	9	8	8	5	6	5	10	10	4	3	8	7	11	11	1	11	2
3	6	8	8	8	8	5	5	4	9	9	3	1	8	7	10	10	2	11	1
4	5	8	9	8	8	6	6	4	10	10	3	2	7	5	11	11	1	12	1
5	6	8	7	8	8	5	5	4	9	9	3	3	7	6	10	10	1	11	2
6	5	8	8	9	8	6	6	3	10	10	2	2	7	4	11	12	1	13	2
7	6	8	7	8	9	5	5	3	10	11	2	2	7	4	12	13	1	14	1
8	7	8	8	8	8	7	7	4	8	8	3	4	6	5	8	8	1	8	2
9	6	7	8	8	9	5	5	4	9	9	3	4	7	6	10	10	2	11	1
10	7	8	7	8	8	6	5	4	9	9	4	1	7	4	10	10	3	11	2
11	6	8	8	8	8	7	7	5	8	8	4	3	8	6	9	9	2	10	1
12	5	6	6	6	6	5	5	4	6	6	4	3	5	4	7	7	2	7	1
13	7	8	8	8	8	4	5	6	8	8	4	3	6	5	8	8	2	8	1
14	6	7	7	7	7	4	5	4	8	8	3	4	6	5	7	7	2	8	1
15	7	8	9	10	11	5	4	4	12	13	3	3	6	5	14	15	1	16	2
16	6	8	9	11	10	7	7	4	13	12	3	3	5	5	15	14	1	16	2
17	6	7	8	8	9	4	4	5	10	11	3	2	5	6	12	12	1	13	1
18	6	9	10	11	12	8	7	4	13	14	3	1	5	5	15	16	2	17	2
19	6	7	8	9	9	4	4	4	10	11	3	2	5	5	12	12	1	13	1
20	6	7	8	9	10	5	4	4	11	12	3	2	4	5	13	14	2	15	1
21	5	9	9	10	10	7	8	5	11	12	6	3	4	4	13	14	2	15	1
22	6	7	8	9	10	4	6	5	11	12	4	3	5	5	13	14	2	15	1
23	6	8	7	10	9	4	4	4	11	12	2	3	5	4	14	13	1	15	1
24	5	8	9	10	11	6	7	4	12	13	3	1	4	3	14	15	2	16	2
25	6	7	7	8	8	4	4	5	9	9	3	2	4	3	10	10	1	11	1
26	6	7	8	9	10	5	4	5	11	12	3	2	6	5	13	14	1	15	1
27	7	8	10	9	11	6	6	4	13	12	3	1	5	5	12	13	1	14	2
28	6	8	9	10	11	7	7	4	12	12	3	2	5	6	13	13	2	14	1
29	5	8	9	10	11	6	7	4	11	11	3	3	6	5	12	12	2	13	1
30	5	8	8	8	8	4	4	4	9	9	7	3	6	5	10	10	2	11	1
31	7	8	9	10	11	4	4	5	12	13	3	3	6	5	14	15	2	16	1
32	6	7	7	7	8	5	5	4	9	10	3	3	4	4	11	12	2	13	1
33	7	8	9	8	9	4	4	4	10	10	3	3	5	6	11	11	2	12	1
34	5	6	7	8	9	4	5	5	10	11	3	3	4	3	12	13	2	14	1
35	5	6	7	8	9	4	4	4	10	11	3	3	4	3	12	13	2	14	1

Table 13 - Characteristics of the results of the survey of schoolchildren-graduates of 2021, graduates - bachelors of the university, teachers of higher educational institutions of the Rostov region and specialists - graduates of the university, working at light industry enterprises of the regions of the Southern Federal District and the North Caucasus Federal District by the importance of competencies that form the quality of education

Significant Competencies Considering Heretics							
Pupils	**1**	**2**	**6**	**8**	**7**	**4**	18
University graduates	**1**	**2**	**4**	**8**	**6**	3	**5**
Teachers	**1**	**2**	**4**	**7**	**8**	**5**	**6**
Specialists	**19**	**17**	**12**	**11**	**8**	**14**	**6**

Significant competences without heretics							
Pupils	**1**	**3**	**2**	**7**	**4**	**6**	**5**
University graduates	**1**	**2**	**3**	**5**	**4**	**6**	**8**
Teachers	**1**	**6**	**4**	**2**	**5**	**7**	**8**
Specialists	**17**	**19**	**12**	**11**	**7**	**6**	**8**

Insignificant competences considering heretics							
Pupils	**9**	**19**	**16**	**12**	**11**	**14**	**13**
University graduates	**19**	**16**	**11**	**15**	17	**14**	**18**
Teachers	**12**	**9**	**15**	**18**	**11**	**19**	**13**
Specialists	**18**	**16**	**15**	**10**	**9**	**5**	**4**

Insignificant competences without heretics							
Pupils	**12**	**17**	**18**	**19**	**11**	16	**13**
University graduates	**13**	14	**17**	**15**	**15**	**19**	**18**
Teachers	**12**	**13**	9	3	10	**11**	**19**
Specialists	**18**	**16**	**15**	**10**	**9**	**5**	**4**

Table 14 - The results of processing the a priori ranking of specialists - university graduates working at light industry enterprises in the regions of the Southern Federal District and the North Caucasus Federal District

Expert	Factor																			
	X1	**X2**	**X3**	**X4**	**X5**	**X6**	**X7**	**X8**	**X9**	**X 10**	**X 11**	**X 12**	**X 13**	**X 14**	**X 15**	**X 16**	**X 17**	**X 18**	**X 19**	**Tj**	**QC**
1	8,5	12	12	12	12	5,5	7	5,5	15,5	15,5	4	1	12	8,5	18	18	3	18	2	162	0,97
2	7,5	11,5	14	11,5	11,5	5,5	7,5	5,5	15,5	15,5	4	3	11,5	9	18	18	1	18	2	102	0,97
3	8	12	12	12	12	6,5	6,5	5	15,5	15,5	4	1,5	12	9	17,5	17,5	3	19	1,5	144	0,97
4	6,5	12	14	12	12	8,5	8,5	5	15,5	15,5	4	3	10	6,5	17,5	17,5	1,5	19	1,5	54	0,97
5	8,5	13	10,5	13	13	6,5	6,5	5	15,5	15,5	3,5	3,5	10,5	8,5	17,5	17,5	1	19	2	60	0,99
6	7	12	12	14	12	8,5	8,5	5	15,5	15,5	3	3	10	6	17	18	1	19	3	60	0,98
7	9	12,5	10,5	12,5	14	7,5	7,5	5	15	16	3,5	3,5	10,5	6	17	18	1,5	19	1,5	30	0,99
8	9	15	15	15	15	9	9	4,5	15	15	3	4,5	7	6	15	15	1	15	2	750	0,96
9	8,5	10,5	12,5	12,5	15	6,5	6,5	4,5	15	15	3	4,5	10,5	8,5	17,5	17,5	2	19	1	60	0,99
10	10	13	10	13	13	8	7	5	15,5	15,5	5	1	10	5	17,5	17,5	3	19	2	84	0,97
11	6,5	13	13	13	13	8,5	8,5	5	13	13	4	3	13	6,5	17,5	17,5	2	19	1	354	0,97
12	8,5	13,5	13,5	13,5	13,5	8,5	8,5	5	13,5	13,5	5	3	8,5	5	18	18	2	18	1	318	0,97
13	10	15	15	15	15	4,5	6,5	8,5	15	15	4,5	3	8,5	6,5	15	15	2	15	1	738	0,96
14	9,5	13,5	13,5	13,5	13,5	5	7,5	5	18	18	3	5	9,5	7,5	13,5	13,5	2	18	1	270	0,96
15	10	11	12	13	14	7,5	5,5	5,5	15	16	3,5	3,5	9	7,5	17	18	1	19	2	18	0,995
16	8	11	12	14	13	9,5	9,5	5	16	15	3,5	3,5	6,5	6,5	18	17	1	19	2	18	0,98
17	9,5	11	12,5	12,5	14	5,5	5,5	7,5	15	16	4	3	7,5	9,5	17,5	17,5	1,5	19	1,5	36	0,995
18	8	11	12	13	14	10	9	5	15	16	4	1	6,5	6,5	17	18	2,5	19	2,5	12	0,97
19	10	11	12	13,5	13,5	6	6	6	15	16	4	3	8,5	8,5	17,5	17,5	1,5	19	1,5	48	0,995
20	10	11	12	13	14	8,5	6	6	15	16	4	2,5	6	8,5	17	18	2,5	19	1	36	0,99
21	6,5	11,5	11,5	13,5	13,5	9	10	6,5	15	16	8	3	4,5	4,5	17	18	2	19	1	24	0,96
22	9,5	11	12	13	14	4,5	9,5	7	15	16	4,5	3	7	7	17	18	2	19	1	36	0,98
23	10	12	11	14	13	6,5	6,5	6,5	15	16	3	4	9	6,5	18	17	1,5	19	1,5	66	0,99
24	8	11	12	13	14	9	10	6,5	15	16	4,5	1	6,5	4,5	17	18	2,5	19	2,5	18	0,97
25	10	11,5	11,5	13,5	13,5	7	7	9	15,5	15,5	4,5	3	7	4,5	17,5	17,5	1,5	19	1,5	60	0,98
26	9,5	11	12	13	14	7	5	7	15	16	4	3	9,5	7	17	18	1,5	19	1,5	36	0,995

27	10	11	13	12	14	8,5	8,5	5	17,5	15,5	4	1,5	6,5	6,5	15,5	17,5	1,5	19	3	30	0,97
28	7,5	11	12	13	14	9,5	9,5	5	15,5	15,5	4	2,5	6	7,5	17,5	17,5	2,5	19	1	30	0,98
29	6,5	11	12	13	15	8,5	10	5	15	15	3,5	3,5	8,5	6,5	17,5	17,5	2	19	1	48	0,98
30	7,5	12,5	12,5	12,5	12,5	5	5	5	15,5	15,5	10	3	9	7,5	17,5	17,5	2	19	1	102	0,97
31	10	11	12	13	14	5,5	5,5	7,5	15	16	3,5	3,5	9	7,5	17	18	2	19	1	18	0,995
32	10	12	12	12	14	8,5	8,5	6	15	16	3,5	3,5	6	6	17	18	2	19	1	60	0,99
33	10	11,5	13,5	11,5	13,5	6	6	6	15,5	15,5	3,5	3,5	8	9	17,5	17,5	2	19	1	54	0,99
Expert	**Factor**																				
	X1	**X1**	**X1**	**X1**	**X1**	**X1**	**X1**	**X1**	**X1**	**X1**	**X1**	**X1**	**X1**	**X1**	**X1**	**X1**	**X1**	**X1**	**X1**	**X1**	**X1**
34	9	11	12	13	14	6,5	9	9	15	16	4	4	6,5	4	17	18	2	19	1	54	0,97
35	10	11	12	13	14	7,5	7,5	7,5	15	16	4	4	7,5	4	17	18	2	19	1	84	0,98
Rank sums	306,5	414,5	431	454,5	474	254	264,5	207	533,5	545,5	145	105	298	238	597,5	610,5	65	653	53		
Sum of ranks without heretics	49	55	60,5	65	69,5	31,5	27,5	33,5	75	80	19	16	43,5	40	86	89	7,5	95	7,5		
The importance of competence	10	11	12	13	14	7	8	5	14	16	4	3	9	6	17	18	2	18	1		
The importance of competence without heretics.	10	11	12	13	14	6	5	7	15	16	4	3	9	8	17	18	1	18	2		
Coefficient concordations		0,95		0,995																	
Crete. Pearson		601,61		12,73																	

Table 15 - The sums of the ranks formed for the competencies, which were obtained according to the results of a survey of schoolchildren - graduates of the 11th grade of 2019, bachelors - graduates of the university in 2021, teachers of universities in the Rostov region and specialists - graduates of the university working at light industry enterprises in the regions of the Southern Federal District and the North Caucasus Federal District

Factors	Competence of professional activity																			W_1	W_2
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
Sums of ranks of graduates - schoolchildren	55	77,5	137	105,5	143,5	133,5	161	130	169,5	154	212,5	150,5	195,5	256,5	234	209,5	235,5	260,5	209	0.12	0.59
Rank sums for university graduates	90	121	145	134	148	121	123	127	123	155	148	181	179	212	192	147	170	154	143	0.37	0.91
Sums of ranks of university professors	63	74,5	175,5	78,5	110	118	84,5	87,5	192	157,5	211	176	224,5	214	192,5	144	133	197	217	0.43	0.77
The sum of the ranks of specialists working at light industry enterprises	306,5	414,5	431	454,5	474	254	264,5	207	533,5	545,5	145	105	298	238	597,5	610,5	65	653	53	0.95	0.995

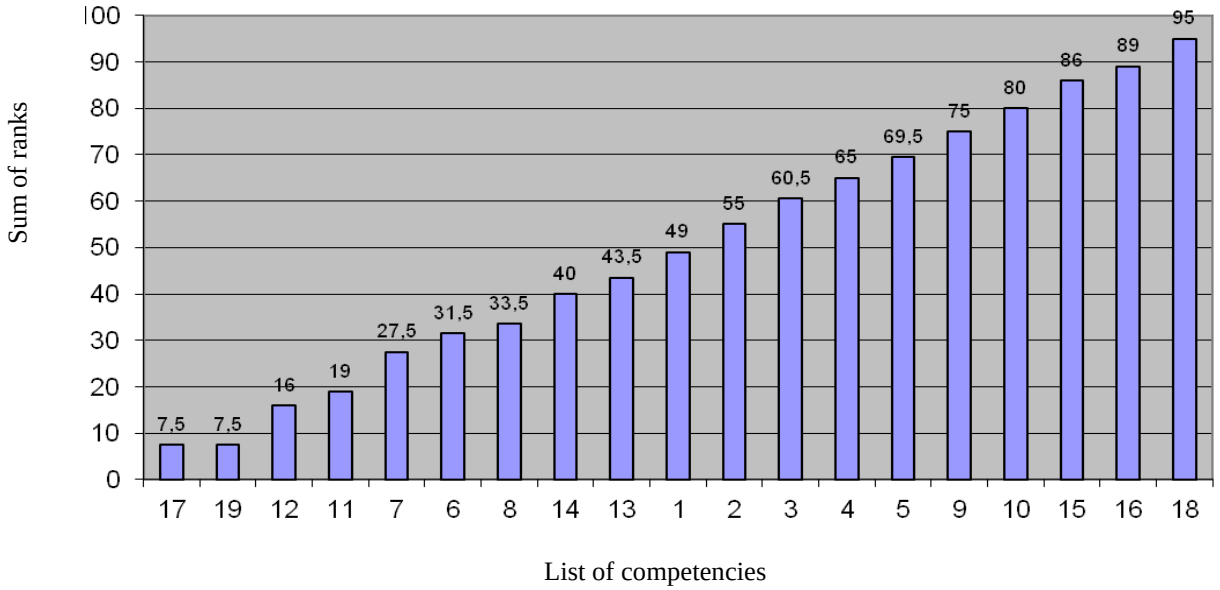

Fig. 8. Characteristics of the importance of competencies that form the level of quality of training of specialists, expressed by specialists graduates of universities working at light industry enterprises of the Southern Federal District and the North Caucasus Federal District, but without heretics, that is, whose opinion differs significantly from the larger number of respondents participating in the survey

If you look at the results of a survey of schoolchildren - graduates, university graduates and teachers, an interesting pattern can be traced, namely:

- there is no consistency between the survey participants, about the degree of importance of the competencies presented to the formation of the quality of training (the concordance coefficient does not exceed 0.5, and for schoolchildren-graduates, in general, it is 0.2, which indicates a lack of consistency between them on the problem under study);

- the list of competencies assigned by them to the category of significant and insignificant coincide, their choice was made randomly, depending on the place he occupied in the questionnaire, if they were mixed and rearranged, then the result of the questionnaire would be completely different;

- the lack of profound knowledge of the survey participants about the state of affairs in the sectors of the national economy of Russia, about their level of equipment with modern innovative equipment, provoked the respondents to be indifferent to those competencies that, in the opinion of the developers, should have been significant for the formation of highly qualified specialists, and this Did not work out. The efforts of the media that light industry is generally not needed for modern Russia has further exacerbated their negative attitude to these competencies. Yes, most of these problems are provoked by the depressing state of these very light industry enterprises, the low culture of advertising itself about the advantages of production activities at these enterprises in comparison with other types of offered labor activities, and if we take into account,

Of course, the family can be blamed for the fact that children are incorrectly oriented about the realities of life, but society itself is largely responsible for a biased assessment of the real state of affairs in the education system, does not take an objectively active, offensive life position, which led to a lack of information and the knowledge of schoolchildren about the real state of affairs and the possibility of an informed choice of their future profession.

Today, all this is still provoked by the incorrectness of the decision of the Ministry of Education and Science on the introduction of compulsory USE in disciplines, among which for technical specialties the exam in physics is approved as a mandatory exam, the teaching of which today in secondary schools is humiliating at a low level, or is absent altogether. The only fault in this is in secondary schools and teacher training colleges, whose graduates do not want to work in schools. The situation is similar with doctors, educators in childcare facilities, communications workers and other industries due to their low demand and low salaries. Unwillingness to see, and even more so to solve these problems by the government has already provoked an engineering crisis, and inviting foreign specialists to our living conditions is an even greater crime, because they do not and cannot have the desire to make a significant contribution to the development of our sectors of the national economy. And this is already being confirmed that there is no one to work at the most advanced enterprises equipped with the most modern multifunctional and universal equipment, and this is at such a level of unemployment in the country. And it's sad that no one is responsible for such a state

of affairs, but on the contrary, everything is being done to destroy the higher school with such an abundance of PLOs that do not carry anything but harm to education, squeezing out the most talented part of the teaching staff from the higher school that and provokes a low level of training of specialists for the most socially significant industries - teachers, doctors, engineers, highly qualified workers and middle managers who know and want to work at home, and not to be outcasts and flee abroad in search of means of subsistence, agreeing to any and most often not qualified work. In Portugal, Spain, Italy, France, Switzerland, Austria, there are already whole towns of Russians who clean the streets, wash and lick the local population, take care of the sick, work as governesses only because there is a demand for these types and you can earn the minimum that allows them to live, not exist. But we cannot do it at home, and the saddest thing is that we don't want to do it, assuming that all this is not about us. It is so convenient, but to whom and who will be responsible for this and will it be - a big question? Or it will again be a "voice in the desert", which is a pity - after all, this is the fate of our children and grandchildren, and by and large - the fate of our country. agreeing to any and most often not qualified work. In Portugal, Spain, Italy, France, Switzerland, Austria, there are already whole towns of Russians who clean the streets, wash and lick the local population, take care of the sick, work as governesses only because there is a demand for these types and you can earn the minimum that allows them to live, not exist. But we cannot do it at home, and the saddest thing is that we don't want to do it, assuming that all this is not about us. It is so convenient, but to whom and who will be responsible for this and will it be - a big question? Or it will again be a "voice in the desert", which is a pity - after all, this is the fate of our children and grandchildren, and by and large - the fate of our country. agreeing to any and most often not qualified work. In Portugal, Spain, Italy, France, Switzerland, Austria, there are already whole towns of Russians who clean the streets, wash and lick the local population, take care of the sick, work as governesses only because there is a demand for these types and you can earn the minimum that allows them to live, not exist. But we cannot do it at home, and the saddest thing is that we don't want to do it, assuming that all this is not about us. It is so convenient, but to whom and who will be responsible for this and will it be - a big question? Or it will again be a "voice in the desert", which is a pity - after all, this is the fate of our children and grandchildren, and by and large - the fate of our country. they wash and lick the local population, take care of the sick, work as governesses only because there is a demand for these species and it is possible to earn the minimum that allows them to live and not exist. But we cannot do it at home, and the saddest thing is that we don't want to do it, assuming that all this is not about us. It is so convenient, but to whom and who will be responsible for this and will it be - a big question? Or it will again be a "voice in the desert", which is a pity - after all, this is the fate of our children and grandchildren, and by and large - the fate of our country. they wash and lick the local population, take care of the sick, work as governesses only because there is a demand for these species and it is possible to earn the minimum that allows them to live and not exist. But we cannot do it at home, and the saddest thing is that we don't want to do it, assuming that all this is not about us. It is so convenient, but to whom and who will be responsible for this and will it be - a big question? Or it will again be a "voice in the desert", which is a pity - after all, this is the fate of our children and grandchildren, and by and large - the fate of our country. but to whom and who will be responsible for this and will it be - a big question? Or it will again be a "voice in the desert", which is a pity - after all, this is the fate of our children and grandchildren, and by and large - the fate of our country. but to whom and who will be responsible for this and will it be - a big question? Or it will again be a "voice in the desert", which is a pity - after all, this is the fate of our children and grandchildren, and by and large - the fate of our country.

And yet, hope dies last: "Colleagues, let's wake up, stop being afraid of everything, and be indifferent for the fate of our own children, rise and fight and we will be able to alter and reorganize a lot in ourselves, in colleagues, and in the country as a whole ...

If the state of higher education in Russia is more or less clear, then the attitude to the learning process itself is ambiguous. This is alarming, which can provoke indifference and unwillingness to spend efforts to turn these very competencies into knowledge, which would be for them evaluative criteria for making a decision when hiring them. Such anxiety is due to the fact that when communicating with school graduates and graduate students to prepare them for filling out the questionnaires, indifference was frankly traced, and the question - Why? More often than not, the answer was the same. There is no certainty that their efforts will be needed. Realizing that this is passing, we took a chance on an experiment, the essence of which was that we mixed the sequence of competencies with the help of random numbers and included them in the questionnaire with new numbers.

Our presence when filling out the questionnaires convinced us that the prevailing stereotype worked on the questionnaires, namely, if the factors are listed in a certain sequence, then their significance corresponds to this sequence and they assign places taking into account this stereotype. This conclusion is confirmed by the low results of the questionnaire - the concardia coefficient does not exceed 0.15, which indicates a lack of agreement between schoolchildren - graduates and bachelors - graduates. Of course, this is not an absolute conclusion, since today, due to the shortage

of applicants and the lack of competition, this situation has provoked a decline in interest in higher education itself. Since today's enterprises are family clans, where the leaders of the main positions are relatives of the owners of the enterprises, sometimes even without an educational base, therefore, both schoolchildren and their parents go to the least resistance to help their child get a specialty that will be in demand at all times: an economist, a lawyer, an accountant. If this is not possible, or the child has a desire to get an engineering education, then the parents provide him with the opportunity to acquire knowledge of a foreign language, computer technology with the confidence that it will be useful abroad, and, unfortunately, this practice is becoming ever larger. And the conversations of our leaders of the country that we will invite foreigners to leading directions in science only worsens the interest of their homegrown Russians to receive this very education. And this is confirmed by the results of the questionnaire, given in the tables and figures of this message. Out of this picture, the results of the questionnaire survey of teachers, since their high professionalism and work experience did not allow them to be misled, which was confirmed by the results of the first and second surveys, they are identical, more consistent, although the attitude towards the competencies themselves is negative, considering that it is more important for assessing the quality of training of specialists - its ability independently solve the tasks assigned to them. And with confidence that the results of their work will be assessed not only by their salary, but also by the solution of their social problems: housing, authority, promotion and simply respectful attitude towards him as a specialist. what is more important for assessing the quality of training of specialists is their ability to independently solve the tasks assigned to them. And with confidence that the results of their work will be assessed not only by their salary, but also by the solution of their social problems: housing, authority, promotion and simply respectful attitude towards him as a specialist. what is more important for assessing the quality of training of specialists is their ability to independently solve the tasks assigned to them. And with confidence that the results of their work will be assessed not only by their salary, but also by the solution of their social problems: housing, authority, promotion and simply respectful attitude towards him as a specialist.

When communicating with them, the respondents, who were teachers, graduate students, bachelors and masters of the department, expressed their regret about the lack of engineering training, considering this form more effective and in demand - and we agree with it. We believe that all the best that was in the higher education of the USSR and Russia will be reanimated and will take its rightful place.

One of the conditions for the competitiveness of an enterprise is the organization of effective interaction with parties interested in the successful functioning of this enterprise. Each enterprise, even small ones, has several groups of subjects with different interests, with which it can be in temporary or permanent cooperation. The research of the authors is devoted to the issues of studying these interests, ways of solving emerging problems between external and internal participants, establishing relationships between partners, in order to guarantee to all interested parties the implementation of the main principle - the interests of all parties are legitimate and require their satisfaction and respect.

Partnerships can be divided into two groups: external and internal. External include: buyers, suppliers, competitors, government agencies and organizations, regional governments, financial intermediaries.

Buyers. Strategies and tactics for working with important customers include joint meetings to identify the drivers of business change, mutual efforts to develop products and the market, increase communication, use common space, and joint training and service programs. Strengthening customer relationships often provides significant benefits.

Internal partners include managers, employees, owners, and a board of directors or board that represents managers and owners. One of the most significant internal partners is a senior executive.

Thus, the success of an organization is determined by the degree of satisfaction of the interests of interested parties, therefore, in order to increase the competitiveness and efficiency of activities, an enterprise must take into account not only its own interests, but also the interests of interested parties.

Therefore, taking into account the considered methodological foundations of the competitiveness of an enterprise, a methodology for assessing and analyzing the competitiveness of an enterprise based on the theory of stakeholders is proposed.

Stage 1. Selection indicators for assessing competitiveness factors enterprises. For each factor, a system of indicators can be determined based on the analysis of scientific literature (Table 16).

So, taking into account the analysis of the system of indicators for assessing the competitive potential of an enterprise, the following system of indicators for assessing the internal factors of competitiveness can be proposed enterprises (Table 16).

Table 16 - The system of indicators for assessing the competitive potential of shoe enterprises

Competitive potential factors	Assessment indicators
1	2
1. Marketing Effectiveness	The ratio of the quality of the product and the costs of its production and marketing
	Growth rate of marketable products
	Growth in sales and profits
	Profitability
	Market share, image
	The quality of partnerships
2. Quality management	Return on total assets, return on equity; return on investment
	Net profit for 1 rub. sales volume; profit from product sales per 1 rub. sales volume; profit ex. period for 1 rub. sales volume
3. The financial condition of the enterprise	Equity ratio; current liquidity ratio; coverage ratio, autonomy ratio, fixed asset index, total profitability of the enterprise, return on equity, profitability of products
4. The level of organization of production	Production capacity utilization rate; production and sales facilities; volume and directions of investments
	The share of certified products in accordance with international standards of the ISO 9000 series
	Depreciation of OPF, growth of labor productivity
5. Efficiency of MTO	The quality and prices of the supplied materials. Material return, turnover, allowing direct connections; the coefficient of uniformity of goods receipt; profitability of transaction costs; profitability of purchasing goods
6. Activity of innovation activity	Annual expenditure on R&D, number of patents for inventions
	The share of innovative products, the share of product exports, the number of advanced technologies created
	The volume of shipped innovative products (services), the number of patented technologies, the number of patented technologies, the cost of innovation, the number of acquired and transferred new technologies, software
7. Competitiveness of personnel	Personnel turnover rate, coefficient of advance of labor productivity in relation to wages, educational level of labor force, level of professional qualifications of workers

Stage 2. Determination of the importance of indicators in the overall assessment of competitiveness. The significance of indicators for assessing each factor of competitive potential are presented in table. 17.

Table 17 - Recommended system of indicators for assessing the competitiveness of an enterprise and their significance

Enterprise competitiveness factors	Indicators	Significance,%
1	2	3
1. Competitiveness of goods	Weighted average for the product range of competitiveness of the goods	40
2. Efficiency marketing	Exceeding the permissible level of stocks of finished goods	3
	Market share of the enterprise	3
	Sales growth rate	3
	Assessment of the level of partnerships with stakeholders of the enterprise	10
	Total	19
3. Quality management	Return on investment	3
	Return on Total Assets	3
	Total	6
4. Financial condition of the enterprise	Coefficient of provision with own circulating assets	3
	Current liquidity ratio	3
	Costs per 1 rub. products sold	3
	Total	9
5. The level of organization of production	Capacity utilization rate	2
	Labor productivity	2
	Depreciation of fixed assets	2
	Total	6
6. Efficiency of MTO	Reducing the level of material consumption	3
	Material efficiency	3
	Total	6
7. Activity of innovation activity	Share of innovative products	4
	Cost of innovation	4
	Total	8
8. Competitiveness of personnel	Coefficient of advancing labor productivity growth in relation to wage growth	3
	Employee turnover rate	3
	Total	6
	Total importance of competitive potential	60
	Total maximum significance score	100

Stage 3. Calculation of dimensionless estimates indicators of the competitiveness of the enterprise.

To convert the dimensional estimates of indicators into dimensionless, it is proposed to use the index method. Indices of dimensionless indicators are determined by formula (2) for positive indicators that have a positive trend - growth (for example, profitability of sold products, labor productivity) and according to formula (3) for negative indicators that have a positive trend - decrease (for example, depreciation of fixed assets, excess of balances of finished products in the warehouse in comparison with the norm, staff turnover rate), taken mainly from the indicators that form the cost of production:

$$O_i = X_i / X_i^{\max}, \qquad (2)$$

$$O_i = X_i^{\min} / X_i, \qquad (3)$$

where Oi - dimensionless (index) assessment of the i-th indicator of the competitiveness of the enterprise; Xi - the value of the i-th dimensional indicator for assessing the competitiveness of the enterprise; Ximax is the maximum value of the i-th dimensional indicator for assessing the competitiveness of an enterprise; Ximin is the minimum value of the i-th dimensional indicator for assessing the competitiveness of an enterprise.

Stage 4. Assessment of the competitiveness of the product. It is carried out for light industry goods according to their demand in the domestic market.

Stage 5. Calculation of the generalizing indicator of the competitiveness of the enterprise. It is proposed to determine a quantitative assessment of the

competitiveness of an enterprise according to the following formula (4):

$$K_{\Pi} = \sum_{i=1}^{m} \alpha_i \times O_i \ , \qquad (4)$$

where KP is an assessment of the competitiveness of the enterprise in percent; α_i- the significance of the i-th indicator of competitiveness in percent; Oi - index (dimensionless) assessment of the i-th indicator of competitiveness; m - the number of indicators for assessing the competitiveness of the enterprise.

The values of assessing the competitiveness of an enterprise can theoretically vary from 0 to 100:

$$K_{\text{P}} = 0 \div 100 \qquad (5)$$

For the qualitative characteristics of the obtained assessments of competitiveness, a scale for assessing the quality level is required. In economic practice, they use the principle of constructing scales with an equal step, progressive and regressive scales. Progressive and regressive scales are most often used for material incentives. We believe that the most appropriate is a scale with an equal step, since it, firstly, corresponds to solving a practical problem (specification of the qualitative level of competitiveness), and secondly, it is easy to build and use. The scale step is defined as 100 (maximum estimate): 4 (number of levels) = 25. A choice of another step value is also possible, which is determined by the goals and objectives that the enterprise itself forms for itself.

Table 18 - The scale for assessing the qualitative level of competitiveness of the enterprise

Percentage score	Quality level
from 0 to 24.9	very low
from 25.0 to 49.9	low
from 50.0 to 74.9	middle
from 75.0 to 100	tall

The economic meaning of the obtained generalized assessment of competitiveness is that, on the one hand, it shows the degree of satisfaction with the product, and on the other, the degree of use of the competitive potential of the enterprise itself.

The proposed methodology for assessing and analyzing the competitiveness of an enterprise, in contrast to the existing ones, firstly, takes into account the specifics of the shoe industry, secondly, reduces the subjective factor in the assessment, and thirdly, allows for an in-depth analysis, thanks to the proposed directions and indicators of analysis competitiveness of enterprises.

What factors would you prefer when assessing the competitive potential of enterprises in the regions of the Southern Federal District and the North Caucasus Federal District, taking advantage of the privileges - to assign them the appropriate rank from the arithmetic series - preferable starting from 1, and not preferable - a higher figure, ensuring that the requirements of the arithmetic series are met, namely, not allowing missing digits in the arithmetic series. If you have difficulties in choosing preferences, you can use "linked ranks", assigning two or more factors the same rank, but here you must comply with the requirements of the arithmetic series (Table 19-21, Fig. 9-10).

Table 19 - Criteria for assessing the competitiveness of light industry enterprises located in the regions of the Southern Federal District and the North Caucasus Federal District

No.	List of factors for assessing the competitive potential of enterprises in the regions of the Southern Federal District and the North Caucasus Federal District	Rank
1	The ratio of the quality of the product and the costs of its production and marketing	
2	Sales growth rate	
3	Exceeding the permissible level of stocks of finished goods	
4	Assessment of the level of partnerships with stakeholders of the enterprise	
5	Market share of the enterprise	
6	Return on investment	
7	Return on Total Assets	
8	Cost of innovation	
9	Equity ratio	
10	Capacity utilization rate	

11	Labor productivity	
12	Material efficiency	
13	The share of certified products in accordance with the international standards of the ISO series	
14	Reducing the level of material consumption	
15	Share of innovative products	
16	Trade turnover allowing direct links	
17	The coefficient of advancing labor productivity in relation to the growth of wages	
18	Coefficient of uniform supply of goods to sales markets	
19	Depreciation of fixed assets	
20	Employee turnover rate	
21	Costs per ruble of products sold	
22	Weighted average for the product range of competitiveness of the goods	

Table 20 - The results of the questionnaire survey of bachelors, masters, teachers and specialists - university graduates working at light industry enterprises, on the impact of competitive potential on the performance of light industry enterprises in the Southern Federal District and the North Caucasus Federal District

Experts	Factors																					
	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20	X21	X22
1	5	8	6	2	7	9	10	4	11	15	17	12	14	13	3	18	19	20	16	12	20	1
2	3	2	14	13	8	9	15	5	16	10	12	17	1	18	4	19	6	10	20	21	11	7
3	8	16	21	5	2	10	6	7	11	17	12	14	1	20	3	13	15	17	19	18	4	9
4	10	13	21	14	2	6	11	4	5	7	9	19	1	18	3	15	16	7	17	20	8	12
5	15	2	16	14	17	3	2	5	6	13	7	10	1	8	18	21	9	20	19	11	4	12
6	1	2	10	12	7	13	11	3	14	15	8	16	17	21	4	9	20	22	5	6	19	18
7	12	11	14	16	10	9	2	20	8	19	7	18	1	13	22	15	17	6	21	5	3	4
8	2	19	9	12	8	3	11	20	4	22	7	13	5	17	21	10	14	18	16	1	6	15
9	10	4	18	3	8	19	9	14	21	15	5	17	1	12	11	16	20	22	13	6	2	7
10	6	7	17	18	16	14	5	19	13	8	4	9	10	11	22	3	21	12	20	15	1	2
11	10	5	4	9	3	12	11	8	1	22	2	13	14	16	17	6	20	18	21	7	19	15
12	8	3	9	13	2	22	14	11	15	19	4	17	6	16	20	10	18	21	12	1	5	7
13	4	1	9	6	13	15	3	19	14	8	18	20	17	21	5	16	10	2	22	12	7	11
14	13	14	10	3	1	2	16	15	20	5	21	17	4	11	19	7	18	6	22	9	12	8
15	7	14	3	11	17	19	4	12	9	21	1	18	5	20	22	15	8	16	2	13	6	10
16	2	3	5	6	8	4	10	15	7	11	18	16	1	12	21	19	13	14	17	22	20	9
17	6	15	7	8	11	10	9	1	21	20	16	17	2	12	3	22	19	13	4	18	14	5
18	3	1	22	6	19	13	14	11	17	18	2	21	12	16	4	5	10	15	20	7	8	9
19	2	3	6	7	12	11	17	13	18	16	1	20	5	14	19	8	15	9	10	22	21	4
20	2	12	8	11	14	7	15	10	17	9	16	18	1	20	5	19	4	13	22	6	21	3
21	1	14	21	9	8	15	16	7	5	6	4	18	19	17	10	20	22	11	12	13	2	3
22	10	1	18	11	5	12	20	19	6	15	7	8	2	9	4	13	17	15	16	21	3	14
23	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
24	9	1	10	11	3	2	13	12	15	19	8	7	14	18	20	4	17	22	16	21	5	6
25	20	4	11	18	5	6	2	17	15	16	1	8	10	14	13	7	12	22	9	21	3	19
26	3	1	10	14	4	5	12	7	19	17	6	21	13	22	8	16	9	20	18	15	2	11
27	7	2	19	8	1	15	6	20	17	16	3	9	14	13	18	5	22	11	12	21	10	4

28	8	3	16	9	1	17	6	7	19	18	2	10	15	20	14	4	22	12	13	21	11	5
29	4	11	7	10	1	9	2	17	14	21	8	19	6	20	13	22	3	18	12	16	5	15
30	1	3	21	10	8	9	7	14	12	13	11	22	15	17	6	18	19	16	5	20	2	4
31	13	4	14	16	3	22	7	21	8	17	5	15	6	12	11	18	10	9	20	1	2	19
32	9	2	10	14	1	16	15	19	17	20	3	4	11	13	12	18	5	21	7	22	6	8
33	1	9	10	12	11	7	6	5	15	14	13	17	16	18	19	8	21	4	22	20	3	2
34	12	2	13	11	10	1	18	8	19	17	9	7	14	20	6	3	21	16	22	15	4	5
35	4	3	15	5	6	7	14	16	8	11	1	20	17	21	12	9	10	2	22	13	18	19
36	2	4	11	12	1	14	19	20	21	5	18	17	6	22	7	8	10	3	9	13	15	16
37	10	9	17	11	4	5	15	14	16	13	1	2	19	22	3	18	6	7	8	12	20	21
38	1	6	7	5	4	13	10	9	12	11	4	8	2	14	16	4	15	18	17	19	3	20
39	2	5	16	10	9	15	19	11	8	7	1	18	6	21	14	22	12	17	4	20	3	13
40	1	2	15	12	13	14	6	16	3	3	4	7	5	4	8	9	10	11	18	17	20	19
41	1	3	22	4	2	5	6	13	15	16	17	18	7	19	20	8	9	10	11	12	21	14
42	1	18	10	17	9	13	16	19	6	7	15	2	14	5	4	20	11	8	21	12	22	3
43	10	8	3	6	7	9	10	10	1	4	1	3	1	5	3	3	2	1	2	8	5	5
44	10	2	4	10	6	7	8	2	1	9	1	1	1	4	1	1	5	1	3	5	5	4
45	11	4	18	5	1	2	3	16	17	20	6	19	10	9	15	14	21	12	13	22	7	8
46	4	2	21	7	18	17	12	6	11	10	5	1	19	9	8	15	22	14	16	20	13	3
47	3	11	16	8	12	1	2	4	6	19	9	5	13	9	7	19	6	14	18	17	15	10
48	7	4	15	5	3	16	8	8	6	10	9	12	2	11	3	20	19	13	14	18	17	1
49	6	5	15	6	18	7	19	3	8	19	9	14	2	13	16	18	4	10	12	17	11	1
50	17	14	21	1	22	8	9	20	5	7	6	10	12	13	11	15	2	16	18	19	3	4
51	13	1	22	15	9	8	21	6	10	7	12	11	16	14	17	2	20	18	19	5	4	3
52	3	1	22	12	4	9	8	10	5	15	6	13	16	14	11	17	20	7	18	19	21	2
53	14	17	18	12	5	6	2	19	7	16	1	11	15	10	20	4	19	3	8	13	9	1
54	8	1	21	2	10	4	13	12	5	20	19	6	18	7	22	9	17	16	15	14	3	11
55	7	8	13	14	9	18	11	19	10	1	1	12	15	2	16	17	2	5	4	3	5	6

Table 21 - Results of processing the a priori ranking of bachelors, masters, teachers and specialists - university graduates, on the impact of competitive potential on the performance of light industry enterprises in the Southern Federal District and the North Caucasus Federal District

Expert	Factor																					
	X1	X2	X3	X4	X5	X6	X7	X8	X9	X 10	X 11	X 12	X 13	X 14	X 15	X 16	X 17	X 18	X 19	X 20	X 21	X 22	Q C
1	5	8	6	2	7	9	10	4	11	16	18	12,5	15	14	3	19	20	21,5	17	12,5	21,5	1	0,33
2	3	2	15	14	8	9	16	5	17	10,5	13	18	1	19	4	20	6	10,5	21	22	12	7	0,44
3	8	16	22	5	2	10	6	7	11	17,5	12	14	1	21	3	13	15	17,5	20	19	4	9	0,57
4	11	14	22	15	2	6	12	4	5	7,5	10	20	1	19	3	16	17	7,5	18	21	9	13	0,35
5	16	2,5	17	15	18	4	2,5	6	7	14	8	11	1	9	19	22	10	21	20	12	5	13	0,28
6	1	2	10	12	7	13	11	3	14	15	8	16	17	21	4	9	20	22	5	6	19	18	0,34

7	12	11	14	16	10	9	2	20	8	19	7	18	1	13	22	15	17	6	21	5	3	4	0,29
8	2	19	9	12	8	3	11	20	4	22	7	13	5	17	21	10	14	18	16	1	6	15	0,26
9	10	4	18	3	8	19	9	14	21	15	5	17	1	12	11	16	20	22	13	6	2	7	0,49
10	6	7	17	18	16	14	5	19	13	8	4	9	10	11	22	3	21	12	20	15	1	2	0,30
11	10	5	4	9	3	12	11	8	1	22	2	13	14	16	17	6	20	18	21	7	19	15	0,33
12	8	3	9	13	2	22	14	11	15	19	4	17	6	16	20	10	18	21	12	1	5	7	0,37
13	4	1	9	6	13	15	3	19	14	8	18	20	17	21	5	16	10	2	22	12	7	11	0,27
14	13	14	10	3	1	2	16	15	20	5	21	17	4	11	19	7	18	6	22	9	12	8	0,21
15	7	14	3	11	17	19	4	12	9	21	1	18	5	20	22	15	8	16	2	13	6	10	0,24
16	2	3	5	6	8	4	10	15	7	11	18	16	1	12	21	19	13	14	17	22	20	9	0,39
17	6	15	7	8	11	10	9	1	21	20	16	17	2	12	3	22	19	13	4	18	14	5	0,24
18	3	1	22	6	19	13	14	11	17	18	2	21	12	16	4	5	10	15	20	7	8	9	0,37
19	2	3	6	7	12	11	17	13	18	16	1	20	5	14	19	8	15	9	10	22	21	4	0,43
20	2	12	8	11	14	7	15	10	17	9	16	18	1	20	5	19	4	13	22	6	21	3	0,23
21	1	14	21	9	8	15	16	7	5	6	4	18	19	17	10	20	22	11	12	13	2	3	0,35
22	10	1	19	11	5	12	21	20	6	15,5	7	8	2	9	4	13	18	15,5	17	22	3	14	0,54
23	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	0,38
24	9	1	10	11	3	2	13	12	15	19	8	7	14	18	20	4	17	22	16	21	5	6	0,69
25	20	4	11	18	5	6	2	17	15	16	1	8	10	14	13	7	12	22	9	21	3	19	0,28
26	3	1	10	14	4	5	12	7	19	17	6	21	13	22	8	16	9	20	18	15	2	11	0,69
27	7	2	19	8	1	15	6	20	17	16	3	9	14	13	18	5	22	11	12	21	10	4	0,69
28	8	3	16	9	1	17	6	7	19	18	2	10	15	20	14	4	22	12	13	21	11	5	0,69
29	4	11	7	10	1	9	2	17	14	21	8	19	6	20	13	22	3	18	12	16	5	15	0,41
30	1	3	21	10	8	9	7	14	12	13	11	22	15	17	6	18	19	16	5	20	2	4	0,63
31	13	4	14	16	3	22	7	21	8	17	5	15	6	12	11	18	10	9	20	1	2	19	0,26
32	9	2	10	14	1	16	15	19	17	20	3	4	11	13	12	18	5	21	7	22	6	8	0,46
33	1	9	10	12	11	7	6	5	15	14	13	17	16	18	19	8	21	4	22	20	3	2	0,42
34	12	2	13	11	10	1	18	8	19	17	9	7	14	20	6	3	21	16	22	15	4	5	0,69
35	4	3	15	5	6	7	14	16	8	11	1	20	17	21	12	9	10	2	22	13	18	19	0,36
36	2	4	11	12	1	14	19	20	21	5	18	17	6	22	7	8	10	3	9	13	15	16	0,23
37	10	9	17	11	4	5	15	14	16	13	1	2	19	22	3	18	6	7	8	12	20	21	0,20
38	1	8	9	7	5	15	12	11	14	13	5	10	2	16	18	5	17	20	19	21	3	22	0,48

39	2	5	16	10	9	15	19	11	8	7	1	18	6	21	14	22	12	17	4	20	3	13	0,45
40	1	2	17	14	15	16	8	18	3,5	3,5	5,5	9	7	5,5	10	11	12	13	20	19	22	21	0,25
41	1	3	22	4	2	5	6	13	15	16	17	18	7	19	20	8	9	10	11	12	21	14	0,40
42	1	18	10	17	9	13	16	19	6	7	15	2	14	5	4	20	11	8	21	12	22	3	0,20
43	21	17,5	8,5	15	16	19	21	21	2,5	11	2,5	8,5	2,5	13	8,5	8,5	5,5	2,5	5,5	17,5	13	13	0,17
44	21,5	8,5	12	21,5	17	18	19	8,5	4	20	4	4	4	12	4	4	15	4	10	15	15	12	0,19
45	11	4	18	5	1	2	3	16	17	20	6	19	10	9	15	14	21	12	13	22	7	8	0,69
46	4	2	21	7	18	17	12	6	11	10	5	1	19	9	8	15	22	14	16	20	13	3	0,32
47	3	13	18	9	14	1	2	4	6,5	21,5	10,5	5	15	10,5	8	21,5	6,5	16	20	19	17	12	0,27
48	8	5	17	6	3,5	18	9,5	9,5	7	12	11	14	2	13	3,5	22	21	15	16	20	19	1	0,51
49	6,5	5	16	6,5	19,5	8	21,5	3	9	21,5	10	15	2	14	17	19,5	4	11	13	18	12	1	0,32
50	17	14	21	1	22	8	9	20	5	7	6	10	12	13	11	15	2	16	18	19	3	4	0,21
51	13	1	22	15	9	8	21	6	10	7	12	11	16	14	17	2	20	18	19	5	4	3	0,30
52	3	1	22	12	4	9	8	10	5	15	6	13	16	14	11	17	20	7	18	19	21	2	0,60
53	15	18	19	13	6	7	3	20,5	8	17	1,5	12	16	11	22	5	20,5	4	9	14	10	1,5	0,22
54	8	1	21	2	10	4	13	12	5	20	19	6	18	7	22	9	17	16	15	14	3	11	0,31
55	10	11	16	17	12	21	14	22	13	1,5	1,5	15	18	3,5	19	20	3,5	7,5	6	5	7,5	9	0,18
Rank sums	393	368,5	765,5	559	455	583	600,5	679,5	463,5	772	440,5	732	516,5	815,5	670	715,5	778	723,5	819,5	814	563	516,5	
Sum of Ranks without heretics.	47	12	76	44	16	37	46	63	87	90	28	52	67	80	73	30	103	73	76	100	37	28	
Coef. concord.		0,16		0,69																			
Pearson's criterion.		183,2		6,55																			

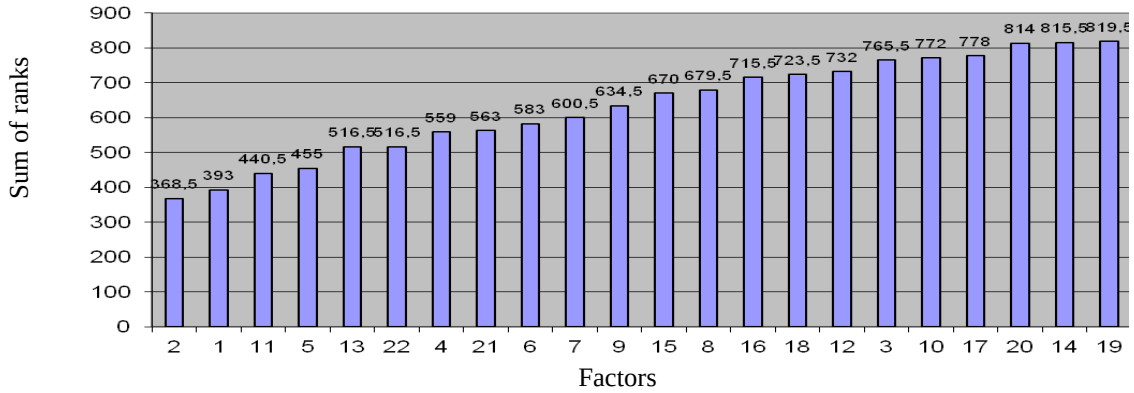

Fig. 9. The results of the questionnaire survey of bachelors, masters, teachers and specialists - university graduates working at light industry enterprises, on the impact of competitive potential on the performance of light industry enterprises in the regions of the Southern Federal District and the North Caucasus Federal District

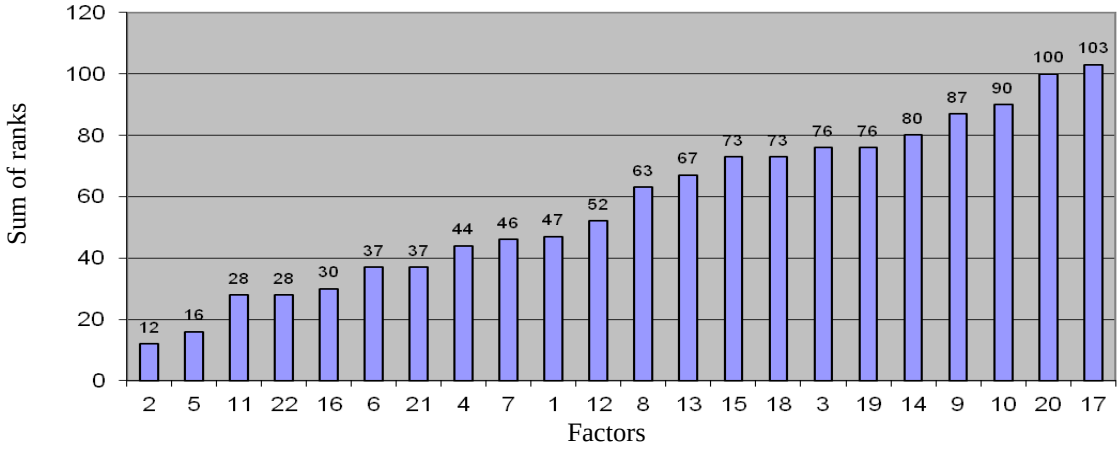

Fig. 10.The results of a survey of bachelors, masters, teachers and specialists - university graduates working at light industry enterprises, on the impact of competitive potential on the performance of a light industry enterprise in the regions of the Southern Federal District and the North Caucasus Federal District, without heretics, that is, the opinion of those respondents that does not agree with most of the participants poll

What priorities would you give preference in assessing the high performance properties and quality of fur products, taking advantage of the privileges - to assign them the appropriate rank from the arithmetic series - preferable starting from 1, and not non-preferred - a higher figure, ensuring that the requirements of the arithmetic series are met, namely, not allowing missing numbers. If you have difficulties in choosing preferences, you can use the "linked ranks", but even here it is necessary to satisfy the requirements of the arithmetic series (Table 22 - 24, Fig. 11 - 12).

Table 22 - Criteria for assessing the impact on the quality of domestic fur products, formed according to the results of a survey of leading experts

No.	The list of high performance indicators and quality of fur products	Rank
1	Lightfastness to fur dyeing	
2	Fur resistance to moisture	
3	Dry cleaning resistance	
4	Lack of color variation in the product	
5	Absence of lifetime diseases and injuries, confirmation by sanitary and ecological certificates	
6	Fur type	
7	Resistance to low temperatures, heat-shielding properties	
8	Price	
9	Duration of the warranty period	
10	Weight (product weight)	
11	Wrinkle resistance	
12	Shine of the hairline of the fur product	
13	Hairline height (length)	
14	Hair density	
15	Hair softness	
16	The elasticity of the hairline in a wet and hot state (ensuring the product is given the desired shape)	
17	The strength of the bond of the hairline with the skin tissue	
18	The size of the dressed skins	
19	Dry friction fastness of the hairline	
20	Skin grade	
21	Compliance of fittings and other accessories in the manufacture of fur products with the requirements that apply to them	
22	The presence of a "chip"	

If the number of related ranks is 8, then in the arithmetic row from 1 to 22 places there will remain 22 - 8 = 14, i.e. there will be only 14 places in the new arithmetic series.

Table 23 - Results of the survey of bachelors, masters, teachers and specialists working at light industry enterprises, on the criteria for assessing the impact on the quality of domestic fur products

Experts	Factors																					
	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20	X21	X22
1	1	3	2	6	7	8	4	10	20	15	18	21	11	14	16	17	12	13	19	5	19	9
2	16	3	2	17	1	18	19	6	4	7	8	20	9	10	11	12	20	13	5	14	15	20
3	8	7	6	9	15	1	16	2	10	3	11	20	17	12	21	18	19	5	14	4	13	22
4	8	9	4	11	13	1	7	3	12	10	20	14	15	6	5	19	16	17	18	2	21	22
5	15	14	16	13	12	1	3	2	5	4	9	6	7	8	17	18	19	10	21	11	20	21
6	7	13	8	4	1	20	18	2	10	6	21	5	3	9	11	14	12	22	19	17	16	15
7	11	13	12	21	14	15	17	1	2	3	4	16	7	5	6	19	21	8	18	9	20	10
8	12	13	14	11	10	1	4	2	9	3	20	8	7	6	5	18	21	22	16	15	17	19
9	3	2	6	7	10	1	12	5	13	11	22	4	8	17	15	14	9	19	18	21	16	20
10	7	13	15	14	2	6	5	1	20	12	19	16	22	17	18	4	8	21	3	11	9	10
11	10	2	9	8	22	11	1	19	13	7	18	6	5	4	3	17	14	15	16	12	20	21
12	10	9	11	12	13	19	8	1	22	6	7	5	4	3	2	14	15	21	18	16	17	20
13	3	7	4	1	17	5	6	16	9	10	11	12	12	13	14	15	19	18	8	2	20	20
14	10	4	14	5	20	1	11	2	9	15	21	12	17	16	6	18	7	19	13	3	8	22
15	12	15	14	13	2	3	16	11	17	4	19	20	22	18	5	6	7	1	9	8	10	21
16	14	16	15	3	21	2	5	17	18	1	19	6	8	7	9	11	10	12	20	4	13	22
17	5	6	17	2	1	7	3	14	18	10	12	15	16	11	20	19	4	13	9	8	21	22
18	3	21	13	14	15	22	4	20	19	5	6	8	18	17	16	7	10	9	12	11	2	1
19	4	11	12	7	2	1	8	3	6	5	15	13	14	9	10	17	16	20	19	18	21	22
20	19	3	18	21	22	16	5	10	15	17	14	13	12	1	2	6	7	8	9	11	20	4
21	15	10	16	9	8	17	14	6	7	13	2	4	3	1	5	12	11	20	18	19	21	22
22	3	5	1	7	2	8	6	21	13	22	15	4	17	19	18	9	12	11	14	20	10	16
23	2	1	3	6	11	14	7	16	4	17	12	20	13	15	5	21	8	22	18	9	19	10
24	15	16	14	13	1	12	2	4	3	18	17	19	20	10	9	8	7	6	11	5	21	22
25	17	15	16	14	4	18	13	2	1	3	19	20	6	7	8	10	9	12	11	21	5	22
26	5	4	15	6	14	7	1	2	2	3	18	9	16	17	8	11	12	10	13	19	20	21
27	3	6	2	11	4	20	1	9	12	10	5	15	13	14	19	16	17	18	7	8	22	21
28	2	4	11	13	1	10	14	3	18	8	15	17	16	9	19	20	6	7	21	5	22	12
29	5	2	3	4	6	22	9	1	8	7	15	10	21	11	12	16	18	20	13	14	17	19
30	5	20	2	11	8	17	3	7	6	9	10	15	13	14	12	18	1	19	22	4	21	16
31	6	1	5	12	13	17	7	20	18	3	4	21	11	9	10	14	15	16	2	8	22	19
32	1	9	2	10	11	16	8	12	17	3	13	18	21	19	4	5	6	14	7	15	20	22
33	6	4	5	21	20	1	19	7	2	3	16	8	9	10	11	13	14	12	15	17	18	22
34	9	7	8	10	14	1	6	2	16	11	17	15	5	4	3	18	13	21	20	12	19	22
35	2	8	9	10	11	4	5	12	3	13	14	16	15	18	17	19	1	22	6	7	21	20
36	3	2	4	5	11	12	1	10	6	6	7	15	14	17	19	9	8	8	13	16	18	20
37	8	12	13	4	14	5	6	11	15	7	16	17	1	2	18	19	20	6	21	3	10	9
38	3	1	5	8	11	15	6	12	16	9	21	2	20	7	14	19	10	17	13	4	18	22
39	15	13	16	5	17	1	18	2	3	4	22	19	8	6	7	14	9	10	11	12	20	21
40	4	10	18	5	21	11	12	3	1	2	22	13	14	6	15	16	8	7	17	9	19	20
41	7	8	9	10	20	11	12	3	2	1	13	14	15	16	17	18	4	19	6	5	21	22
42	6	9	8	7	20	4	5	3	1	2	15	10	14	11	13	12	16	17	18	19	21	22
43	17	1	2	3	4	5	6	9	7	8	13	12	11	10	10	18	14	14	15	16	19	20

44	10	11	12	9	1	13	8	14	20	15	16	17	2	3	4	19	5	6	6	7	18	19
45	6	6	8	3	15	1	2	1	5	7	14	7	9	3	10	10	4	12	11	4	13	16
46	6	6	6	5	1	15	3	16	7	9	15	8	3	13	14	10	4	3	11	12	17	2
47	5	7	8	6	9	2	10	4	22	3	15	14	11	13	12	17	20	21	18	1	19	16
48	17	16	15	12	18	1	13	14	2	2	11	5	6	3	4	19	7	4	9	8	20	10
49	6	7	6	5	2	1	8	2	1	1	9	10	11	12	14	13	10	3	4	4	5	1
50	3	4	8	7	9	21	6	19	17	18	10	13	14	11	12	5	1	2	2	15	16	20
51	1	3	4	2	7	3	12	11	10	15	14	10	13	19	20	16	18	17	6	5	8	9
52	1	11	12	13	14	16	15	20	2	21	17	4	3	6	5	18	7	22	8	10	9	19

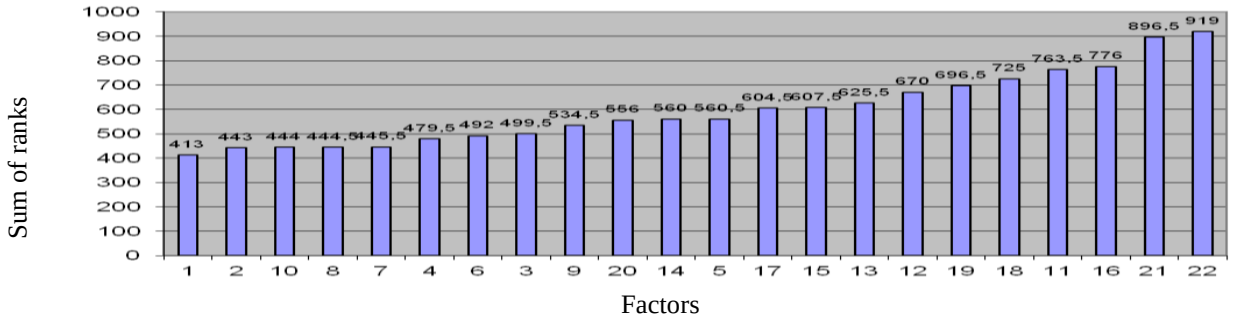

Fig. 11.The results of the questionnaire survey of bachelors, masters, teachers and specialists - university graduates working at light industry enterprises, on the criteria for assessing the impact on the quality of domestic fur products

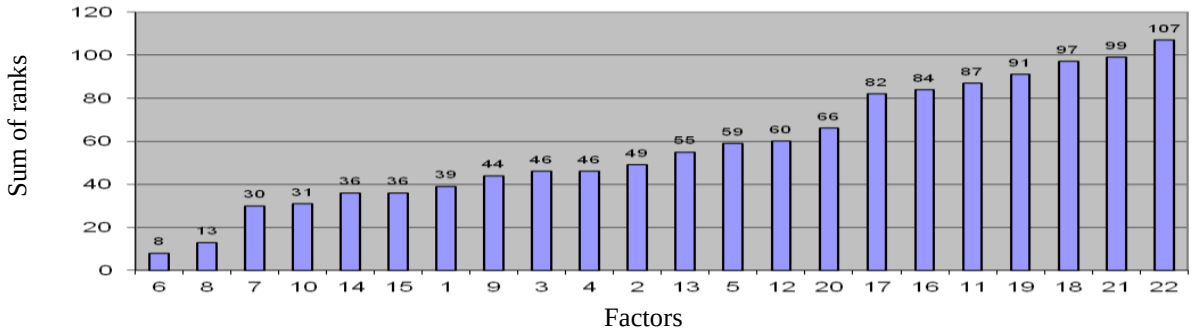

Fig. 12.The results of the questionnaire survey of bachelors, masters, teachers and specialists - university graduates working at light industry enterprises, on the criteria for assessing the impact on the quality of domestic fur products without heretics, i.e. opinions of those respondents who do not agree with the majority of survey participants

Table 24 - The results of processing the a priori ranking of bachelors, masters, teachers and specialists working at light industry enterprises, on the criteria for assessing the impact on the quality of domestic fur products

Expert	**Factor**																					
	X1	**X2**	**X3**	**X4**	**X5**	**X6**	**X7**	**X8**	**X9**	**X 10**	**X 11**	**X 12**	**X 13**	**X 14**	**X 15**	**X 16**	**X 17**	**X 18**	**X 19**	**X 20**	**X 21**	**X 22**	**Q C**
1	1	3	2	6	7	8	4	10	21	15	18	22	11	14	16	17	12	13	19,5	5	19,5	9	0,45
2	16	3	2	17	1	18	19	6	4	7	8	21	9	10	11	12	21	13	5	14	15	21	0,33
3	8	7	6	9	15	1	16	2	10	3	11	20	17	12	21	18	19	5	14	4	13	22	0,54
4	8	9	4	11	13	1	7	3	12	10	20	14	15	6	5	19	16	17	18	2	21	22	0,76
5	15	14	16	13	12	1	3	2	5	4	9	6	7	8	17	18	19	10	21,5	11	20	21,5	0,74

6	7	13	8	4	1	20	18	2	10	6	21	5	3	9	11	14	12	22	19	17	16	15	0,40
7	11	13	12	21,5	14	15	17	1	2	3	4	16	7	5	6	19	21,5	8	18	9	20	10	0,31
8	12	13	14	11	10	1	4	2	9	3	20	8	7	6	5	18	21	22	16	15	17	19	0,76
9	3	2	6	7	10	1	12	5	13	11	22	4	8	17	15	14	9	19	18	21	16	20	0,62
10	7	13	15	14	2	6	5	1	20	12	19	16	22	17	18	4	8	21	3	11	9	10	0,24
11	10	2	9	8	22	11	1	19	13	7	18	6	5	4	3	17	14	15	16	12	20	21	0,49
12	10	9	11	12	13	19	8	1	22	6	7	5	4	3	2	14	15	21	18	16	17	20	0,39
13	3	7	4	1	18	5	6	17	9	10	11	12,5	12,5	14	15	16	20	19	8	2	21,5	21,5	0,53
14	10	4	14	5	20	1	11	2	9	15	21	12	17	16	6	18	7	19	13	3	8	22	0,57
15	12	15	14	13	2	3	16	11	17	4	19	20	22	18	5	6	7	1	9	8	10	21	0,25
16	14	16	15	3	21	2	5	17	18	1	19	6	8	7	9	11	10	12	20	4	13	22	0,40
17	5	6	17	2	1	7	3	14	18	10	12	15	16	11	20	19	4	13	9	8	21	22	0.47
18	3	21	13	14	15	22	4	20	19	5	6	8	18	17	16	7	10	9	12	11	2	1	0,21
19	4	11	12	7	2	1	8	3	6	5	15	13	14	9	10	17	16	20	19	18	21	22	0,76
20	19	3	18	21	22	16	5	10	15	17	14	13	12	1	2	6	7	8	9	11	20	4	0,22
21	15	10	16	9	8	17	14	6	7	13	2	4	3	1	5	12	11	20	18	19	21	22	0,34
22	3	5	1	7	2	8	6	21	13	22	15	4	17	19	18	9	12	11	14	20	10	16	0,26
23	2	1	3	6	11	14	7	16	4	17	12	20	13	15	5	21	8	22	18	9	19	10	0,44
24	15	16	14	13	1	12	2	4	3	18	17	19	20	10	9	8	7	6	11	5	21	22	0,35
25	17	15	16	14	4	18	13	2	1	3	19	20	6	7	8	10	9	12	11	21	5	22	0,29
26	6	5	16	7	15	8	1	2,5	2,5	4	19	10	17	18	9	12	13	11	14	20	21	22	0,71
27	3	6	2	11	4	20	1	9	12	10	5	15	13	14	19	16	17	18	7	8	22	21	0,46
28	2	4	11	13	1	10	14	3	18	8	15	17	16	9	19	20	6	7	21	5	22	12	0,42
29	5	2	3	4	6	22	9	1	8	7	15	10	21	11	12	16	18	20	13	14	17	19	0,50
30	5	20	2	11	8	17	3	7	6	9	10	15	13	14	12	18	1	19	22	4	21	16	0,43
31	6	1	5	12	13	17	7	20	18	3	4	21	11	9	10	14	15	16	2	8	22	19	0,38
32	1	9	2	10	11	16	8	12	17	3	13	18	21	19	4	5	6	14	7	15	20	22	0,41
33	6	4	5	21	20	1	19	7	2	3	16	8	9	10	11	13	14	12	15	17	18	22	0,60
34	9	7	8	10	14	1	6	2	16	11	17	15	5	4	3	18	13	21	20	12	19	22	0,76
35	2	8	9	10	11	4	5	12	3	13	14	16	15	18	17	19	1	22	6	7	21	20	0,52
36	3	2	4	5	13	14	1	12	6,5	6,5	8	17	16	19	21	11	9,5	9,5	15	18	20	22	0,50
37	9	13	14	4	15	5	6,5	12	16	8	17	18	1	2	19	20	21	6,5	22	3	11	10	0,36

38	3	1	5	8	11	15	6	12	16	9	21	2	20	7	14	19	10	17	13	4	18	22	0,51
39	15	13	16	5	17	1	18	2	3	4	22	19	8	6	7	14	9	10	11	12	20	21	0,68
40	4	10	18	5	21	11	12	3	1	2	22	13	14	6	15	16	8	7	17	9	19	20	0,65
41	7	8	9	10	20	11	12	3	2	1	13	14	15	16	17	18	4	19	6	5	21	22	0,56
42	6	9	8	7	20	4	5	3	1	2	15	10	14	11	13	12	16	17	18	19	21	22	0,76
43	19	1	2	3	4	5	6	9	7	8	14	13	12	10,5	10,5	20	15,5	15,5	17	18	21	22	0,64
44	11	12	13	10	1	14	9	15	22	16	17	18	2	3	4	20,5	5	6,5	6,5	8	19	20,5	0,32
45	9,5	9,5	13	4,5	21	1,5	3	1,5	8	11,5	20	11,5	14	4,5	15,5	15,5	6,5	18	17	6,5	19	22	0,76
46	9	9	9	7	1	19,5	4	21	11	13	19,5	12	4	17	18	14	6	4	15	16	22	2	0,24
47	5	7	8	6	9	2	10	4	22	3	15	14	11	13	12	17	20	21	18	1	19	16	0,59
48	19	18	17	14	20	1	15	16	2,5	2,5	13	7	8	4	5,5	21	9	5,5	11	10	22	12	0,30
49	12,5	14	12,5	10,5	5,5	2,5	15	5,5	2,5	2,5	16	17,5	19	20	22	21	17,5	7	8,5	8,5	10,5	2,5	0,27
50	4	5	9	8	10	22	7	20	18	19	11	14	15	12	13	6	1	2,5	2,5	16	17	21	0,25
51	1	3,5	5	2	8	3,5	14	13	11,5	17	16	11,5	15	21	22	18	20	19	7	6	9	10	0,37
52	1	11	12	13	14	16	15	20	2	21	17	4	3	6	5	18	7	22	8	10	9	19	0,28
Rank sums	413	443	499,5	479,5	560,5	492	445,5	444,5	534,5	444	763,5	670	625,5	560	607,5	776	604,5	725	696,5	556	896,5	919	
Sums of ranks without eritics	39	49	46	46	59	8	30	13	44	31	87	60	55	36	36	84	82	97	91	66	99	107	
Coef. concord.		0,19		0,76																			
Crete. Pearson		207,9		7,66																			

What factors would you prefer when assessing the competitive potential of enterprises in the regions of the Southern Federal District and the North Caucasus Federal District through the eyes of children, taking advantage of the privileges - to assign them the appropriate rank from the arithmetic series - preferable starting from 1, and not preferable - a higher figure, ensuring that the requirements of the arithmetic series are met, namely without skipping digits in the arithmetic series. If you have difficulties in choosing preferences, you can use "linked ranks", assigning the same rank to two or more factors, but here it is necessary to comply with the requirements of the arithmetic series (Table 25 - 27, Fig. 13 - 14).

Table 25 - Criteria for assessing the competitiveness and relevance of children's shoes through the eyes of the child himself

No.	List of factors for assessing the competitive potential of enterprises regions of the Southern Federal District and the North Caucasus Federal District	Rank
1	Toe shape	
2	Quality of children's shoes	
3	The flexibility of children's shoes	
4	Price of children's shoes	
5	Comfort	
6	Service level for parents and children in shops and malls	
7	Color	

8	Warranty period for children's shoes	
9	Heel elevation - up to 40 mm	
10	The height of the heel of the shoe - over 40 mm	
11	Weight	
12	Repairability of children's shoes, its expediency	
13	Materials for the bottom of shoes	
14	Upper materials	
15	Place of sale of shoes for children - the interior of a store, or a shopping center	
16	What types of children's shoes are preferred: winter	
17	Autumn	
18	Spring	
19	Summer	
20	Bottom fastening strength	
21	Variety of assortment of shoes for children in shops and shopping centers	
22	Compliance with the direction of fashion	

Table 26 - The results of the survey of children on their assessment of the competitive potential of the criteria for ensuring competitiveness and the demand for children's shoes made for them

Expert	**Factor**																					
	X_1		X_1		X_1		X_1		X_1		X_1		X_1		X_1		X_1		X_1		X_1	
1	5	1	5	1	5	1	5	1	5	1	5	1	5	1	5	1	5	1	5	1	5	1
2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2	3	2
3	8	3	8	3	8	3	8	3	8	3	8	3	8	3	8	3	8	3	8	3	8	3
4	10	4	10	4	10	4	10	4	10	4	10	4	10	4	10	4	10	4	10	4	10	4
5	15	5	15	5	15	5	15	5	15	5	15	5	15	5	15	5	15	5	15	5	15	5
6	1	6	1	6	1	6	1	6	1	6	1	6	1	6	1	6	1	6	1	6	1	6
7	12	7	12	7	12	7	12	7	12	7	12	7	12	7	12	7	12	7	12	7	12	7
8	2	8	2	8	2	8	2	8	2	8	2	8	2	8	2	8	2	8	2	8	2	8
9	10	9	10	9	10	9	10	9	10	9	10	9	10	9	10	9	10	9	10	9	10	9
10	6	10	6	10	6	10	6	10	6	10	6	10	6	10	6	10	6	10	6	10	6	10
11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11	10	11
12	8	12	8	12	8	12	8	12	8	12	8	12	8	12	8	12	8	12	8	12	8	12
13	4	13	4	13	4	13	4	13	4	13	4	13	4	13	4	13	4	13	4	13	4	13
14	13	14	13	14	13	14	13	14	13	14	13	14	13	14	13	14	13	14	13	14	13	14
15	7	15	7	15	7	15	7	15	7	15	7	15	7	15	7	15	7	15	7	15	7	15
16	2	16	2	16	2	16	2	16	2	16	2	16	2	16	2	16	2	16	2	16	2	16
17	6	17	6	17	6	17	6	17	6	17	6	17	6	17	6	17	6	17	6	17	6	17
18	3	18	3	18	3	18	3	18	3	18	3	18	3	18	3	18	3	18	3	18	3	18
19	2	19	2	19	2	19	2	19	2	19	2	19	2	19	2	19	2	19	2	19	2	19
20	2	20	2	20	2	20	2	20	2	20	2	20	2	20	2	20	2	20	2	20	2	20
21	1	21	1	21	1	21	1	21	1	21	1	21	1	21	1	21	1	21	1	21	1	21
22	10	22	10	22	10	22	10	22	10	22	10	22	10	22	10	22	10	22	10	22	10	22
23	1	23	1	23	1	23	1	23	1	23	1	23	1	23	1	23	1	23	1	23	1	23
24	9	24	9	24	9	24	9	24	9	24	9	24	9	24	9	24	9	24	9	24	9	24
25	20	25	20	25	20	25	20	25	20	25	20	25	20	25	20	25	20	25	20	25	20	25
26	3	26	3	26	3	26	3	26	3	26	3	26	3	26	3	26	3	26	3	26	3	26

27	7	27	7	27	7	27	7	27	7	27	7	27	7	27	7	27	7	27	7	27	7	27
28	8	28	8	28	8	28	8	28	8	28	8	28	8	28	8	28	8	28	8	28	8	28
29	4	29	4	29	4	29	4	29	4	29	4	29	4	29	4	29	4	29	4	29	4	29
30	1	30	1	30	1	30	1	30	1	30	1	30	1	30	1	30	1	30	1	30	1	30
31	13	31	13	31	13	31	13	31	13	31	13	31	13	31	13	31	13	31	13	31	13	31
32	9	32	9	32	9	32	9	32	9	32	9	32	9	32	9	32	9	32	9	32	9	32
33	1	33	1	33	1	33	1	33	1	33	1	33	1	33	1	33	1	33	1	33	1	33
34	12	34	12	34	12	34	12	34	12	34	12	34	12	34	12	34	12	34	12	34	12	34
35	4	35	4	35	4	35	4	35	4	35	4	35	4	35	4	35	4	35	4	35	4	35
36	2	36	2	36	2	36	2	36	2	36	2	36	2	36	2	36	2	36	2	36	2	36
37	10	37	10	37	10	37	10	37	10	37	10	37	10	37	10	37	10	37	10	37	10	37
38	1	38	1	38	1	38	1	38	1	38	1	38	1	38	1	38	1	38	1	38	1	38
39	2	39	2	39	2	39	2	39	2	39	2	39	2	39	2	39	2	39	2	39	2	39
40	1	40	1	40	1	40	1	40	1	40	1	40	1	40	1	40	1	40	1	40	1	40
41	1	41	1	41	1	41	1	41	1	41	1	41	1	41	1	41	1	41	1	41	1	41
42	1	42	1	42	1	42	1	42	1	42	1	42	1	42	1	42	1	42	1	42	1	42
43	10	43	10	43	10	43	10	43	10	43	10	43	10	43	10	43	10	43	10	43	10	43
44	10	44	10	44	10	44	10	44	10	44	10	44	10	44	10	44	10	44	10	44	10	44
45	11	45	11	45	11	45	11	45	11	45	11	45	11	45	11	45	11	45	11	45	11	45
46	4	46	4	46	4	46	4	46	4	46	4	46	4	46	4	46	4	46	4	46	4	46
47	3	47	3	47	3	47	3	47	3	47	3	47	3	47	3	47	3	47	3	47	3	47
48	7	48	7	48	7	48	7	48	7	48	7	48	7	48	7	48	7	48	7	48	7	48
49	6	49	6	49	6	49	6	49	6	49	6	49	6	49	6	49	6	49	6	49	6	49
50	17	50	17	50	17	50	17	50	17	50	17	50	17	50	17	50	17	50	17	50	17	50
51	13	51	13	51	13	51	13	51	13	51	13	51	13	51	13	51	13	51	13	51	13	51
52	3	52	3	52	3	52	3	52	3	52	3	52	3	52	3	52	3	52	3	52	3	52
53	14	53	14	53	14	53	14	53	14	53	14	53	14	53	14	53	14	53	14	53	14	53
54	8	54	8	54	8	54	8	54	8	54	8	54	8	54	8	54	8	54	8	54	8	54
55	7	55	7	55	7	55	7	55	7	55	7	55	7	55	7	55	7	55	7	55	7	55

Table 27 - The results of processing the a priori ranking of children-respondents according to their assessment of their competitive potential on the criteria for ensuring competitiveness and the demand for children's shoes made for them

Expert	**Factor**																					
	X1	**X2**	**X3**	**X4**	**X5**	**X6**	**X7**	**X8**	**X9**	**X 10**	**X 11**	**X 12**	**X 13**	**X 14**	**X 15**	**X 16**	**X 17**	**X 18**	**X 19**	**X 20**	**X 21**	**X 22**	**Q C**
1	5	8	6	2	7	9	10	4	11	16	18	12, 5	15	14	3	19	20	21, 5	17	12, 5	21, 5	1	0,3 3
2	3	2	15	14	8	9	16	5	17	10, 5	13	18	1	19	4	20	6	10, 5	21	22	12	7	0,4 4
3	8	16	22	5	2	10	6	7	11	17, 5	12	14	1	21	3	13	15	17, 5	20	19	4	9	0,5 7
4	11	14	22	15	2	6	12	4	5	7,5	10	20	1	19	3	16	17	7,5	18	21	9	13	0,3 5
5	16	2,5	17	15	18	4	2,5	6	7	14	8	11	1	9	19	22	10	21	20	12	5	13	0,2 8
6	1	2	10	12	7	13	11	3	14	15	8	16	17	21	4	9	20	22	5	6	19	18	0,3 4

7	12	11	14	16	10	9	2	20	8	19	7	18	1	13	22	15	17	6	21	5	3	4	0,29
8	2	19	9	12	8	3	11	20	4	22	7	13	5	17	21	10	14	18	16	1	6	15	0,26
9	10	4	18	3	8	19	9	14	21	15	5	17	1	12	11	16	20	22	13	6	2	7	0,49
10	6	7	17	18	16	14	5	19	13	8	4	9	10	11	22	3	21	12	20	15	1	2	0,30
11	10	5	4	9	3	12	11	8	1	22	2	13	14	16	17	6	20	18	21	7	19	15	0,33
12	8	3	9	13	2	22	14	11	15	19	4	17	6	16	20	10	18	21	12	1	5	7	0,37
13	4	1	9	6	13	15	3	19	14	8	18	20	17	21	5	16	10	2	22	12	7	11	0,27
14	13	14	10	3	1	2	16	15	20	5	21	17	4	11	19	7	18	6	22	9	12	8	0,21
15	7	14	3	11	17	19	4	12	9	21	1	18	5	20	22	15	8	16	2	13	6	10	0,24
16	2	3	5	6	8	4	10	15	7	11	18	16	1	12	21	19	13	14	17	22	20	9	0,39
17	6	15	7	8	11	10	9	1	21	20	16	17	2	12	3	22	19	13	4	18	14	5	0,24
18	3	1	22	6	19	13	14	11	17	18	2	21	12	16	4	5	10	15	20	7	8	9	0,37
19	2	3	6	7	12	11	17	13	18	16	1	20	5	14	19	8	15	9	10	22	21	4	0,43
20	2	12	8	11	14	7	15	10	17	9	16	18	1	20	5	19	4	13	22	6	21	3	0,23
21	1	14	21	9	8	15	16	7	5	6	4	18	19	17	10	20	22	11	12	13	2	3	0,35
22	10	1	19	11	5	12	21	20	6	15,5	7	8	2	9	4	13	18	15,5	17	22	3	14	0,54
23	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	0,38
24	9	1	10	11	3	2	13	12	15	19	8	7	14	18	20	4	17	22	16	21	5	6	0,69
25	20	4	11	18	5	6	2	17	15	16	1	8	10	14	13	7	12	22	9	21	3	19	0,28
26	3	1	10	14	4	5	12	7	19	17	6	21	13	22	8	16	9	20	18	15	2	11	0,69
27	7	2	19	8	1	15	6	20	17	16	3	9	14	13	18	5	22	11	12	21	10	4	0,69
28	8	3	16	9	1	17	6	7	19	18	2	10	15	20	14	4	22	12	13	21	11	5	0,69
29	4	11	7	10	1	9	2	17	14	21	8	19	6	20	13	22	3	18	12	16	5	15	0,41
30	1	3	21	10	8	9	7	14	12	13	11	22	15	17	6	18	19	16	5	20	2	4	0,63
31	13	4	14	16	3	22	7	21	8	17	5	15	6	12	11	18	10	9	20	1	2	19	0,26
32	9	2	10	14	1	16	15	19	17	20	3	4	11	13	12	18	5	21	7	22	6	8	0,46
33	1	9	10	12	11	7	6	5	15	14	13	17	16	18	19	8	21	4	22	20	3	2	0,42
34	12	2	13	11	10	1	18	8	19	17	9	7	14	20	6	3	21	16	22	15	4	5	0,69
35	4	3	15	5	6	7	14	16	8	11	1	20	17	21	12	9	10	2	22	13	18	19	0,36
36	2	4	11	12	1	14	19	20	21	5	18	17	6	22	7	8	10	3	9	13	15	16	0,23
37	10	9	17	11	4	5	15	14	16	13	1	2	19	22	3	18	6	7	8	12	20	21	0,20
38	1	8	9	7	5	15	12	11	14	13	5	10	2	16	18	5	17	20	19	21	3	22	0,48
39	2	5	16	10	9	15	19	11	8	7	1	18	6	21	14	22	12	17	4	20	3	13	0,45
40	1	2	17	14	15	16	8	18	3,5	3,5	5,5	9	7	5,5	10	11	12	13	20	19	22	21	0,25
41	1	3	22	4	2	5	6	13	15	16	17	18	7	19	20	8	9	10	11	12	21	14	0,40
42	1	18	10	17	9	13	16	19	6	7	15	2	14	5	4	20	11	8	21	12	22	3	0,20

43	21	17,5	8,5	15	16	19	21	21	2,5	11	2,5	8,5	2,5	13	8,5	8,5	5,5	2,5	5,5	17,5	13	13	0,17
44	21,5	8,5	12	21,5	17	18	19	8,5	4	20	4	4	4	12	4	4	15	4	10	15	15	12	0,19
45	11	4	18	5	1	2	3	16	17	20	6	19	10	9	15	14	21	12	13	22	7	8	
46	4	2	21	7	18	17	12	6	11	10	5	1	19	9	8	15	22	14	16	20	13	3	0,32
47	3	13	18	9	14	1	2	4	6,5	21,5	10,5	5	15	10,5	8	21,5	6,5	16	20	19	17	12	0,27
48	8	5	17	6	3,5	18	9,5	9,5	7	12	11	14	2	13	3,5	22	21	15	16	20	19	1	0,51
49	6,5	5	16	6,5	19,5	8	21,5	3	9	21,5	10	15	2	14	17	19,5	4	11	13	18	12	1	0,32
50	17	14	21	1	22	8	9	20	5	7	6	10	12	13	11	15	2	16	18	19	3	4	0,21
51	13	1	22	15	9	8	21	6	10	7	12	11	16	14	17	2	20	18	19	5	4	3	0,30
52	3	1	22	12	4	9	8	10	5	15	6	13	16	14	11	17	20	7	18	19	21	2	0,60
53	15	18	19	13	6	7	3	20,5	8	17	1,5	12	16	11	22	5	20,5	4	9	14	10	1,5	0,22
54	8	1	21	2	10	4	13	12	5	20	19	6	18	7	22	9	17	16	15	14	3	11	0,31
55	10	11	16	17	12	21	14	22	13	1,5	1,5	15	18	3,5	19	20	3,5	7,5	6	5	7,5	9	0,18
Rank sums	393	368,5	765,5	559	455	583	600,5	679,5	634,5	772	440,5	732	516,5	815,5	670	715,5	778	723,5	819,5	814	563	516,5	
No heretics.	47	12	76	44	16	37	46	63	87	90	28	52	67	80	73	30	103	73	76	100	37	28	
Coef. concord.		0,16		0,69																			
Pearson's criterion.		183,2		6,55																			

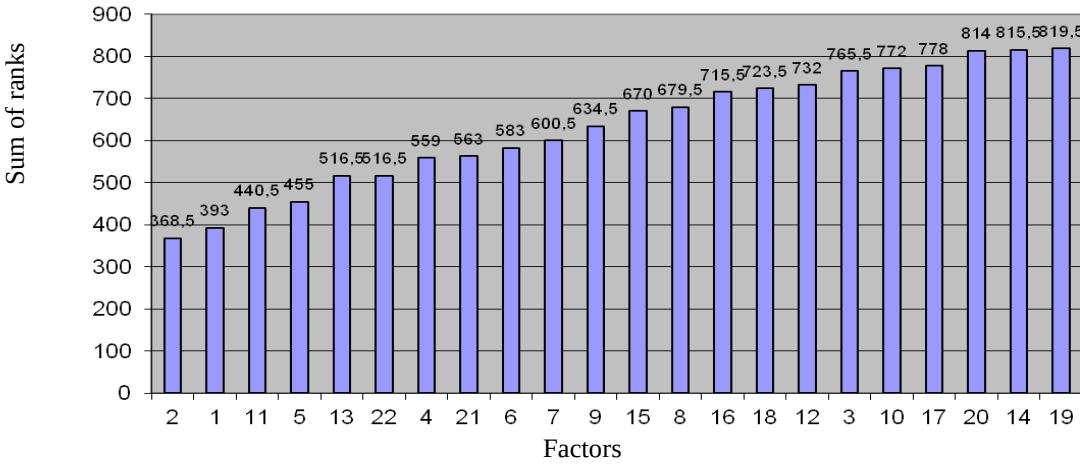

Fig. 13. The results of processing the a priori ranking of children-respondents according to their assessment of their competitive potential on the criteria for ensuring competitiveness and the demand for children's shoes made for them

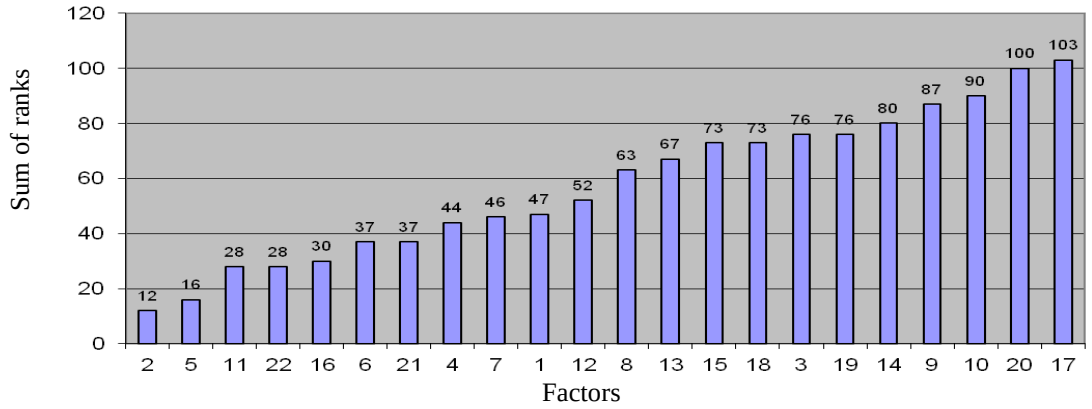

Fig. 14.The results of processing the a priori ranking of children-respondents according to their assessment of their competitive potential on the criteria for ensuring competitiveness and the demand for children's shoes made for them without heretics, that is, without those respondents whose opinion does not coincide with the majority of survey participants

What factors would you, as a buyer, give preference to when assessing the competitive potential of enterprises in the SFD and NCFD regions that produce footwear for children, taking advantage of the privileges - to assign them an appropriate rank from the arithmetic series - preferable starting from 1, and not preferable - a higher figure, ensuring that the requirements are met arithmetic series, namely, avoiding missing digits in the arithmetic series. If you have difficulties in choosing preferences, you can use the "linked ranks", assigning the same rank to two or more factors, but here, too, the requirements of the arithmetic series must be observed (Table 28-30, Fig. 15-16). Assessment of the competence of buyers is given in table. 31

Table 28 - Criteria for assessing the competitiveness and relevance of children's shoes through the eyes of ordinary buyers

No.	List of factors for assessing the competitive potential of enterprises in the regions of the Southern Federal District and the North Caucasus Federal District	Rank
1	Weight	
2	Color	
3	Quality of children's shoes	
4	Functionality of children's shoes	
5	Characteristics of shoe upper materials	
6	Compliance with the direction of fashion	
7	Price	
8	Characteristics of materials for the bottom of shoes	
9	Comfort	
10	The height of the heel of the shoe - up to 40 mm	
11	The height of the heel of the shoe is over 40 mm	
12	Maintainability	
13	Warranty period for children's shoes	
14	What types of children's shoes are preferred: winter	
15	Autumn	
16	Spring	
17	Summer	
18	Bottom fastening strength	

Table 29 - The results of a survey of random buyers according to their assessment of the competitive potential of the criteria for ensuring the competitiveness and demand for manufactured children's shoes

Experts	Factors																	
	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18
1	13	11	9	1	2	6	3	5	7	4	12	14	8	17	15	18	16	10
2	4	18	5	17	1	16	3	13	2	12	11	15	14	8	7	9	10	6

3	3	2	4	9	10	1	5	6	8	11	17	12	7	13	16	15	14	18
4	8	13	4	3	9	1	10	12	2	5	14	6	7	15	16	17	18	11
5	4	3	5	7	2	1	6	12	8	9	10	13	15	14	18	17	16	11
6	5	13	1	3	4	2	11	12	6	7	18	9	8	14	15	16	17	10
7	1	9	4	3	8	10	5	6	2	11	13	12	15	14	16	18	17	7
8	11	12	3	2	9	10	4	5	1	13	15	6	7	14	16	17	18	8
9	18	17	1	2	5	3	4	6	7	10	11	8	12	16	14	13	15	9
10	4	3	16	5	7	1	2	8	9	10	11	12	14	13	18	17	6	15
11	11	4	3	10	12	13	2	1	9	8	15	14	17	16	6	5	7	18
12	5	11	1	4	9	10	3	7	2	12	13	6	14	8	16	17	18	15
13	2	4	1	5	7	3	8	11	6	12	9	10	13	15	14	17	16	18
14	6	9	8	2	3	5	7	11	4	10	13	1	12	14	16	17	15	18
15	3	2	4	5	7	9	11	10	12	6	13	1	14	8	15	16	18	17
16	4	11	3	10	16	1	9	15	2	17	5	14	18	7	6	12	13	8
17	5	13	1	6	11	2	3	12	4	18	9	10	16	15	7	14	17	8
18	6	7	8	11	12	5	2	13	1	14	4	17	18	9	3	15	16	10
19	10	9	5	4	8	1	7	11	3	14	6	17	18	13	2	15	16	12
20	15	14	6	5	3	1	7	4	2	8	13	16	17	10	9	11	18	12
21	10	15	1	2	5	6	8	16	3	4	17	18	12	9	7	14	13	11
22	7	12	2	6	4	1	11	5	3	18	8	13	17	10	9	14	15	16
23	7	10	2	6	4	3	9	5	1	11	14	15	18	12	13	16	17	8
24	7	9	6	8	10	1	2	11	3	12	13	17	18	5	4	14	15	16
25	5	13	6	12	4	2	1	11	3	10	18	14	17	8	15	16	9	7
26	5	3	4	11	13	1	2	12	6	15	7	14	18	10	8	9	17	16
27	8	16	2	3	5	7	1	6	4	10	17	9	18	11	14	13	15	12
28	13	6	1	5	17	2	3	14	4	15	18	7	16	9	8	11	10	12
29	8	17	1	5	9	3	2	7	4	10	18	6	12	14	13	15	16	11
30	5	13	2	10	9	3	4	12	1	11	8	17	18	7	6	14	15	16
31	6	9	8	2	3	5	7	11	4	10	13	1	12	14	16	17	15	18
32	2	4	1	5	7	3	8	11	6	12	9	10	13	15	14	17	16	18
33	11	4	3	10	12	13	2	1	9	8	15	14	17	16	6	5	7	18
34	18	17	1	2	5	3	4	6	7	10	11	8	12	16	14	13	15	9
35	1	9	4	3	8	10	5	6	2	11	13	12	15	14	16	18	17	7
36	4	3	5	7	2	1	6	12	8	9	10	13	15	14	18	17	16	11
37	8	13	4	3	9	1	10	12	2	5	14	6	7	15	16	17	18	11
38	13	11	9	1	2	6	3	5	7	4	12	14	8	17	15	18	16	10
39	4	18	5	17	1	16	3	13	2	12	11	15	14	8	7	9	10	6
40	5	13	2	10	9	3	4	12	1	11	8	17	18	7	6	14	15	16
41	13	6	1	5	17	2	3	14	4	15	7	16	9	8	11	10	12	18
42	8	16	2	3	5	7	1	6	4	10	17	9	18	11	14	13	15	12
43	5	3	4	11	13	1	2	12	6	15	7	14	18	10	8	9	17	16
44	5	13	6	12	4	2	1	11	3	10	18	14	17	8	15	16	9	7
45	7	9	6	8	10	1	2	11	3	12	13	17	18	5	4	14	15	16
46	7	10	2	6	4	3	9	5	1	11	14	15	18	12	13	16	17	8
47	7	12	2	6	4	1	11	5	3	18	8	13	17	10	9	14	15	16
48	10	15	1	2	5	6	8	16	3	4	17	18	12	9	7	14	13	11
49	15	14	6	5	3	1	7	4	2	8	13	16	17	10	9	11	18	12
50	10	9	5	4	8	1	7	11	3	14	6	17	18	13	2	15	16	12
51	6	7	8	11	12	5	2	13	1	14	4	17	18	9	3	15	16	10
52	5	13	1	6	11	2	3	12	4	18	9	10	16	15	7	14	17	8
53	4	11	3	10	16	1	9	15	2	17	5	14	18	7	6	12	13	8

Table 30 - The results of processing the a priori ranking of random buyers according to their assessment of the competitive potential on the criteria for ensuring competitiveness and the demand for shoes made by children

Expert	Factor																		
	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	QC
1																			
2	4	18	5	17	1	16	3	13	2	12	11	15	14	8	7	9	10	6	0,52
3	3	2	4	9	10	1	5	6	8	11	17	12	7	13	16	15	14	18	0,59
4	8	13	4	3	9	1	10	12	2	5	14	6	7	15	16	17	18	11	0,64
5	4	3	5	7	2	1	6	12	8	9	10	13	15	14	18	17	16	11	0,68
6	5	13	1	3	4	2	11	12	6	7	18	9	8	14	15	16	17	10	0,66
7	1	9	4	3	8	10	5	6	2	11	13	12	15	14	16	18	17	7	0,71
8	11	12	3	2	9	10	4	5	1	13	15	6	7	14	16	17	18	8	0,60
9	18	17	1	2	5	3	4	6	7	10	11	8	12	16	14	13	15	9	0,61
10	4	3	16	5	7	1	2	8	9	10	11	12	14	13	18	17	6	15	0,54
11	11	4	3	10	12	13	2	1	9	8	15	14	17	16	6	5	7	18	0,50
12	5	11	1	4	9	10	3	7	2	12	13	6	14	8	16	17	18	15	0,72
13	2	4	1	5	7	3	8	11	6	12	9	10	13	15	14	17	16	18	0,69
14	6	9	8	2	3	5	7	11	4	10	13	1	12	14	16	17	15	18	0,63
15	3	2	4	5	7	9	11	10	12	6	13	1	14	8	15	16	18	17	0,53
16	4	11	3	10	16	1	9	15	2	17	5	14	18	7	6	12	13	8	0,56
17	5	13	1	6	11	2	3	12	4	18	9	10	16	15	7	14	17	8	0,84
18	6	7	8	11	12	5	2	13	1	14	4	17	18	9	3	15	16	10	0,57
19	10	9	5	4	8	1	7	11	3	14	6	17	18	13	2	15	16	12	0,91
20	15	14	6	5	3	1	7	4	2	8	13	16	17	10	9	11	18	12	0,78
21	10	15	1	2	5	6	8	16	3	4	17	18	12	9	7	14	13	11	0,65
22	7	12	2	6	4	1	11	5	3	18	8	13	17	10	9	14	15	16	0,89
23	7	10	2	6	4	3	9	5	1	11	14	15	18	12	13	16	17	8	0,81
24	7	9	6	8	10	1	2	11	3	12	13	17	18	5	4	14	15	16	0,91
25	5	13	6	12	4	2	1	11	3	10	18	14	17	8	15	16	9	7	0,67
26	5	3	4	11	13	1	2	12	6	15	7	14	18	10	8	9	17	16	0,59
27	8	16	2	3	5	7	1	6	4	10	17	9	18	11	14	13	15	12	0,76
28	13	6	1	5	17	2	3	14	4	15	18	7	16	9	8	11	10	12	0,56
29	8	17	1	5	9	3	2	7	4	10	18	6	12	14	13	15	16	11	0,73
30	5	13	2	10	9	3	4	12	1	11	8	17	18	7	6	14	15	16	0,91
31	6	9	8	2	3	5	7	11	4	10	13	1	12	14	16	17	15	18	0,62
32	2	4	1	5	7	3	8	11	6	12	9	10	13	15	14	17	16	18	0,69
33	11	4	3	10	12	13	2	1	9	8	15	14	17	16	6	5	7	18	0,49
34	18	17	1	2	5	3	4	6	7	10	11	8	12	16	14	13	15	9	0,61
35	1	9	4	3	8	10	5	6	2	11	13	12	15	14	16	18	17	7	0,70
36	4	3	5	7	2	1	6	12	8	9	10	13	15	14	18	17	16	11	0,67
37	8	13	4	3	9	1	10	12	2	5	14	6	7	15	16	17	18	11	0,63
38	13	11	9	1	2	6	3	5	7	4	12	14	8	17	15	18	16	10	0,60
39	4	18	5	17	1	16	3	13	2	12	11	15	14	8	7	9	10	6	0,53
40	5	13	2	10	9	3	4	12	1	11	8	17	18	7	6	14	15	16	0,91
41	13	6	1	5	17	2	3	14	4	15	7	16	9	8	11	10	12	18	0,55
42	8	16	2	3	5	7	1	6	4	10	17	9	18	11	14	13	15	12	0,74
43	5	3	4	11	13	1	2	12	6	15	7	14	18	10	8	9	17	16	0,58
44	5	13	6	12	4	2	1	11	3	10	18	14	17	8	15	16	9	7	0,66
45	7	9	6	8	10	1	2	11	3	12	13	17	18	5	4	14	15	16	0,91

46	7	10	2	6	4	3	9	5	1	11	14	15	18	12	13	16	17	8	0,79
47	7	12	2	6	4	1	11	5	3	18	8	13	17	10	9	14	15	16	0,86
48	10	15	1	2	5	6	8	16	3	4	17	18	12	9	7	14	13	11	0,64
49	15	14	6	5	3	1	7	4	2	8	13	16	17	10	9	11	18	12	0,77
50	10	9	5	4	8	1	7	11	3	14	6	17	18	13	2	15	16	12	0,91
51	6	7	8	11	12	5	2	13	1	14	4	17	18	9	3	15	16	10	0,57
52	5	13	1	6	11	2	3	12	4	18	9	10	16	15	7	14	17	8	0,82
53	4	11	3	10	16	1	9	15	2	17	5	14	18	7	6	12	13	8	0,55
Rank sums	387	538	208	331	395	224	272	503	216	585	624	643	773	611	578	750	781	644	
Sum of ranks without heretics	34	53	21	40	46	9	16	57	11	60	48	85	90	37	22	71	76	76	
Coef. concord.		0,474		0,907															
Crete. Pearson		427,6		7,3															

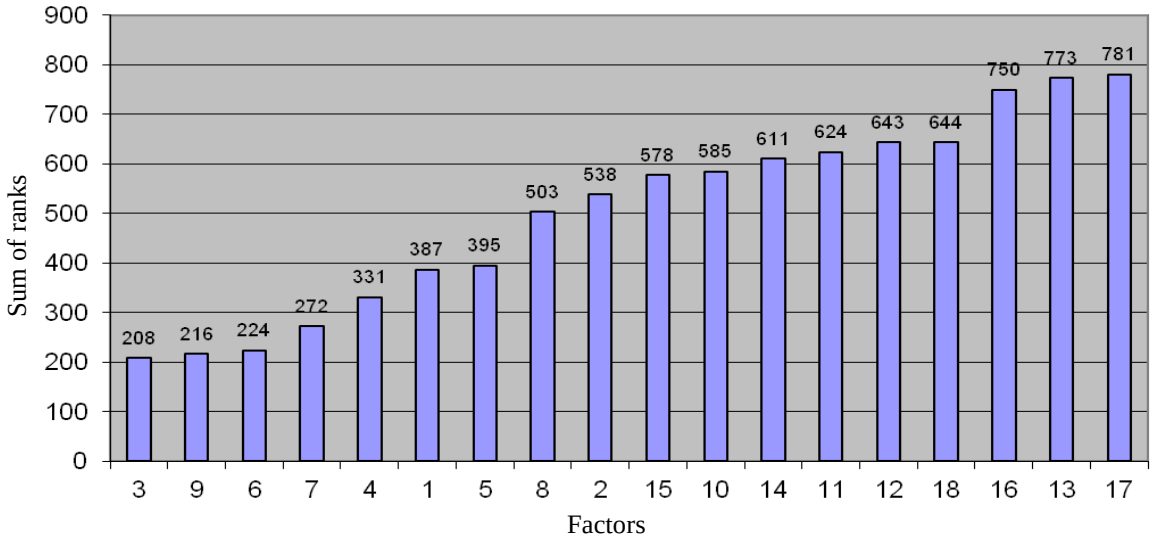

Fig. 15. The results of processing a priori ranking of random buyers according to their assessment of the competitive potential on the criteria for ensuring competitiveness and the demand for shoes made by children

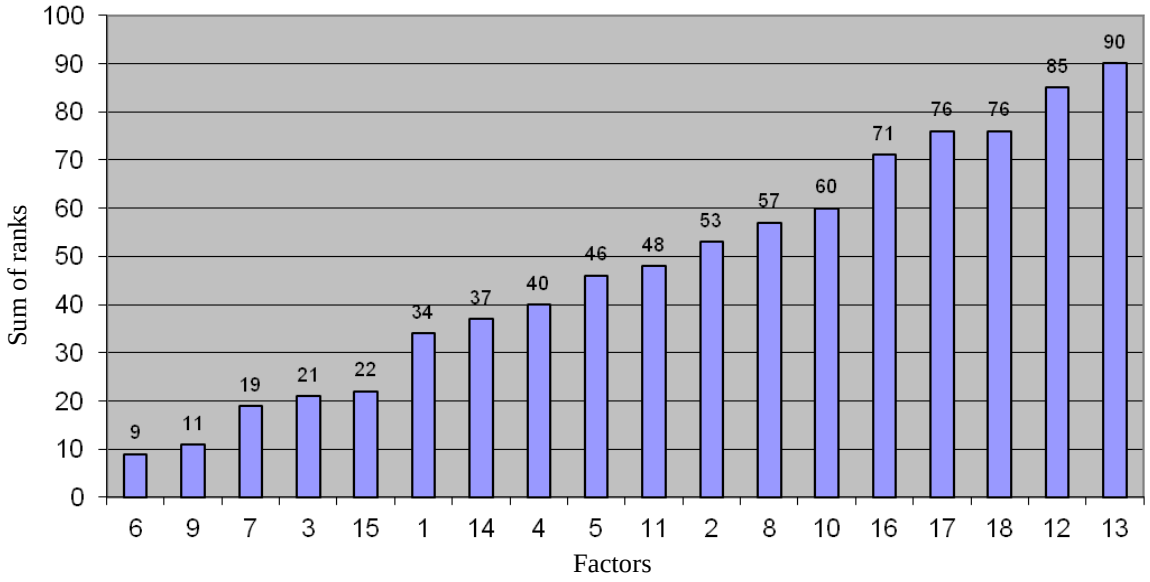

Fig. 16. The results of processing the a priori ranking of random buyers according to their assessment of the competitive potential on the criteria for ensuring the competitiveness and demand for shoes made by children without heretics, that is, without those respondents whose opinion does not coincide with the majority of survey participants

Table 31 - Assessment of the competence of buyers about the demand for the assortment of footwear for children

		Factors																				*Wi*
Experts		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	
1		13	11	9	1	2	6	3	5	7	4	12	14	8	17	15	18	16	10			0,62
2		4	18	5	17	1	16	3	13	2	12	11	15	14	8	7	9	10	6			0,68
3		3	2	4	9	10	1	5	6	8	11	17	12	7	13	16	15	14	18			0,72
4		8	13	4	3	9	1	10	12	2	5	14	6	7	15	16	17	18	11			0,64
5		4	3	5	7	2	1	6	12	8	9	10	13	15	14	18	17	16	11			0,72
6		5	13	1	3	4	2	11	12	6	7	18	9	8	14	15	16	17	10			0,65
7		1	9	4	3	8	10	5	6	2	11	13	12	15	14	16	18	17	7			0,73
8		11	12	3	2	9	10	4	5	1	13	15	6	7	14	16	17	18	8			0,63
9		18	17	1	2	5	3	4	6	7	10	11	8	12	16	14	13	15	9			0,62
10		4	3	16	5	7	1	2	8	9	10	11	12	14	13	18	17	6	15			0,67
11		11	4	3	10	12	13	2	1	9	8	15	14	17	16	6	5	7	18			0,68
12		5	11	1	4	9	10	3	7	2	12	13	6	14	8	16	17	18	15			0,78
13		2	4	1	5	7	3	8	11	6	12	9	10	13	15	14	17	16	18			0,76
14		6	9	8	2	3	5	7	11	4	10	13	1	12	14	16	17	15	18			0,66
15		3	2	4	5	7	9	11	10	12	6	13	1	14	8	15	16	18	17			0,60
16		4	11	3	10	16	1	9	15	2	17	5	14	18	7	6	12	13	8			0,84
17		5	13	1	6	11	2	3	12	4	18	9	10	16	15	7	14	17	8			0,82
18		6	7	8	11	12	5	2	13	1	14	4	17	18	9	3	15	16	10			0,91
19		10	9	5	4	8	1	7	11	3	14	6	17	18	13	2	15	16	12			0,90
20		15	14	6	5	3	1	7	4	2	8	13	16	17	10	9	11	18	12			0,83
21		10	15	1	2	5	6	8	16	3	4	17	18	12	9	7	14	13	11			0,81
22		7	12	2	6	4	1	11	5	3	18	8	13	17	10	9	14	15	16			0,84
23		7	10	2	6	4	3	9	5	1	11	14	15	18	12	13	16	17	8			0,82
24		7	9	6	8	10	1	2	11	3	12	13	17	18	5	4	14	15	16			1,00
25		5	13	6	12	4	2	1	11	3	10	18	14	17	8	15	16	9	7			0,81
26		5	3	4	11	13	1	2	12	6	15	7	14	18	10	8	9	17	16			0,89
27		8	16	2	3	5	7	1	6	4	10	17	9	18	11	14	13	15	12			0,79
28		13	6	1	5	17	2	3	14	4	15	18	7	16	9	8	11	10	12			0,81
29		8	17	1	5	9	3	2	7	4	10	18	6	12	14	13	15	16	11			0,74
30		5	13	2	10	9	3	4	12	1	11	8	17	18	7	6	14	15	16			0,96
31		6	9	8	2	3	5	7	11	4	10	13	1	12	14	16	17	15	18			0,66
32		2	4	1	5	7	3	8	11	6	12	9	10	13	15	14	17	16	18			0,76
33		11	4	3	10	12	13	2	1	9	8	15	14	17	16	6	5	7	18			0,68
34		18	17	1	2	5	3	4	6	7	10	11	8	12	16	14	13	15	9			0,62
35		1	9	4	3	8	10	5	6	2	11	13	12	15	14	16	18	17	7			0,73
36		4	3	5	7	2	1	6	12	8	9	10	13	15	14	18	17	16	11			0,72
37		8	13	4	3	9	1	10	12	2	5	14	6	7	15	16	17	18	11			0,64
38		13	11	9	1	2	6	3	5	7	4	12	14	8	17	15	18	16	10			0,62
39		4	18	5	17	1	16	3	13	2	12	11	15	14	8	7	9	10	6			0,68
40		5	13	2	10	9	3	4	12	1	11	8	17	18	7	6	14	15	16			0,96

41		13	6	1	5	17	2	3	14	4	15	7	16	9	8	11	10	12	18			0,81
42		8	16	2	3	5	7	1	6	4	10	17	9	18	11	14	13	15	12			0,79
43		5	3	4	11	13	1	2	12	6	15	7	14	18	10	8	9	17	16			0,89
44		5	13	6	12	4	2	1	11	3	10	18	14	17	8	15	16	9	7			0,81
45		7	9	6	8	10	1	2	11	3	12	13	17	18	5	4	14	15	16			1,00
46		7	10	2	6	4	3	9	5	1	11	14	15	18	12	13	16	17	8			0,82
47		7	12	2	6	4	1	11	5	3	18	8	13	17	10	9	14	15	16			0,84
48		10	15	1	2	5	6	8	16	3	4	17	18	12	9	7	14	13	11			0,81
49		15	14	6	5	3	1	7	4	2	8	13	16	17	10	9	11	18	12			0,83
50		10	9	5	4	8	1	7	11	3	14	6	17	18	13	2	15	16	12			0,90
51		6	7	8	11	12	5	2	13	1	14	4	17	18	9	3	15	16	10			0,91
52		5	13	1	6	11	2	3	12	4	18	9	10	16	15	7	14	17	8			0,82
53		4	11	3	10	16	1	9	15	2	17	5	14	18	7	6	12	13	8			0,84
54		7	9	6	8	10	3	2	11	1	12	13	17	18	5	4	14	15	16			0,91

What factors would you, as manufacturers of children's shoes, give preference to when assessing the competitive potential of enterprises in the regions of the Southern Federal District and the North Caucasus Federal District, taking advantage of the privileges - to assign them an appropriate rank from the arithmetic series - preferable starting from 1, and not preferable - a higher figure, ensuring that the requirements of the arithmetic series are met, namely, avoiding missing digits in the arithmetic series. If you have difficulties in choosing preferences, you can use "linked ranks", assigning the same rank to two or more factors, but here it is necessary to comply with the requirements of the arithmetic series (Table 32 - 34, Fig. 17 - 18). The assessment of the competence of manufacturers is given in table. 35.

Table 32 - Criteria for assessing the competitiveness and demand for children's shoes through the eyes of shoe manufacturers by enterprises in the regions of the Southern Federal District and the North Caucasus Federal District

No.	List of factors for assessing the competitive potential of enterprises in the regions of the Southern Federal District and the North Caucasus Federal District	Rank
1	Weight	
2	Color	
3	Quality of children's shoes	
4	Functionality of children's shoes	
5	Characteristics of shoe upper materials	
6	Compliance with the direction of fashion	
7	Price	
8	Characteristics of materials for the bottom of shoes	
9	Comfort	
10	The height of the heel of the shoe - up to 40 mm	
11	The height of the heel of the shoe is over 40 mm	
12	Maintainability	
13	Warranty period for children's shoes	

Table 33 - The results of the questionnaire survey of manufacturers to assess their competitive potential on the criteria for ensuring the competitiveness and demand for manufactured children's shoes

Experts	Factors												
	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13
1													
2	9	7	1	4	8	6	2	10	3	11	13	5	12
3	1	3	5	2	8	7	4	9	12	6	13	11	10
4	2	3	1	5	4	8	9	6	10	7	11	13	12

5	9	10	6	7	8	2	1	4	3	5	11	12	13
6	10	9	1	4	3	2	5	6	7	11	12	8	13
7	5	6	1	9	10	13	7	8	2	12	11	4	3
8	5	11	4	1	10	2	3	12	6	9	13	8	7
9	2	7	4	5	6	1	9	3	8	12	13	11	10
10	7	13	2	11	1	6	12	10	3	4	9	8	5
11	9	13	5	1	2	4	3	6	7	8	12	10	11
12	12	13	1	6	7	3	2	8	5	4	9	10	11
13	5	8	2	4	7	10	1	12	11	13	3	9	6
14	5	2	11	4	7	13	8	12	1	6	9	3	10
15	10	13	2	4	6	5	3	11	1	7	12	8	9
16	5	3	1	2	7	6	4	10	8	11	12	9	13
17	3	4	1	7	9	8	5	10	2	11	13	12	6
18	5	6	1	2	6	8	7	3	4	11	12	10	9
19	9	13	2	4	7	5	6	3	1	8	10	12	11
20	10	11	1	2	5	7	3	6	4	12	13	9	8
21	3	8	4	6	10	5	12	7	1	13	9	2	11
22	9	8	2	7	5	6	1	10	3	11	12	13	4
23	2	10	13	11	9	6	8	12	7	5	1	3	4
24	12	4	1	2	8	9	3	7	5	10	13	11	6
25	10	9	1	2	12	3	4	6	5	11	13	7	8
26	5	6	1	7	11	13	2	10	3	9	12	4	8
27	11	10	5	4	1	3	9	2	7	12	13	8	6
28	7	6	5	2	1	8	9	3	4	12	13	11	10
29	9	10	2	3	6	11	8	7	4	12	13	5	1
30	8	10	4	5	1	3	9	2	11	12	13	7	6

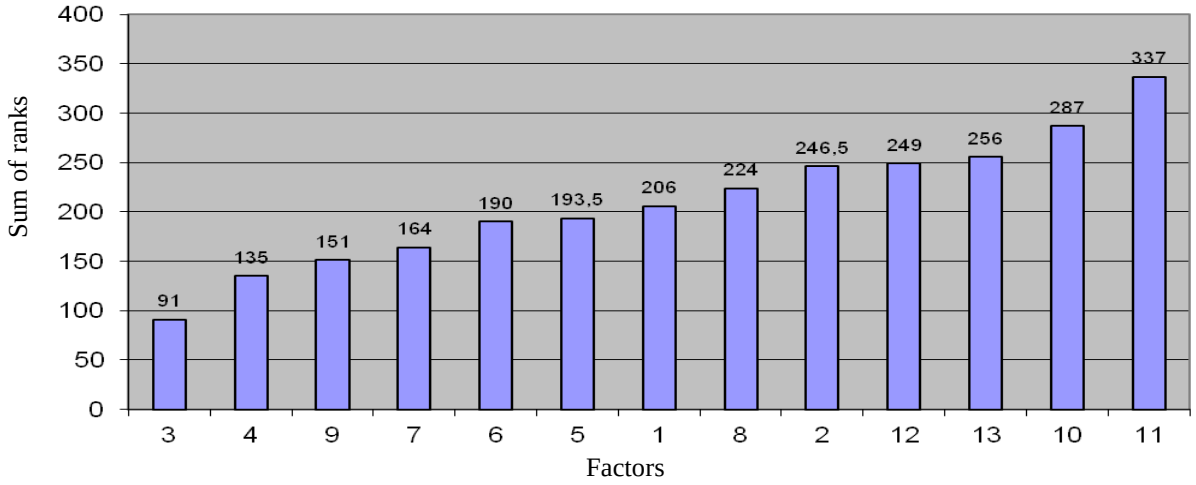

Fig. 17. The results of processing the a priori ranking of manufacturers according to their assessment of their competitive potential on the criteria for ensuring competitiveness and the demand for footwear made by children

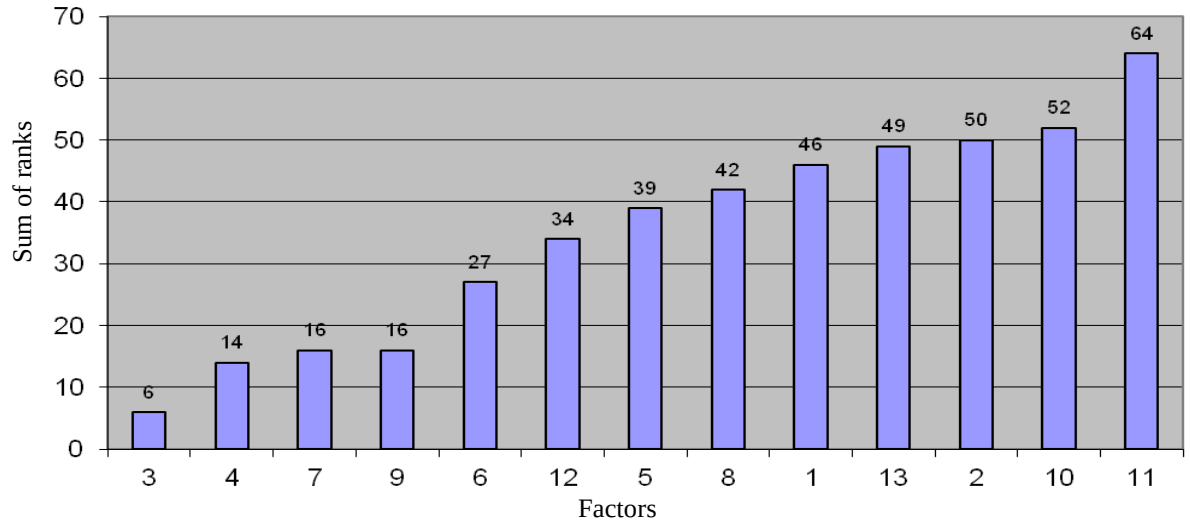

Fig. 18. The results of processing the a priori ranking of manufacturers according to their assessment of their competitive potential on the criteria for ensuring the competitiveness and demand for shoes made by children without heretics, that is, without those respondents whose opinion does not coincide with the opinion of the majority of survey participants

Table 34 - The results of processing the a priori ranking of manufacturers according to their assessment of their competitive potential on the criteria for ensuring the competitiveness and demand for footwear made by children

Expert	Factor													
	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	QC
1														
2	9	7	1	4	8	6	2	10	3	11	13	5	12	0,84
3	1	3	5	2	8	7	4	9	12	6	13	11	10	0,5
4	2	3	1	5	4	8	9	6	10	7	11	13	12	0,52
5	9	10	6	7	8	2	1	4	3	5	11	12	13	0,65
6	10	9	1	4	3	2	5	6	7	11	12	8	13	0,84
7	5	6	1	9	10	13	7	8	2	12	11	4	3	0,46
8	5	11	4	1	10	2	3	12	6	9	13	8	7	0,74
9	2	7	4	5	6	1	9	3	8	12	13	11	10	0,60
10	7	13	2	11	1	6	12	10	3	4	9	8	5	0,43
11	9	13	5	1	2	4	3	6	7	8	12	10	11	0,81
12	12	13	1	6	7	3	2	8	5	4	9	10	11	0,76
13	5	8	2	4	7	10	1	12	11	13	3	9	6	0,45
14	5	2	11	4	7	13	8	12	1	6	9	3	10	0,41
15	10	13	2	4	6	5	3	11	1	7	12	8	9	0,84
16	5	3	1	2	7	6	4	10	8	11	12	9	13	0,68
17	3	4	1	7	9	8	5	10	2	11	13	12	6	0,62
18	5	6,5	1	2	6,5	9	8	3	4	12	13	11	10	0,66
19	9	13	2	4	7	5	6	3	1	8	10	12	11	0,78
20	10	11	1	2	5	7	3	6	4	12	13	9	8	0,84
21	3	8	4	6	10	5	12	7	1	13	9	2	11	0,48
22	9	8	2	7	5	6	1	10	3	11	12	13	4	0,72
23	2	10	13	11	9	6	8	12	7	5	1	3	4	0,38
24	12	4	1	2	8	9	3	7	5	10	13	11	6	0,70
25	10	9	1	2	12	3	4	6	5	11	13	7	8	0,84
26	5	6	1	7	11	13	2	10	3	9	12	4	8	0,54
27	11	10	5	4	1	3	9	2	7	12	13	8	6	0,58
28	7	6	5	2	1	8	9	3	4	12	13	11	10	0,63
29	9	10	2	3	6	11	8	7	4	12	13	5	1	0,55

thirty	206	246,5	91	135	193,5	190	164	224	151	287	337	249	256	
Rank sums	46	50	6	14	39	27	16	42	16	42	64	34	49	
Sum of ranks without heretics	16	1332,25	14161	5625	272,25	400	2116	196	3481	5929	16129	1521	2116	
Quad. off		0,33		0,84										
Coef. concord.		117,14		8,37										
Crete. Pearson	206	246,5	91	135	193,5	190	164	224	151	287	337	249	256	

Table 35 - Assessment of the competence of manufacturers on the demand for the range of footwear for children

	Factors																				*Wi*
Experts	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	
1	9	7	1	4	8	6	2	10	3	11	13	5	12								0,97
2	1	3	5	2	8	7	4	9	12	6	13	11	10								0,66
3	2	3	1	5	4	8	9	6	10	7	11	13	12								0,63
4	9	10	6	7	8	2	1	4	3	5	11	12	13								0,73
5	10	9	1	4	3	2	5	6	7	11	12	8	13								0,87
6	5	6	1	9	10	13	7	8	2	12	11	4	3								0,70
7	5	11	4	1	10	2	3	12	6	9	13	8	7								0,87
8	2	7	4	5	6	1	9	3	8	12	13	11	10								0,71
9	7	13	2	11	1	6	12	10	3	4	9	8	5								0,55
10	9	13	5	1	2	4	3	6	7	8	12	10	11								0,82
11	12	13	1	6	7	3	2	8	5	4	9	10	11								0,78
12	5	8	2	4	7	10	1	12	11	13	3	9	6								0,63
13	5	2	11	4	7	13	8	12	1	6	9	3	10								0,59
14	10	13	2	4	6	5	3	11	1	7	12	8	9								0,90
15	5	3	1	2	7	6	4	10	8	11	12	9	13								0,87
16	3	4	1	7	9	8	5	10	2	11	13	12	6								0,77
17	5	6	1	2	6	8	7	3	4	11	12	10	9								0,83
18	9	13	2	4	7	5	6	3	1	8	10	12	11								0,82
19	10	11	1	2	5	7	3	6	4	12	13	9	8								0,91
20	3	8	4	6	10	5	12	7	1	13	9	2	11								0,79
21	9	8	2	7	5	6	1	10	3	11	12	13	4								0,75
22	2	10	13	11	9	6	8	12	7	5	1	3	4								0,26
23	12	4	1	2	8	9	3	7	5	10	13	11	6								0,79
24	10	9	1	2	12	3	4	6	5	11	13	7	8								0,91
25	5	6	1	7	11	13	2	10	3	9	12	4	8								0,82
26	11	10	5	4	1	3	9	2	7	12	13	8	6								0,68
27	7	6	5	2	1	8	9	3	4	12	13	11	10								0,74
28	9	10	2	3	6	11	8	7	4	12	13	5	1								0,76
29	8	10	4	5	1	3	9	2	11	12	13	7	6								0,65
30	7	10	1	2	8	6	4	9	3	11	13	5	12								0,84

What factors would you - parents - give preference to when assessing the competitive potential of enterprises in the regions of the Southern Federal District and the North Caucasus Federal District, taking advantage of the privileges - to assign them an appropriate rank from the arithmetic series - preferable starting from 1, and not preferable - a higher number, ensuring that the requirements of the arithmetic series are met, and namely, avoiding missing digits in the arithmetic series. If you have difficulties in choosing preferences, you can use the "linked ranks", assigning two or more factors the same rank, but here you must comply with the requirements of the arithmetic series (Table 36 - 38, Fig. 19 - 20). The assessment of the competence of parents is given in table. 39. Summary characteristics of the survey are given in table. 40 - 41.

Table 36 - Criteria for assessing the competitiveness and demand for children's shoes through the eyes of parents

No.	List of factors for assessing the competitive potential of enterprises in the regions of the Southern Federal District and the North Caucasus Federal District	Rank
1	Weight	
2	Color	
3	Quality of children's shoes	
4	Color fastness of materials used for shoe uppers to dry and wet friction and to perspiration	
5	Flexibility	
6	Bottom fastening strength	
7	Price	
8	Comfort	
9	Toe and heel deformation	
10	Maintainability	
11	Warranty period for children's shoes	

Table 37 - The results of the questionnaire survey of parents on their assessment of the competitive potential of the criteria for ensuring the competitiveness and demand for manufactured children's shoes

Experts	Factors										
	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11
1	4	11	2	3	7	5	6	1	8	10	9
2	3	4	1	7	8	6	5	2	11	10	9
3	3	4	1	5	6	8	7	2	10	9	11
4	2	6	1	7	4	11	5	3	9	10	8
5	4	8	1	5	7	9	3	2	10	11	6
6	4	8	1	7	6	5	3	2	11	10	9
7	3	5	1	8	6	9	2	4	11	7	10
8	2	3	4	10	5	8	9	1	11	6	7
9	3	4	1	7	2	6	5	10	11	8	9
10	2	8	1	7	3	5	6	4	10	9	11
11	3	7	1	6	5	8	4	2	10	9	11
12	2	6	3	5	7	9	4	1	11	8	10
13	4	6	3	5	7	10	1	2	11	8	9
14	4	7	3	6	5	10	1	2	11	8	9
15	3	8	4	6	5	7	1	2	11	10	9
16	2	5	4	6	7	10	3	1	11	9	8
17	5	9	2	8	6	4	1	3	10	11	7
18	3	7	2	8	4	9	6	1	10	11	5
19	6	5	1	8	4	7	3	2	9	10	11
20	3	7	4	6	5	8	1	2	9	11	10
21	3	7	4	6	5	8	2	1	9	10	11
22	1	3	5	4	8	7	9	10	2	11	6
23	9	10	1	8	4	3	5	2	11	6	7
24	4	2	3	1	6	7	5	8	11	10	9
25	5	11	1	4	2	3	10	6	7	9	8
26	1	7	6	8	5	9	10	2	11	3	4
27	4	9	6	7	5	3	10	2	1	11	8
28	2	1	3	8	10	9	4	7	6	11	5
29	4	7	1	2	8	3	5	10	6	9	11

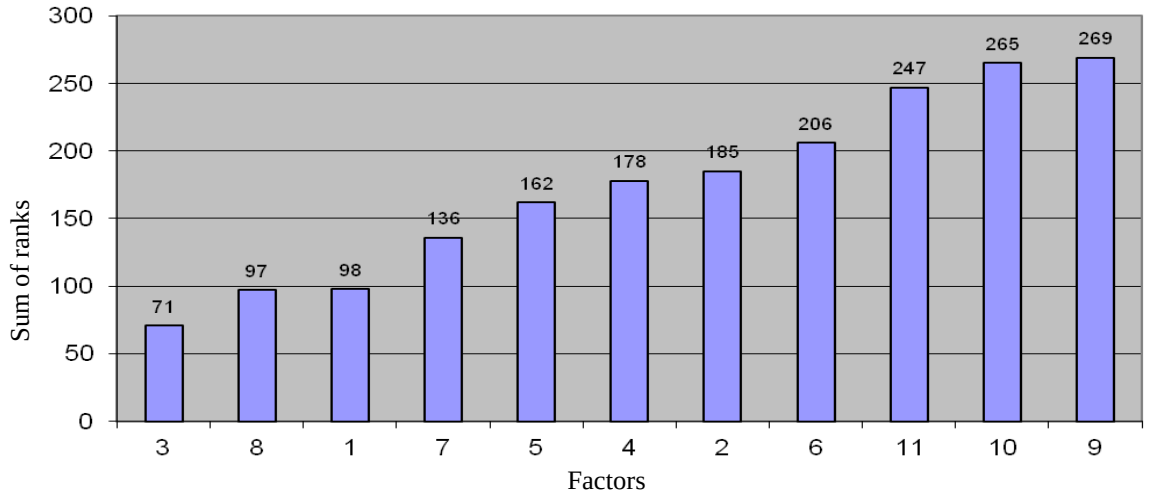

Fig. 19. The results of processing the a priori ranking of parents according to their assessment of their competitive potential on the criteria for ensuring competitiveness and the demand for shoes made by children

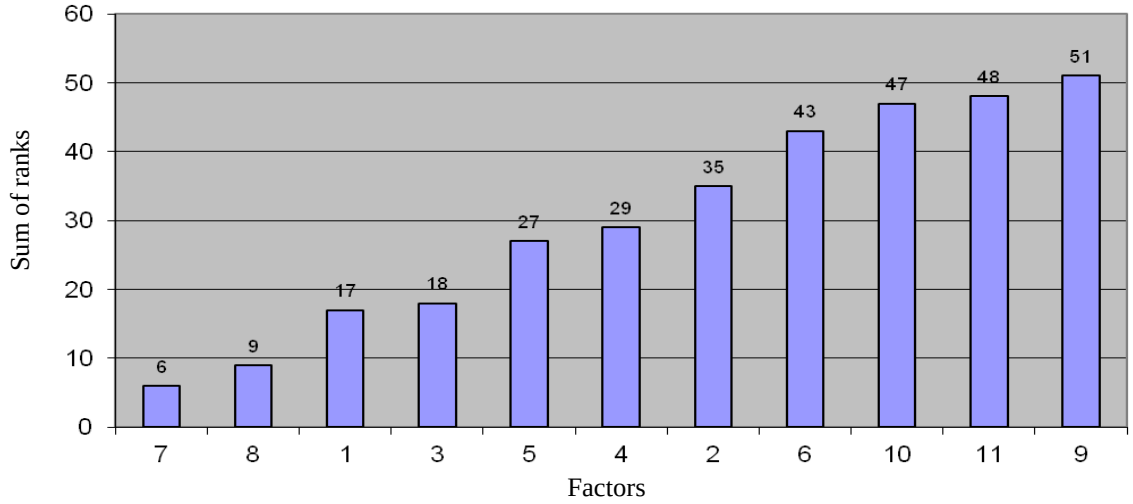

Fig. 20. The results of processing the a priori ranking of parents according to their assessment of their competitive potential on the criteria for ensuring the competitiveness and demand for shoes made by children without heretics, that is, without those respondents whose opinion does not coincide with the opinion of the majority of survey participants

Table 38 - The results of processing the a priori ranking of parents according to their assessment of their competitive potential on the criteria for ensuring competitiveness and the demand for shoes made by children

Expert	Factor											
	X1	**X2**	**X3**	**X4**	**X5**	**X6**	**X7**	**X8**	**X9**	**X10**	**X11**	**QC**
1	4	11	2	3	7	5	6	1	8	10	9	0,81
2	3	4	1	7	8	6	5	2	11	10	9	0,86
3	3	4	1	5	6	8	7	2	10	9	11	0,86
4	2	6	1	7	4	11	5	3	9	10	8	0,88
5	4	8	1	5	7	9	3	2	10	11	6	0,89
6	4	8	1	7	6	5	3	2	11	10	9	0,90
7	3	5	1	8	6	9	2	4	11	7	10	0,92
8	2	3	4	10	5	8	9	1	11	6	7	0,80
9	3	4	1	7	2	6	5	10	11	8	9	0,74
10	2	8	1	7	3	5	6	4	10	9	11	0,84
11	3	7	1	6	5	8	4	2	10	9	11	0,92

12	2	6	3	5	7	9	4	1	11	8	10	0,84
13	4	6	3	5	7	10	1	2	11	8	9	0,94
14	4	7	3	6	5	10	1	2	11	8	9	0,94
15	3	8	4	6	5	7	1	2	11	10	9	0,94
16	2	5	4	6	7	10	3	1	11	9	8	0,93
17	5	9	2	8	6	4	1	3	10	11	7	0,83
18	3	7	2	8	4	9	6	1	10	11	5	0,85
19	6	5	1	8	4	7	3	2	9	10	11	0,87
20	3	7	4	6	5	8	1	2	9	11	10	0,94
21	3	7	4	6	5	8	2	1	9	10	11	0,94
22	1	3	5	4	8	7	9	10	2	11	6	0,55
23	9	10	1	8	4	3	5	2	11	6	7	0,72
24	4	2	3	1	6	7	5	8	11	10	9	0,77
25	5	11	1	4	2	3	10	6	7	9	8	0,64
26	1	7	6	8	5	9	10	2	11	3	4	0,61
27	4	9	6	7	5	3	10	2	1	11	8	0,59
28	2	1	3	8	10	9	4	7	6	11	5	0,70
29	4	7	1	2	8	3	5	10	6	9	11	0,67
Rank sums	98	185	71	178	162	206	136	97	269	265	247	
Sum of ranks without heretics	17	35	18	29	27	43	6	9	51	47	48	
Coef. concord.		0,52		0,94								
Crete. Pearson		149,5		8,1								

Table 39 - Assessment of the competence of parents about the demand for the range of footwear for children

		Factors																			***Wi***
Experts		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	
1		4	11	2	3	7	5	6	1	8	10	9										0,84
2		3	4	1	7	8	6	5	2	11	10	9										0,88
3		3	4	1	5	6	8	7	2	10	9	11										0,86
4		2	6	1	7	4	11	5	3	9	10	8										0,90
5		4	8	1	5	7	9	3	2	10	11	6										0,91
6		4	8	1	7	6	5	3	2	11	10	9										0,93
7		3	5	1	8	6	9	2	4	11	7	10										0,90
8		2	3	4	10	5	8	9	1	11	6	7										0,69
9		3	4	1	7	2	6	5	10	11	8	9										0,71
10		2	8	1	7	3	5	6	4	10	9	11										0,86
11		3	7	1	6	5	8	4	2	10	9	11										0,95
12		2	6	3	5	7	9	4	1	11	8	10										0,93
13		4	6	3	5	7	10	1	2	11	8	9										0,94
14		4	7	3	6	5	10	1	2	11	8	9										0,95
15		3	8	4	6	5	7	1	2	11	10	9										0,98
16		2	5	4	6	7	10	3	1	11	9	8										0,93
17		5	9	2	8	6	4	1	3	10	11	7										0,90
18		3	7	2	8	4	9	6	1	10	11	5										0,86
19		6	5	1	8	4	7	3	2	9	10	11										0,92
20		3	7	4	6	5	8	2	1	9	10	11										0,99
21		1	3	5	4	8	7	9	10	2	11	6										0,48
22		9	10	1	8	4	3	5	2	11	6	7										0,69
23		4	2	3	1	6	7	5	8	11	10	9										0,75
24		5	11	1	4	2	3	10	6	7	9	8										0,60
25		1	7	6	8	5	9	10	2	11	3	4										0,55

26		4	9	6	7	5	3	10	2	1	11	8									0,58
27		2	1	3	8	10	9	4	7	6	11	5									0,69
28		4	7	1	2	8	3	5	10	6	9	11									0,65
29		3	7	4	6	5	8	1	2	9	11	10									0,94

Table 40 - Summary characteristics of the results of the survey of respondents - children, their parents, buyers and manufacturers to assess the competitive potential of shoe enterprises in the regions of the Southern Federal District and the North Caucasus Federal District

Results of the survey of children	Parent Survey Results	Customer survey results	Producer survey results
2 - Quality of children's shoes	3 - Quality of children's shoes	3 - Quality of children's shoes	3 - Quality of children's shoes
1 - Toe shape	8 - Comfort	9 - Comfort	4 - Functionality of children's shoes
11 - Weight	1 - Weight	6 - Compliance with the direction in fashion	9 - Comfort
5 - Comfort	7 - Price	7 - Price	7 - Price
13 –- Materials for the bottom of shoes	5 - Flexibility	4 - Functionality of children's shoes	6 - Compliance with the direction in fashion
22 - Compliance with the direction in fashion	4 - Color fastness of materials used for shoe uppers to dry and wet friction and to perspiration	1 - Weight	5 - Characteristics of materials for the upper of the shoe
4 - Price of children's shoes	2 - Color	5 - Characteristics of materials for the upper of the shoe	1 - Weight
21 - Variety of assortment of shoes for children in shops and shopping centers	6 - Strength of fastening of the bottom of the shoe	8 - Characteristics of materials for the bottom of the shoe	8 - Characteristics of materials for the bottom of the shoe
6 - The level of service for parents and children in shops and shopping centers	11 - Warranty period for children's shoes	2 - Color	2 - Color
7 - Color	10 - Maintainability	15 - What types of children's shoes are preferred: autumn	12 - Maintainability
9 - The height of the heel is up to 40 mm	9 - Deformation of the toe and heel	10 - The height of the heel of the shoe - up to 40 mm	13 - Warranty period for children's shoes
15 - Place of sale of shoes for children - interior of a store, or a shopping center		14 - What types of children's shoes are preferred: winter	10 - The height of the heel of the shoe - up to 40 mm
8 - Warranty period for children's shoes		11 - The height of the heel of the shoe - over 40 mm	11 - The height of the heel of the shoe - over 40 mm
16 - What types of children's shoes are preferred: winter		12 - Maintainability	
18 - What types of children's shoes are preferred: spring		18 - Strength of fastening of the bottom of the shoe	
12 - Repairability of children's shoes, its expediency		16 - What types of children's shoes are preferred: spring	
3 - Flexibility of children's shoes		13 - Warranty period for children's shoes	
10 - The height of the heel of the shoe - over 40 mm		17 - What types of children's shoes are preferred: summer	

17 - What types of children's shoes are preferred: autumn			
20 - Strength of fastening of the bottom of the shoe			
14 - Materials for the upper shoe			
19 - What types of children's shoes are preferred: summer			
0.16 <W <0.69	0.52 <W <0.94	0.47 <W <0.91	0.33 <W <0.84

Table 41 - Summary characteristics of the results of the survey of respondents - children, their parents, buyers and manufacturers on the assessment of the competitive potential of shoe enterprises in the regions of the Southern Federal District and the North Caucasus Federal District, but without heretics, whose opinion does not coincide with the majority of respondents who participated in the survey

Results of the survey of children	Parent Survey Results	Customer survey results	Producer survey results
2 - Quality of children's shoes	7 - Price	6 - Compliance with the direction in fashion	3 - Quality of children's shoes
5 - Comfort	8 - Comfort	9 - Comfort	4 - Functionality of children's shoes
11 - Weight	1 - Weight	7 - Price	7 - Price
22 - Compliance with the direction in fashion	3 - Quality of children's shoes	3 - Quality of children's shoes	9 - Comfort
16 - What types of children's shoes are preferred: winter	5 - Flexibility	15 - What types of children's shoes are preferred: autumn	6 - Compliance with the direction in fashion
6 - The level of service for parents and children in shops and shopping centers	4 - Color fastness of materials used for shoe uppers to dry and wet friction and to perspiration	1 - Weight	12 - Maintainability
21 - Variety of assortment of shoes for children in shops and shopping centers	2 - Color	14 - What types of children's shoes are given preference: winter	5 - Characteristics of materials for the upper of the shoe
4 - Price of children's shoes	6 - Strength of fastening of the bottom of the shoe	4 - Functionality of children's shoes	8 - Characteristics of materials for the bottom of the shoe
7 - Color	10 - Maintainability	5 - Characteristics of materials for the upper of the shoe	1 - Weight
1 - Toe shape	11 - Warranty period for children's shoes	11 - The height of the heel of the shoe - over 40 mm	13 - Warranty period for children's shoes
12 - Repairability of children's shoes, its expediency	9 - Deformation of the toe and heel	2 - Color	2 - Color
8 - Warranty period for children's shoes		8 - Characteristics of materials for the bottom of the shoe	10 - The height of the heel of the shoe - up to 40 mm
13 –- Materials for the bottom of shoes		10 - The height of the heel of the shoe - up to 40 mm	11 - The height of the heel of the shoe - over 40 mm
15 - Place of sale of shoes for children - interior of a store, or a shopping center		16 - What types of children's shoes are preferred: spring	
18 - What types of children's shoes are preferred: spring		17 - What types of children's shoes are preferred: summer	

3 - Flexibility of children's shoes		18 - Strength of fastening of the bottom of the shoe	
19 - What types of children's shoes are preferred: summer		12 - Maintainability	
14 - Materials for the upper shoe		13 - Warranty period for children's shoes	
9 - The height of the heel is up to 40 mm			
10 - The height of the heel of the shoe - over 40 mm			
20 - Strength of fastening of the bottom of the shoe			
17 - What types of children's shoes are preferred: autumn			
0.16 <W <0.69	0.52 <W <0.94	0.47 <W <0.91	0.33 <W <0.84

What indicators would you prefer when analyzing and researching the status of the concept of "Attractiveness of goods", using the privileges - to assign them the appropriate rank from the arithmetic series - preferable starting from 1, and not preferred - a higher digit, ensuring that the requirements of the arithmetic series are met, namely avoiding missing digits in the arithmetic series. If you have difficulties in choosing preferences, you can use the "linked ranks", assigning two or more factors the same rank, but even here it is necessary to comply with the requirements of the arithmetic series (Table 42 - 44, Fig. 21 - 22). Comparative characteristics of the opinions of experts are given in table. 45.

Table 42 - Analysis and study of the status of the concept of "Product attractiveness"

No.	Product attractiveness indicators	Rank
1	Feeling the need to buy a product	
2	Reliability of goods	
3	Manufacturer's responsibility for the quality of the goods	
4	Completeness of goods	
5	Service courtesy	
6	Trust in the seller, manufacturer	
7	Impressive warranty period	
8	Product availability	
9	Communication with the seller	
10	Mutual understanding with the seller, his interest	
11	Service culture	
12	Affordability	
13	Customer satisfaction	
14	The level of readiness of the consumer to make a purchase	
15	The level of interest of the manufacturer in the formation of the attractiveness of the product	
16	Consumer buying opportunity	
17	Manufacturer credibility	
18	Consumer communication	
19	Presence of opinion of an earlier made purchase of an ideal product	
20	The consumer's need to buy an attractive, original product	
21	The relevance of this purchase for the buyer	
22	Possibility of subsequent exchange of goods	
23	Availability of several necessary functions for the product	
24	Modern design	
25	Payment method for purchase	
26	Ease of operation of the product	
27	Organization and availability of service support for purchased goods	

Table 43 - The results of the questionnaire survey of leading experts, teachers and merchandising students on the influence of the status of the concept "Attractiveness of goods" on import substitution of light industry products in the regions of the Southern Federal District and the North Caucasus Federal District

Experts	Factors																											
	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25	X26	X27
Lecturer one	2	1	3	6	19	11	15	9	22	14	23	4	12	27	17	25	7	18	13	20	5	16	26	21	10	8	24
Leading 2	2	1	3	24	9	8	21	17	22	10	7	4	16	26	12	23	18	20	25	19	5	27	11	15	14	13	6
specialist 3	5	6	7	12	13	14	15	4	16	17	5	3	17	18	19	2	23	20	7	17	1	21	8	9	10	11	22
4	24	4	8	10	11	3	12	7	24	2	1	26	18	20	19	5	9	13	16	21	14	15	17	22	23	6	25
5	25	4	5	10	11	3	12	6	13	14	15	1	20	22	21	2	26	16	17	23	24	18	8	27	9	7	19
6	7	2	1	3	17	18	4	8	25	26	27	9	10	11	19	12	5	24	13	23	14	20	6	22	15	21	18
7	2	5	4	3	26	17	6	16	27	25	18	1	19	20	15	7	8	24	9	21	10	22	11	12	23	14	13
8	1	3	11	12	13	5	6	5	12	14	6	7	8	9	10	12	5	3	2	1	12	13	15	11	1	2	3
9	1	3	11	22	5	15	16	14	4	8	6	2	13	19	17	24	12	18	4	23	21	7	26	9	10	20	25
10	1	7	10	17	18	19	15	8	20	21	16	2	9	6	22	11	12	11	13	14	3	23	4	25	24	5	26
11	1	11	3	5	16	17	6	7	21	22	18	2	23	12	13	19	24	25	8	9	14	26	4	27	20	15	10
12	2	8	9	13	23	22	7	12	21	20	27	11	4	5	24	1	6	19	18	14	3	25	10	15	26	16	17
13	1	2	18	16	17	14	15	11	13	12	10	9	19	26	20	8	7	25	24	6	5	21	22	3	27	4	23
14	3	1	4	11	7	5	6	8	10	9	19	2	25	15	22	13	12	26	20	21	14	15	16	23	24	17	18
15	1	19	18	17	22	4	6	3	26	25	24	2	21	15	15	14	12	13	5	11	6	20	7	10	9	8	23
16	13	4	8	23	20	7	19	12	11	10	18	2	21	24	9	22	5	25	3	14	1	26	15	6	27	16	17
17	1	5	10	11	16	7	12	24	17	18	15	8	3	19	27	23	4	25	22	21	2	20	9	6	26	13	14
18	1	3	14	10	21	22	11	7	20	9	8	2	6	23	13	18	25	19	12	17	16	26	27	5	4	24	15
19	4	1	8	9	3	10	19	7	11	2	18	6	15	17	16	12	14	26	13	21	27	22	23	24	20	5	25
20	4	2	3	1	16	7	5	6	14	17	13	9	8	19	22	12	18	11	19	21	23	24	20	20	25	15	10
21	1	5	6	2	23	7	22	24	21	20	18	3	16	19	17	15	14	25	13	12	4	11	27	8	26	9	10
22	4	1	2	3	6	5	7	8	22	10	9	11	12	25	20	14	23	15	21	13	16	18	17	19	27	24	26
23	9	1	2	4	14	13	26	3	15	16	17	4	10	11	18	5	6	12	19	20	7	21	8	23	22	24	25
24	5	19	20	21	27	6	23	4	26	25	24	2	1	7	8	3	9	10	11	12	13	18	14	17	16	15	22
25	2	5	12	19	6	26	13	7	18	20	21	1	23	22	17	16	8	27	9	3	4	24	10	11	15	25	14
26	7	5	1	4	8	6	14	9	24	15	26	20	16	10	21	25	17	11	27	3	2	18	22	12	23	19	13
Leading 27	5	3	11	15	21	6	20	12	7	19	22	2	27	10	13	16	26	24	23	18	1	17	4	8	25	9	14
specialist 28	14	3	15	13	12	22	26	6	20	21	5	2	18	19	17	4	7	9	8	10	11	25	16	1	23	24	27
Lecturer 29	14	3	15	13	12	22	26	6	20	21	5	2	18	19	17	4	7	9	8	10	11	25	16	1	23	24	26

Student 30	14	3	15	13	12	22	26	6	20	21	5	2	18	19	17	4	7	9	8	10	11	25	16	1	23	24	27
31	14	3	15	13	12	22	26	6	10	21	5	2	18	19	17	4	7	9	8	10	11	25	16	1	23	24	27
32	11	1	7	14	18	12	8	3	17	19	21	2	23	26	13	25	4	24	22	15	16	27	6	5	20	9	10
33	2	8	1	25	23	18	9	5	24	21	22	6	18	10	11	13	12	20	7	14	4	19	15	3	26	16	17
34	5	6	11	18	12	9	13	3	23	19	22	4	8	1	20	7	10	25	14	16	2	24	15	21	26	17	12
35	3	3	10	9	9	8	8	5	19	17	11	4	18	1	18	11	2	15	16	14	2	6	7	13	12	12	7
36	3	3	13	12	11	10	9	5	25	22	14	4	23	1	24	9	15	20	21	19	2	6	7	18	17	16	8
37	3	2	13	12	11	10	9	5	26	22	14	4	23	24	25	9	15	20	21	19	1	6	7	17	18	16	8
38	1	2	1	4	4	2	5	11	13	14	6	3	1	21	12	7	8	15	16	18	1	19	9	2	20	17	10
39	9	2	8	12	21	11	27	10	10	20	15	3	22	13	7	24	6	16	25	23	1	26	17	4	5	18	20
40	11	1	9	22	6	25	12	7	15	26	24	2	10	18	14	8	19	27	17	13	3	21	23	4	20	5	16
41	10	4	17	23	5	11	24	1	18	12	25	2	19	6	13	3	26	14	20	7	8	15	21	9	16	22	27
42	27	5	20	19	24	4	10	18	17	9	26	1	11	12	13	23	3	25	21	6	2	14	7	8	15	16	22
43	1	5	6	12	26	13	14	15	23	24	25	7	8	16	20	18	21	17	27	2	3	19	4	11	22	9	10
44	9	1	22	14	6	17	7	2	23	16	5	10	11	24	15	25	21	13	12	20	4	18	26	19	8	3	27
45	3	14	1	7	17	12	26	19	11	22	2	23	25	18	6	24	15	8	27	20	16	4	21	9	10	13	5
46	2	11	1	13	21	22	12	24	23	27	25	3	14	4	10	9	5	18	17	6	20	16	26	7	15	19	8
47	2	3	8	6	20	19	12	18	21	22	23	5	9	6	13	8	9	4	7	10	1	11	14	3	15	17	16
48	1	6	7	13	14	8	15	9	24	23	22	10	11	2	12	3	26	16	27	4	5	25	17	21	20	18	19
49	5	1	2	4	19	16	6	7	22	23	24	8	11	12	13	9	17	25	18	14	3	26	10	20	15	17	21
50	1	3	4	5	7	6	2	8	10	9	11	12	16	13	14	17	15	18	22	23	21	20	24	27	26	25	19
51	1	3	2	9	12	11	10	4	18	5	19	6	7	13	15	14	21	24	23	17	27	26	25	22	8	20	16
52	19	1	2	6	4	20	5	6	22	7	21	8	9	23	26	10	11	27	25	12	13	14	16	15	17	24	18
53	1	3	7	9	11	12	10	8	14	15	16	4	17	18	21	6	20	23	24	25	2	5	13	22	26	21	19
54	1	2	6	3	12	18	15	13	16	19	14	4	21	9	5	17	24	22	11	7	10	20	26	8	27	25	23
55	16	2	17	12	10	13	18	14	19	11	9	8	1	22	20	21	7	27	23	3	4	24	5	6	26	15	25
56	16	2	17	12	10	13	18	14	19	11	9	8	1	22	20	21	7	27	23	3	4	24	5	6	26	15	25
57	6	7	8	23	25	24	9	17	27	22	18	10	26	11	19	12	21	20	13	1	2	5	3	4	14	15	16
58	3	10	16	1	8	22	27	9	18	13	2	7	25	4	17	26	5	11	21	24	12	6	20	15	23	14	19
59	1	6	5	10	4	7	3	8	2	9	13	24	12	15	22	23	14	21	16	27	26	11	20	25	17	19	18
60	3	5	11	6	24	25	2	23	26	27	22	20	21	19	18	7	15	16	17	1	12	13	8	14	9	11	10
61	19	4	3	2	5	15	24	1	14	25	13	6	12	10	11	26	10	16	23	19	9	21	22	20	17	7	8
62	10	17	18	3	13	23	11	9	24	4	25	12	2	19	15	27	5	20	26	14	1	22	21	6	8	16	7
63	6	2	1	16	24	8	7	23	25	26	27	3	17	18	19	9	4	20	21	10	5	13	11	12	22	14	15
64	3	2	3	4	2	1	4	5	4	5	3	2	5	5	6	7	4	5	5	4	7	8	5	4	3	8	6
65	14	2	1	7	4	8	15	5	11	9	6	3	10	25	19	21	12	23	20	18	13	24	17	27	26	16	22

66	26	7	6	20	2	9	10	18	27	11	1	5	8	19	14	4	25	21	23	3	15	12	22	17	24	13	16
67	7	1	14	20	18	24	3	13	27	8	19	20	10	23	15	22	4	25	5	17	6	16	26	21	9	12	11
68	3	1	14	15	20	4	23	2	26	16	6	4	24	25	22	19	18	17	13	11	5	6	12	10	8	7	9
69	1	13	2	14	21	22	15	3	23	24	25	4	5	26	16	6	7	17	20	8	9	27	10	18	11	19	12
70	2	9	2	3	10	12	21	1	11	13	14	15	16	22	26	4	25	17	20	5	6	24	18	23	19	7	8
71	5	1	4	12	18	11	14	13	16	17	15	6	7	25	19	2	3	20	26	23	8	22	21	9	24	10	24
72	14	1	13	2	11	12	19	15	16	17	18	3	8	20	21	22	23	7	26	25	24	6	5	4	9	10	27
73	25	1	4	5	14	24	6	2	17	23	22	3	16	21	18	7	8	20	13	15	9	15	10	11	19	15	12
74	2	7	12	16	4	13	17	10	14	8	15	22	3	10	6	5	21	23	25	20	9	11	24	1	26	19	18
75	11	1	2	12	27	13	3	10	26	25	24	9	14	23	15	21	16	17	18	19	4	8	5	7	20	22	6
Student 76	12	9	2	24	14	8	25	4	20	15	22	5	6	18	13	19	7	21	16	17	1	23	13	12	3	11	10
Etalon 77	2	1	3	4	13	14	5	15	16	17	18	1	6	19	7	8	9	9	10	2	6	11	7	3	12	5	4

Table 44- The results of processing questionnaires received with participation in a survey of leading experts, teachers and students-commodity experts on the impact of the status of the concept of "Attractiveness of goods" on import substitution of light industry products in the regions of the Southern Federal District and the North Caucasus Federal District

Expert	Factor																											
	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20	X21	X22	X23	X24	X25	X26	X27	QC
1	2	1	3	6	19	11	15	9	22	14	23	4	12	27	17	25	7	18	13	20	5	16	26	21	10	8	24	0,48
2	2	1	3	24	9	8	21	17	22	10	7	4	16	26	12	23	18	20	25	19	5	27	11	15	14	13	6	0,42
3	5,5	7	8,5	14	15	16	17	4	18	20	5,5	3	20	22	23	2	27	24	8,5	20	1	25	10	11	12	13	26	0,46
4	24,5	4	8	10	11	3	12	7	24,5	2	1	27	18	20	19	5	9	13	16	21	14	15	17	22	23	6	26	0,27
5	25	4	5	10	11	3	12	6	13	14	15	1	20	22	21	2	26	16	17	23	24	18	8	27	9	7	19	0,29
6	7	2	1	3	17	16	4	8	25	26	27	9	10	11	19	12	5	24	13	23	14	20	6	22	15	21	18	0,75
7	2	5	4	3	26	17	6	16	27	25	18	1	19	20	15	7	8	24	9	21	10	22	11	12	23	14	13	0,75
8	8	6	18,5	21,5	24,5	10	12,5	10	21,5	26	12,5	14	15	16	17	21,5	10	6	3,5	1,5	21,5	24,5	27	18,5	1,5	3,5	6	0,26
9	1	3	12	23	6	16	17	15	4,5	9	7	2	14	20	18	25	13	19	4,5	24	22	8	27	10	11	21	26	0,28
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61	19,5	4	3	2	5	15	25	1	14	26	13	6	12	18	11	27	10	16	24	19,5	9	22	23	21	17	7	8	0,37
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63	6	2	1	16	24	8	7	23	25	26	27	3	17	18	19	9	4	20	21	10	5	13	11	12	22	14	15	0,75
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66	26	7	6	20	2	9	10	18	27	11	1	5	8	19	14	4	25	21	23	3	15	12	22	17	24	13	16	0,29
67	7	1	14	2	18	24	3	13	27	8	19	20	10	23	15	22	4	25	5	17	6	16	26	21	9	12	11	0,33
68	3	1	15	16	21	22	24	2	27	17	6,5	4	25	26	23	20	19	18	14	12	5	6,5	13	11	9	8	10	0,37
69	1	13	2	14	21	22	15	3	23	24	25	4	5	26	16	6	7	17	20	8	9	27	10	18	11	19	12	0,55
70	2,5	10	2,5	4	11	13	22	1	12	14	15	16	17	23	27	5	26	18	21	6	7	25	19	24	20	8	9	0,39
71	5	1	4	12	18	11	14	13	16	17	15	6	7	26	19	2	3	20	27	23	8	22	21	9	24,5	10	24,5	0,56
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73	27	1	4	5	14	26	6	2	19	25	24	3	18	23	20	7	8	22	13	16	9	16	10	11	21	16	12	0,52
74	2	7	13	17	4	14	18	10,5	15	8	16	23	3	10,5	6	5	22	24	26	21	9	12	25	1	27	20	19	0,31
75	11	1	2	12	27	13	3	10	26	25	24	9	14	23	15	21	16	17	18	19	4	8	5	7	20	22	6	0,64
76	12,5	9	2	26	16	8	27	4	22	17	24	5	6	20	14,5	21	7	23	18	19	1	25	14,5	12,5	3	11	10	0,38
77	3,5	1,5	5,5	7,5	21	22	9,5	23	24	25	26	1,5	11,5	27	13,5	15	16,5	16,5	18	3,5	11,5	19	13,5	5,5	20	9,5	7,5	0,53
Rank sums	549	358	652.5	895.5	1120	1057	1081.5	766.5	1486	1342	1255.5	519	1106.5	1304.5	1320	1070.5	1021.5	1456	1337	1118	714.5	1444	1175	1023	1420	1191	1322	

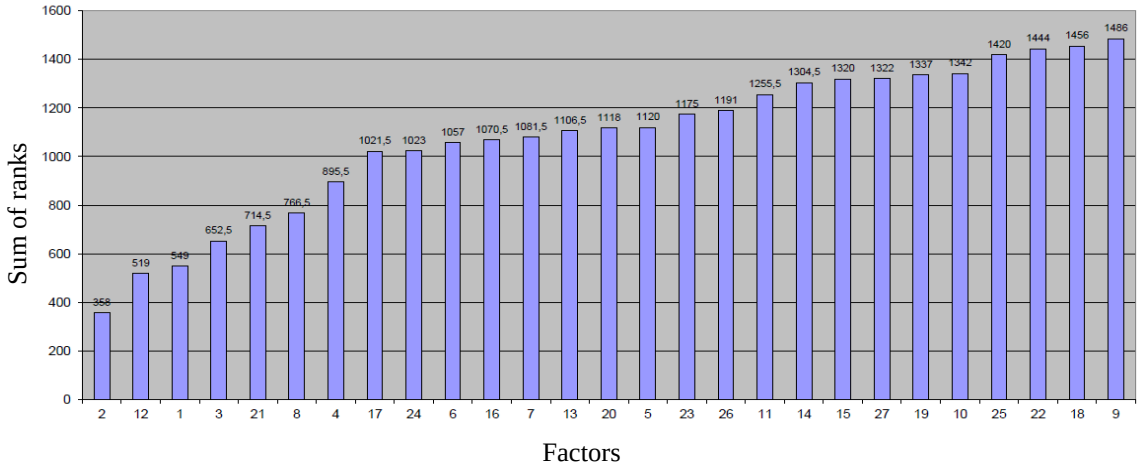

Fig. 21. The results of processing questionnaires received with the participation in a survey of leading experts, teachers and students-commodity experts on the impact of the status of the concept "Attractiveness of goods" on import substitution of light industry products in the regions of the Southern Federal District and the North Caucasus Federal District

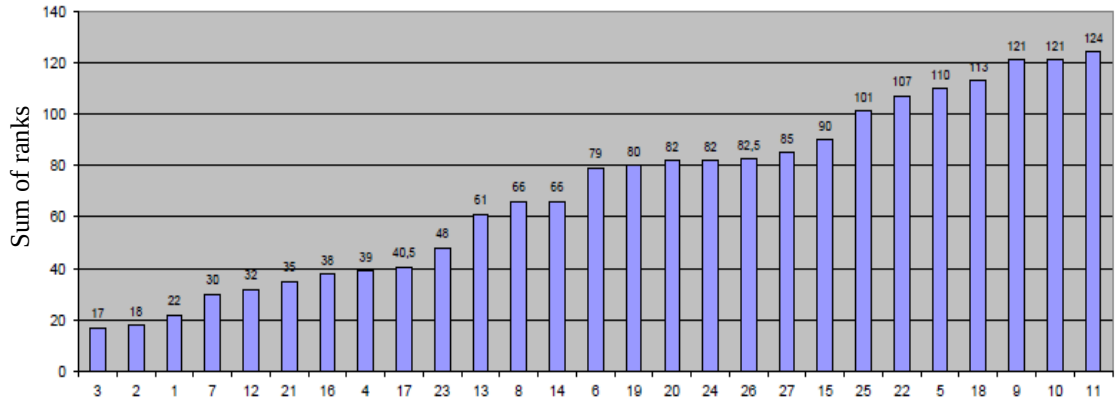

Fig. 22. The results of processing questionnaires obtained with the participation in a survey of leading experts, teachers and students-commodity experts on the influence of the status of the concept of "Attractiveness of goods" on the import substitution of light industry products in the regions of the Southern Federal District and the North Caucasus Federal District without the participation of so-called heretics, that is, those respondents, whose opinion does not coincide with the majority of survey participants

Table 45 - Comparative characteristics of experts' opinions on the impact of the status of the concept of "Product attractiveness" on the competitiveness and demand for products

No.	Indicators of "Product attractiveness"	Results of a survey of teachers and students on the importance of criteria for assessing the impact of the concept of "Product attractiveness" on its demand						
		1*	2*	3*	4*	5*	6*	7*
1	Feeling the need to buy a product	3,5	3	3	3	3	3	1
2	Reliability of goods	1,5	2	1	1	1	1	2
3	Manufacturer's responsibility for the quality of the goods	5,5	1	4	4	2	4	3
4	Completeness of goods	7,5	8	7	7	9	7	9
5	Service courtesy	21	23	15	12	24	18	20
6	Trust in the seller, manufacturer	22	14	10	15	13	8	16
7	Impressive warranty period	9,5	4	12	10	6	14	13
8	Product availability	23	12	6	6	1	5	10
9	Communication with the seller	24	25	27	27	25	24	24

10	Mutual understanding with the seller, his interest	25	26	23	2	26	20	25
11	Service culture	26	27	18	20	27	19	23
12	Affordability	1,5	5	2	2	5	2	4
13	Customer satisfaction	11,5	11	13	11	12	16	11
14	The level of readiness of the consumer to make a purchase	27	13	19	19	20	21	12
15	The level of interest of the manufacturer in the formation of the attractiveness of the product	13,5	20	20	21	18	22	21
16	Consumer buying opportunity	15	7	11	14	14	9	5
17	Manufacturer credibility	16,5	9	8	9	16	10	7
18	Consumer communication	16,5	24	26	25	21	23	17
19	Having an opinion about an earlier purchase of an identical product	18	15	22	26	23	11	14
20	The consumer's need to buy an attractive, original product	3,5	16	14	13	8	17	18
21	The relevance of this purchase for the buyer	11,5	6	5	5	4	6	6
22	Possibility of subsequent exchange of goods	19	22	25	22	19	27	27
23	Availability of several necessary functions for the product	13,5	10	16	16	7	15	8
24	Modern design	5,5	17	9	8	10	13	19
25	Payment method for purchase	20	21	24	24	22	26	26
26	Ease of operation of the product	9,5	18	17	17	15	12	15
27	Organization and availability of service support for purchased goods	7,5	19	21	18	11	25	22

* Note: 1 - reference answer; 2 - the general opinion of the experts participating in the survey; 3 - the opinion of experts without heretics, that is, those experts whose opinion does not coincide with the majority of experts; 4 - opinion of student experts participating in the survey; 5 - the opinion of those student experts without heretics, whose answers do not coincide with the opinion of the majority; 6 - opinion of expert teachers participating in the survey; 7 - the opinion of expert teachers without heretics, whose answers do not coincide with the survey participants.

Conclusion

Analysis of the questionnaire survey on the influence of the competitive potential of enterprises in the regions of the Southern Federal District and the North Caucasus Federal District and on the increase in the competitive advantages of domestic fur products over imported fur products regretfully confirmed the lack of consistency of respondents on the criteria for the quality of light industry products formulated in the questionnaires. So, for example, the basic answer, the first expert, expressed by competent experts, received, according to the results of the survey, the value of the concordance coefficient equal to (W) 0.34, i.e. less than 0.5, and the basic answer about the quality of domestic fur products is the eighteenth expert, expressed by competent specialists - experts, although he received a higher value of the concordance coefficient, equal to (W) 0.47, but still less than 0.5. That is, in our case, the fact is confirmed that the survey participants are respondents, not competent in the issues under study. In this regard, the authors are engaged in the development of additional changes to the software product, with the help of which the competence of the survey participants - respondents will be assessed and weeding out those who do not have the same opinion with the reference answers expressed by an authoritative and competent expert commission - creating the basis for a more effective assessments of invited specialists as experts to work in customs commissions and improve their qualifications, which will allow our consumers to be confident in the high quality of products that have passed customs examination and offered for their sale on demand markets.

But in this case, it is necessary to find a solution that would allow the manufacturer to have a tool for assessing the effectiveness of the developed innovative technological processes. Such a solution is possible if we use the efficiency coefficient for such an assessment, the value of which is considered as the value of the concordance coefficient for assessing the results of the prior ranking (W), which changes - Keff from 0 to 1. If its value tends to one, then this means that the manufacturer managed to find the most optimal solution to the innovative technological

process, but if its value tends to zero, then an analysis of the reasons for such an unsatisfactory result and a search for errors that provoked such a result and ways to eliminate the mistakes are required.

The efficiency factor of the technological process is calculated by the formula:

Kef = K1 K2 K3 K4 K5 K6 K7 K8 K9 K10 K11 K12, where Keff is the weighting coefficient of assessing the effectiveness of innovative technological processes, formed for the production of competitive and demanded products

K1 - the weight of labor productivity (PT);

K2 - the weight of the workload of workers (ZR);

K3 - weight of footwear production (Ps);

K4 is the weight of the equipment cost per unit of flow assignment (C);

K5 - the weight of the total price per unit of production (Stotal);

K6 - the weight of the financial strength margin (Zfp);

K7 - the weight of the break-even point (Tb.y);

K8 - the weight of the profit of a unit of production (Pr);

K9 - the weight of the product profitability (R);

K10 - the weight of costs per 1 ruble of marketable products (31p.t.p);

K11 - the weight of conditionally variable costs (total variable costs of production of a unit of production) (Zusl.per.units);

K12 - the weight of conditionally fixed costs (total fixed costs of a unit of production) (Zusl.pos.units)

Also, software was developed to select the optimal power. At the same time, the criteria that have the greatest impact on the cost of the finished product were justifiably chosen as the criteria for a reasonable choice of the optimal power when forming the algorithm, namely:

– losses on wages per unit of production, rubles;
– shoe production, 1 m2;
– percentage of workload of workers,%;
– labor productivity of one worker, a couple;
– unit reduced costs per 100 pairs of shoes, rubles;
– the cost of equipment per unit of flow assignment (C)
– total price (Stotal);
– financial strength margin (Zfp);
– break-even point (TB.y);
– unit profit (Pr);
– product profitability (R);
– costs for 1 rub. marketable products (Z1r. tp);
– conditionally variable costs (Zusl. per.units);
– conditionally fixed costs (Zusl. settlement units).

From the above criteria, in our opinion, the manufacturer has the opportunity to give preference to those that, from his point of view, would guarantee him the production of import-substituting, competitive and demanded products, namely:

- labor productivity of 1 worker is the most important labor indicator. All the main indicators of production efficiency and all labor indicators, to one degree or another, depend on the level and dynamics of labor productivity: production, number of employees, wage expenditure, level of wages. To increase labor productivity, the introduction of new equipment and technology, extensive mechanization of labor-intensive work, automation of production processes, advanced training of workers and employees, especially when introducing innovative technological processes based on universal and multifunctional equipment, are of paramount importance;

- specific reduced costs - an indicator of the comparative economic efficiency of capital investments used when choosing the best option for solving technological problems;

- reduced costs - the sum of current costs, taken into account in the cost of production, and one-time capital investments, the comparability of which with current costs is achieved by multiplying them by the standard coefficient of efficiency of capital investments;

- the margin of financial strength (Zfp) shows how many percent the company can reduce the volume of sales without incurring losses;

- the break-even point allows (Tb.y) to determine the minimum required volume of product sales at which the enterprise covers its costs and works without loss, giving no profit, but also does not suffer losses, that is, this is the minimum amount of output at which equality of income is achieved from sales and production costs;

- profit (loss) from the sale of products (Pr) is defined as the difference between the proceeds from the sale of products in the current prices of VAT and excise taxes and the costs of its production and sale;

- the profitability of production (R) reflects the relationship between the profit from the sale of a unit of production and its cost;

- conditionally fixed costs (total fixed costs of production of a unit of production) (Zusl.pos.units), which change in proportion or almost proportional to the change in the volume of production (1st - costs of raw materials and materials; 2st - costs of auxiliary materials; 3st - costs of fuel and energy for technological needs; 4st - the cost of additional and basic wages of production workers with insurance premiums to off-budget funds);

- conditionally variable costs (total variable costs of production of a unit of production) (Zusl.trans.units), which do not depend or almost do not depend on changes in the volume of production (5st - costs of preparation and development of production; 6 st - costs of costs for the maintenance

and operation of equipment; 7st - the costs of general production needs; 8st - the costs of general business expenses, they together with the conditionally fixed costs make up the production cost; 9 Art - the costs of commercial expenses. All of these items - forming conditionally variable costs and conditionally - fixed costs - make up the full cost, that is, the conditionally variable costs can be determined as the full cost minus the conditionally fixed costs, and vice versa,semi-fixed costs can be defined as full cost minus semi-variable costs;

- costs for 1 rub. commercial products show the relative amount of profit for each ruble of operating costs, that is, this is the ratio of the unit cost to the wholesale price, which characterizes the effectiveness of measures taken to increase the competitiveness and demand for products in demand markets.

With the help of the software, the calculations of the optimal power for the range from 300 to 900 pairs for men's and women's shoes of the entire range of footwear were carried out. The analysis of the characteristics obtained for three variants of a given technological process in the manufacture of the entire assortment of shoes has confirmed the effectiveness of the software product given below for evaluating the proposed innovative technological process using universal and multifunctional equipment. So, with a range of 300 - 900 pairs, the best according to the given criteria is the volume of production of 889 pairs of men's shoes and 847 pairs of women's shoes.

When calculating dimensionless estimates of the efficiency coefficient using software, it becomes necessary to formulate these very criteria as their evidence base. So, for example, the profit per unit of production is calculated depending on the profitability of the product, that is, first the size of the profitability is formulated from 5 to 25%, and then the size of the profit per unit of production is laid down. The same feature exists with the definition of the labor productivity criterion, because at first they use innovative technological processes formed on the basis of universal and multifunctional equipment, the maintenance of which should be entrusted to highly qualified and responsible performers who empathize with the overall result of the entire technological cycle. guaranteeing them the production of demanded and competitive products that are in high demand among consumers on domestic markets. Calculation of conditionally fixed costs for the production of a unit of product and conditionally variable costs for the production of a unit of production is interconnected with the peculiarities of organizing the production of competitive and demanded products, including for children. An analysis of the results of the activities of leading foreign manufacturers confirms the fact that if the conditionally fixed costs make up 20 - 40% of the production cost, then, naturally, the conditionally variable costs make up 60 - 80%. At the same time, it is again necessary to focus on the features of the production of products for children, when both profit, profitability, conditionally fixed costs and conditionally variable costs are formed on the basis of the implementation of the requirements of technical regulations and normative documents and acts, guaranteeing them the safety of life when using them. And if this is due to the need to produce them with such stringent characteristics, the state and manufacturers are obliged to be interested in each other and provide manufacturers with compensation for the additional costs of observing them and a guarantee that the manufactured products will not harm the health of children.

Of course, if the criterion for the loss of wages per unit of production should tend to zero, and the volume of footwear production from 1 m2 - to its maximum possible value, and the costs per 1 ruble of marketable products should tend to their minimum possible value and the cost of equipment per unit of flow assignment also strive for its minimum possible value, and other criteria - for their maximum possible value - in the aggregate, a dimensionless assessment of the effectiveness of the developed innovative technological processes (K) should always strive for unity and thereby confirm that the designed innovative technological process for the enterprise for the production of import-substituting products will be successful in their activities for the benefit of the population of those regions where they will operate,being city-forming for these small medium-sized cities.

Thus, the software developed by the authors for assessing the effectiveness of the formed innovative technological processes for the production of an import-substituting assortment of footwear, taking into account the calculated calculation components for the production of the planned assortment, allows us to make a justified decision on its launch, a decision on its balance, guaranteed demand and ensuring the enterprise a stable financial position.

An important factor affecting the level of costs for the production of footwear is the change in the assortment and the technological process. Choosing a technology that is capable of effectively realizing unlabeled goals in a highly competitive environment will ensure that the developed range of footwear will be chosen by the buyer and will allow the enterprise to get the maximum profit.

To solve this problem, it is necessary to most widely use the injection method, which ensures the manufacture (production) of the entire assortment of high quality footwear with different profitability of certain types of footwear to meet the demand of various groups of the population.

Therefore, we can confidently assume that the software developed by the authors creates the basis for the formation of an effective direction in the performance of scientific work and in the formation of various expert commissions by competent and highly

qualified specialists, guaranteeing the achievement of the highest results with the lowest possible costs, which is especially important for import substitution with domestic products of high quality and at an affordable price for consumers in the regions of the Southern Federal District and the North Caucasus Federal District.

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Impact Factor:					
	ISRA (India) = 6.317	SIS (USA) = 0.912	ICV (Poland) = 6.630
	ISI (Dubai, UAE) = 1.582	РИНЦ (Russia) = 3.939	PIF (India) = 1.940
	GIF (Australia) = 0.564	ESJI (KZ) = 9.035	IBI (India) = 4.260
	JIF = 1.500	SJIF (Morocco) = 7.184	OAJI (USA) = 0.350

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2021 **Issue:** 10 **Volume:** 102

Published: 09.10.2021 **http://T-Science.org**

QR – Issue QR – Article

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LIFE AND WORK OF ABU MANSUR AL-MOTURIDI AND THEOLOGY

Abstract: *Abu Mansur al-Moturidi's contribution to the development of theology in Mawarounnahr is incomparable. The doctrine he founded later spread beyond the Samarkand school of kalam and spread throughout the Islamic world, becoming known as one of the two largest schools of Sunni Islam (along with Ashariya).*

Key words: *scholar, genre, research, history, literature, bibliography, culture, tradition, philosophy.*

Language: *English*

Citation: Aliyeva, N. R., & Madrahimov, Z. Sh. (2021). Life and work of Abu Mansur al-Moturidi and theology. *ISJ Theoretical & Applied Science, 10 (102),* 366-372.

Soi: http://s-o-i.org/1.1/TAS-10-102-23 ***Doi***: https://dx.doi.org/10.15863/TAS.2021.10.102.23

Scopus ASCC: *3300.*

Introduction

In order to understand the essence of the doctrine of Moturidia, the reasons for its emergence, it is important to determine the life of its founder, his position in society. The latest and most complete work on this subject is a monographic study by the German researcher U. Rudolf. The German researcher made a complete comparison of all available historical and biographical information about al-Moturidi.[1]

However, the literature of this genre is mainly based on the biographical literature of the Hanafis and the literature of "history of cities". It is known that since the doctrine of Moturidiya became known to the general public in the XI century, the interest in his personality began to grow from this period. As a result, almost two centuries after the great scientist's death, information about him began to appear in the biographical literature. For this reason, little is known about Abu Mansur al-Moturidi in the biographical literature, which has been passed down from century to century. Plus, you'll be getting rid of clutter you don't need.

According to the sources, Abu Mansur al-Moturidi was originally from the village of Moturid (Moturit) in Samarkand, and his relative is related to the name of this village, and his full name is Abu Mansur Muhammad ibn Muhammad ibn Mahmud al-Hanafi al-Moturidi. as-Samarkandiy.

The life of Abu Mansur al-Moturidi dates back to the reign of the Samanid dynasty. Samarkand was originally the capital of this state. However, from the end of the ninth century, during the reign of Ismail Somoni (874-907), the capital of the state was moved to Bukhara. Nevertheless, Samarkand, along with Bukhara, remained the main economic and cultural center of Movarounnahrn. The second half of the IX century - the first half of the X century was a period of significant economic, cultural and educational life in Movarounnahr, including Samarkand.

Information about the life and work of Abu Mansur al-Motrudi is rare. Based on them, the mutakallim was born in the village of Moturud in Samarkand in about 870. The first information about him is given in the Tabsirat ul-Adilla by Abu al-Mu'in an-Nasafi (d. 1114) and Abu al-Yusuf al-Pazdavi (d. 1100). It is mentioned in the works of Usul ad-Din. Alloma died in 944 in Samarkand. Although this date has been endorsed by most researchers, the German scientist Ulrich Rudolf accepts it based on a number of valid assumptions.

Al-Moturudi learned the secrets of Islamic theology from his teachers Abu Bakr Ahmad al-

Juzjani, Abu Nasr Ahmad al-Iyadi, Nasr ibn Yahya al-Balhi, and Muhammad ibn al-Fadl, and gradually embarked on the path of independent creation. went in. Abu Mansur al-Moturudi Ali Rustugfani, Ishaq ibn Muhammad as-Samarkandi, Abd al-Karim ibn Musa al-Abu -He nurtured talented students like Pazdavi. According to the sources, Abu Mansur al-Moturidi was educated by two scholars, Abu Bakr al-Juzjani and Abu Nasr al-Iyadiyyah. It is possible to form a complete picture of what he has learned.[2]

Al-Moturidi's first teacher, Abu Bakr al-Juzjani, played an important role in the development of the Hanafi school in Samarkand. Abul-Mu'in al-Nasafi (d. 1114) states that he was even the founder of this school. It is known that Abu Bakr was educated in Balkh by his teacher Abu Sulayman al-Juzjani. Abu Sulayman al-Juzjani and Abu Hafs al-Kabir al-Bukhari (d. 832) studied in Baghdad with Muhammad ibn al-Hasan al-Shaybani (d. 805), a student of Abu Hanifa. After that, those who returned to their homeland and spread their knowledge, in turn, in Khorasan and Movarounnahr, played an important role in the spread of jurisprudence. They also more or less influenced the scientific environment of Samarkand. It seems that we have no reason to call Abu Bakr al-Juzjani a mutakallim. Therefore, it is reasonable to conclude that al-Moturidi studied from him not in the field of kalam, but in Hanafi jurisprudence.[3]

A completely different situation can be seen in Abu Nasr al-Iyadi, al-Moturidin's second mentor. Abu Mansur al-Moturidi took lessons from his teacher Abu Nasr for some time. His mentor had a special status as a teacher. However, his knowledge of theology did not leave a significant mark on traditional Islam. It should be noted that the influence of this teacher on al-Moturidi was, of course, great. He learned from al-Iyadi not only the study of traditional Islamic criteria, but also its comprehensive coverage and consistent analysis. Al-Iyadi teaches him to think rationally and to discuss theology. U. Rudolph partially restores the biography of the scientist as much as possible. However, his position in the socio-political life of Samarkand in his time, his personal path among the various groups of scholars remains unclear. As a result, along with the excellent analysis of the scholar's theological views, there was a huge gap between the environment in which these theoretical ideas emerged and the influence of socio-spiritual factors on them. U. Rudolf tries to explain the description of "az-zahid" among the attributes of Abu Mansur al-Moturidi[4]

However, he tends to associate the word with Sufism, but al-Moturidi cannot find any confirmation of this in the Kitab at-Tawhid, nor does he change his mind.

The life of Abu Mansur al-Moturidi coincides with the second period of development of theology in Samarkand. During this period, the city began to have a number of prominent groups of scholars. The works of Abul-Qasim al-Hakim al-Samarkandi, a member of the group of sages (hukamo), are well studied. In the second group, we can include the representatives of the school of Abu Bakr al-Juzjani - Abu Abdullah ibn Abi Bakr al-Juzjani, Abu Mansur al-Moturidi, Abu-l-Hasan ar-Rustufagni, Abu Salama as-Samarkandi. The third group is al-Iyadiya - Abu Nasr al-Iyadiy and his children Abu Ahmad al-Iyadiy, Abu Bakr al-Iyadiy. The debates between them took many forms and influenced the development of theology. Their views on socio-political issues play an important role in expressing the position of the scholars in theology. The judges did not refuse to cooperate with the authorities, but acted in concert with its representatives. There is some information that Abul-Qasim al-Hakim al-Samarkandi was in agreement with the authorities. For example, his Kitab al-Sawad al-Azam was created at the suggestion of the Samanids, and it should be noted that at that time it was recognized as the main guide for Movarounnahr.

This raises the question that al-Hakim al-Samarkandi and Abu Mansur, who are important in our study, lived in Samarkand at the same time. Did the Samanids not hand over the responsibility to the skilled scholar al-Moturidi, but to another scholar? A number of sources reflecting Abu Mansur al-Moturidi's personal position on the social events and ruling circles of his time were identified during the study. Among them are Ali ibn Yahya az-Zandavisati's (d. 1010) "Kitab raudat al-ulama", Muhammad ibn Ibrahim ibn Anush al-Hasiri al-Bukhari's (d. 1107) "Al-Khavi fi-l fatova". , "Kitab al-qand fi zikri ulama Samarkand" by Abu Hafs an-Nasafi (d. 1142), "Majmu al-hawadis wa-n-nawazil" by Ma'mun al-Kashshi (d. 1155), as-Saffar al-Bukhari (d. 1168-69) "Risala fiqh masoil suila anho ash-shaykh as-Saffor fa-ajoba anho", Abu Tahirhoja (XIX century) "Samaria"[5]

They express Abu Mansur's personal position on several issues. The first issue regarding the just ruler is stated in the works of al-Kashshi and al-Saffar al-Bukhari: "... Abu Mansur al-Moturidi says in this regard: A scholar who calls the oppressor "just" is also a disbeliever. This is natural."[6]

Hence, this message indicates that Abu Mansur al-Moturidi was in a position to distance himself from the widespread authority among the scholars during the early Islamic period. Another source confirms this opinion: "Abu Nasr al-Iyadi used to command the scholars and the people of knowledge: every Friday, ride a horse (donkey) around the markets and preach in favor of the palace. But our ancient righteous faqihs, Abu Bakr ibn Ismail al-Faqih as-Samarkandi, Abul-Hasan al-Farro, Abu Mansur al-Moturidi, and Abu Nasr ibn Ibrahim, denied this. They and other scholars would not ride on Fridays if they did not feel weak in their legs." This important message gives information about two aspects of al-Moturidi. The

first is the opinion that confirms the previous point, and the second is that it belongs to the group of righteous faqihs from Samarkand. This information indicates that al-Moturidi belonged to a group of righteous scholars in Samarkand.

In some works, al-Moturidi's personality is contrasted with that of scholars who have always held a conformist position. For example, Abu Hafs al-Nasafi states in his Kitab al-qand fi zikri ulama Samarkand: "Abu Muhammad Abd al-Aziz ibn Muhammad says:

- I heard the following words of Abul Hasan Ali ibn Sa'id al-Rustufaghni:

- One of the righteous people saw Abu Nasr al-Iyadi in a dream.

In front of him was a tray - a flower and a tray - of sugar. He (Abu Nasr al-Iyadi) handed the bowl full of flowers to Abul-Qasim al-Hakim as-Samarkandi and the bowl full of sugar to Abu Mansur al-Moturidi. Both were students of Abu Nasr al-Iyadi, and Abu Mansur al-Moturidi was a scholar of truth, and Abul-Qasim al-Hakim as-Samarkandi was a scholar of wisdom.[7]

Ali ibn Yahya az-Zandavisati, a hermit scholar from Bukhara, also reported on al-Moturidi's social status: "One day, one of the sultans invited al-Moturidi and Abu Ahmad al-Iyadi to his house. By inviting al-Moturidi, this nobleman wanted to increase his prestige in the eyes of the people. According to the custom of the time, the sheikh's beard, which was forcibly inserted, was asked to be rubbed with ghalia (a fragrant black substance applied to the eyebrows and hair). The sheikh refuses. The sultan's servants then rubbed the goliath on al-Moturidi's horse. Surprisingly, the horse does not move after the gallop. Al-Moturidi, realizing what had happened, ordered the horse to be washed away. Only then will the horse set off. "[8]

Al-Moturidi's image of asceticism is also preserved in folk literature. For example, Abu Tahirhoja's Samaria, which describes the holy places in Samarkand, says: "It is said that the Sheikh was in the garden one day. An envoy sent to Samarkand by the Caliph of Baghdad to ask the Sheikh a question came and knocked on his door. The sheikh comes out dressed in torn clothes. Ambassador:

"Where is Mevlana?" He asks.

The sheikh replied, "Mawlana is a god."

Again the ambassador asked, "Where is the lord?" He asks.

The sheikh replied, "Khoja is Mustafa."

The ambassador said, "Where is Abu Mansur?" He asked.

Abu Mansur said, "This beggar is old."[9]

Hence, this tradition also describes al-Moturidi as a hermit scholar.In the 10th century, scholars working in Samarkand were groups of people in various positions in social life. Abu Mansur al-Moturidi belongs to the group of righteous scholars. These scholars were supported by the middle class of the city. These eminent scholars have defended the interests of the middle class. They were mostly buried in Chokardiza Cemetery. The second group of scribes held conformist positions against the governors. Representatives of this group include members of the al-Iyadiya dynasty Abu Nasr al-Iyadi, his children Abu Bakr and Abu Ahmad al-Iyadi and al-Hakim as-Samarkandi. For this reason, the Samanids entrusted the creation of al-Sawad al-Azam not to Abu Mansur, but to al-Hakim as-Samarkandi. During the revival of the teachings of Moturidi, the Hanafi scholars of the 11th and 12th centuries ignored the ideas of Abu Mansur al-Moturidi that reflected his social views. It is known that after al-Moturidi's death he was buried in Chokardiza cemetery on the outskirts of Samarkand. Prominent scribes were buried here, especially among the city's middle class. Among them are al-Moturidi, his comrades and disciples. This cemetery and the information associated with it are of particular importance for the study of a group of righteous scholars.[10]

Located in the old part of Samarkand, Chokardiza Cemetery, home to several hundred great scholars, sayyids, sheikhs, imams and ghazis, is the third most prestigious cemetery in the Islamic world after the Bokeya cemetery in Medina and the Muallo cemetery in Mecca. In the area of Chokardiza guzar, and then the cemetery, in the IX-XIII centuries, the city of Samarkand was located, and in the western part of it were built air gardens and pavilions. The name Chokardiza is a combination of the words "choker" - army, "diza" fortress, which in Sogdian means "army camp, fortress". In the early Middle Ages, a military fort was built here to protect the city. According to the books "Kandiya" and "Samaria", which cover the history of Samarkand, there was a garden of the scholar Abu Ishaq bin Ibrahim Samasi. After his death, according to his will, he was buried in the highest part of the garden. When Sheikh Abu Mansur al-Moturidi died in Samarkand in 944, he was also buried in this garden. Thus a new cemetery began to form here. Historical sources also note that many great scholars were buried in the Chokardiza cemetery, especially in the XI-XIII centuries. Turkish Admiral Saydi Ali Rais visited the famous Chokardiza Cemetery, where famous scholars are buried in Samarkand, during his 16th-century travels in Asia. In his memoirs, he mentions that he visited the graves of Abu Mansur al-Moturidi and several famous sheikhs. Monuments such as Samaria and Kandiya Khurd, built in the 18th and 19th centuries, depict the Chokardiza cemetery.

At the beginning of the 20th century, VV Bartol'd (1920) described his visit to Samarkand to Chokardiza cemetery, where he saw the mausoleum of al-Moturidi. There is no further information about al-Moturidi's tomb. The cemetery, where the faqihs, sheikhs and clerics were buried for hundreds of years,

was later turned into a settlement during the Soviet era. As a result, many tombstones and shards were lost. During the restoration of the tomb of Al-Moturidi, the graves of many faqihs and scholars were found. Most of them date back to the Karakhanid period and provide a lot of new information. A study of some ethnographic monuments found in the Chokardiza cemetery shows that some of the tombs of 10th century scholars have survived. Among them are Abu-l-Hasan ar-Rustufagni and Abu Salama as-Samarkandi.

In December 1999, The first President of the Republic of Uzbekistan I.A. Karimov signed a resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On the celebration of the 1130th anniversary of the birth of Imam Abu Mansur al-Moturidi." After that, on the personal initiative and direct instructions of the President, the construction of a memorial complex on the tomb of Imam Moturidi in the Chokardiza cemetery began. Since the Holy Chokardiza Cemetery has been demolished since 1948 and courtyards have been built on it, scientists from the Institute of Archeology of the Academy of Sciences of Uzbekistan have been tasked with scientifically studying the Chokardiza Cemetery and identifying the tomb of Imam Moturidi. Archaeologists spent four months excavating the site of the Chokardiza cemetery to determine the total area and layers of the cemetery. As a result of the research, it was found that the total area of Chokardiza cemetery is 4.5 hectares, where the graves reach 5-6 floors in some places. The mausoleum for Sayyids built by Amir Temur in the 14th and 15th centuries, the foundation of the mosque near the tomb of Imam al-Moturidi, the tombs of Imam Moturidi and his grandson Mahmud ibn Umar Hasan al-Moturidi al-Ansari were also identified and studied. Excavations have also uncovered graves placed on the graves of more than 30 scholars whose identities are still unknown to science.[11]

On the eve of the celebrations of al-Moturidi's birthday in 2000, the Cabinet of Ministers decided to build a 3.5-hectare complex on the site of the Chokardiza cemetery in Samarkand. The mausoleum of Abu Mansur al-Moturidi was built in the center of the complex. The mausoleum is cube-shaped and 12x12 meters. The dome is 8.5 meters long, has 4 marble columns in 4 corners, the mausoleum is mainly made of baked brick, 3 doors are made of wood. There are 18 windows and 12 copper chandeliers under the dome to illuminate the mausoleum. Complex Architect - R.O. Salohiddinov, and architects from Samarkand, Bukhara, Tashkent and Khorezm took part in the construction.

A marble tombstone dedicated to Imam Moturidi has been erected inside the luxurious mausoleum built over the tomb of Imam al-Moturidi. On this stone is written: "When a person dies, all his deeds cease, except for three deeds: the first is the flow of alms; the second is the knowledge he has learned and the third is the children of the rest of the tax. " The ornate gates of the mausoleum are also inscribed with the same inscriptions on the south and north gates: "The gates of heaven are open to the public. Allah's mercy will be revealed to the dead. " Two different inscriptions are inscribed on the two layers of the eastern door of the mausoleum. The first layer reads, "Fear the Day of Return to Allah," and the second layer reads, "Lord, open the doors of mercy for us."

It is no exaggeration to say that this small mausoleum reflects the centuries-old traditions of Uzbek architecture. On November 17, 2000, President I.A. Karimov inaugurated the new complex and began the 1130th anniversary of the birth of Imam al-Moturidi. Chokardiza Cemetery, another holy place in Samarkand for several thousand years, has started to receive pilgrims again.

Speaking of theology, theology is the study of philosophical and religious ideas in the Middle Ages, the theoretical foundations of religion, the doctrines of Islam (aqeedah - the Arabic "concept of belief"), which belongs to any religion. a set of religious requirements that are obligatory for the individual and must be fulfilled without discussion under any circumstances) emerged as a system of special knowledge in the process of conducting rational reasoning. The term kalam (ilm al-kalam) was used in a broad sense in medieval Muslim literature to refer to free thought on religious and philosophical topics (including Christianity and Judaism), and in the narrow sense to fanaticism, that is, in religion. The Prophet (peace and blessings of Allaah be upon him) was used not to imitate the Companions, but to interpret the Qur'an and Sunni teachings in a rational way, and to act on the basis of reason. The difference between theologians and philosophers is their approach to the analysis of existing issues. While the scholars rely on the Qur'an and the hadith, which are the rules of Islam, in solving a problem, the philosophers rely on the methods of ancient philosophy, that is, they take the human intellect as their primary source.

The word was originally formed in the course of debates and debates between the various political and religious sects that existed in Islam: the Mu'tazilites, the foreigners, the Qadaris, the Jabaris, the Murjis, and others. The basis of such debates is the interpretation of the Qur'an and the interpretation of the actions of Islamic scholars in this or that regard.

It can be said that at the same time the first subject of the science of the word came into being. The oneness of Allah and His attributes; accident and fate (human destiny); acknowledging past prophets, including Muhammad, as the true messenger of Allah; belief in doomsday and resurrection; Issues such as the possession of certain qualities by Muslim religious and secular leaders (caliphs, imams) formed its essence.The emergence of theology dates back to the

Abbasid period. By this time, debates and disputes in the aqeedah (issue of aqeedah) intensified. The situation was completely different in the time of the Prophet, in the time of the previous Companions. Arguments began to centralize at the same time. As a result, a new science was formed. The major Islamic movements that existed in the tenth century were Sunnis, Mutazilites, Murjis, Shiites, and foreign sects. One of the first theological currents in Islam is the Mutazila (Arabic for secession). Representatives of this first school of thought had a significant impact on the religious and political life of the Caliphate of Baghdad and Damascus in the VII-IX centuries. In many cases, Hasan al-Basri (642-728) and his followers Wasil ibn Ata (d. 748) and Amr ibn Ubayd (d. 761), who left the circle due to serious controversy, founded the Mutazila sect. They tried to deny mysticism by applying to Islam the methods and concepts of ancient philosophy and logic. The doctrine of Mutaziliya was recognized as an official religion during the time of the Abbasid caliphs al-Ma'mun (813-833), al-Mutasim (833-842) and al-Vasiq (842-847). During the reign of al-Mutavakkil (847-861), it was severely persecuted as an anti-Islamic movement. The last settlement of this movement was Khorezm, and by the XIII-XIV centuries it completely disappeared. One of the most famous representatives of this school in Central Asia was the scholar, philologist, commentator Mahmud az-Zamahshari (d. 1144). Abul-Hasan al-Ashari (d. 935) was one of the first to try to reconcile the word and Islamic teachings. Abul-Hasan al-Ashari's teachings were formed between two of the four Sunni sects, the Shafi'i and the Maliki. His colleagues tried to soften some of their irrational ideas and to philosophically substantiate the teachings of the Mutakallimin. Abu Ja'far Ahmad al-Tahawi (d. 933) was from the village of Taho in Egypt, so he was called Tahawi. He studied under Ibn Yahya, a student of al-Shafi'i. Although he was born in Egypt, he goes to Damascus (Syria). There he studied fiqh with Abu Hazim Abul-Hamid. Thus, al-Tahawi studied Hanafi jurisprudence. He was a supporter of jurisprudence and paid attention to comparisons. Commentators on his writings have acknowledged that there are aspects of the word that do not agree with al-Moturidi's views. This is a matter of the Qur'an. The Qur'an is part of the Ulum al-Islam (religious sciences) and studies the basic ideas of theology. In the field of kalam in Movarounnahr, it developed on the basis of the Moturidiya kalam school, which was formed on the basis of the Hanafi school of kalam. Representatives of this school are Abu Mansur al-Moturidi, al-Hakim as-Samarkandi, Abu Salama as-Samarkandi, Abu-l-Mu'in an-Nasafi (d. 1115), Abu Hafs Umar al-Nasafi (d. 1142).) can be named as mutakallim.

A completely different situation arose in Mawarounnahr, which laid a fertile ground for Abu Hanifa's religious and philosophical views. This was based more and more on the events that took place long before Abu Hanifa himself, rather than on a single goal-oriented activity or propaganda, in which the same murjis played a decisive role. played. The fact is that in the newly converted regions of Islam, in Movarounnahr, there were problems with various theology, which became very acute. Because he was not ready to meet the rules and requirements of Islam for the Turks or the Sogdians in these areas. This eventually led to a series of uprisings. All this paved the way for the emergence of independent theological traditions in Movarounnahr in the future, resulting in a relatively large religious environment. The role of the Samarkand scientific environment in the formation and development of the Movarounnahr kalam school is invaluable. The development of this school of theology can be divided into three periods:

1) the period before al-Moturidi (IX century);

2) the period of al-Moturidi and his companions (X century);

3) the period of restoration (XI-XII centuries);

1. In the first period, the services of high-ranking and influential Hanafi scholars were great. One of the first to be mentioned is Abu Muqatil as-Samarkandi (d. 823), the author of Kitab al-alim wa-l-muta'allim (The Book of the Master and the Disciple), which was popular among the Hanafis. His work provides an opportunity to trace the earliest steps of theology in the path of the Hanafi tradition. Because he sought to convey and explain the teacher's views clearly. This work is a question-and-answer session between a student teacher (Abu Hanifa). Abu Bakr Muhammad ibn al-Yaman as-Samarkandi (d. 881-82) also played a special role in preparing the ground for the Mawarounnahr school of kalam. He lived in Samarkand. Movarounnahr differs from the mutakallims in the details of the scholar's life, as his works have come down to us. Works by Abu Bakr, such as Kitab al-Anwar (The Book of Enlightenment), Kitab al-i`tisam (The Book of Interrelationships), and Kitab Ma'alim ad-Din (The Book of Religion). 'can be found. Another work of the scholar is called Kitab ar-radd alo-l-karromiya (The Book of Rejection to the Karomis), which is also concerned with theology. This work can be considered as a refutation of the teachings of the Karomis, who had a certain position in the city during the time of Muhammad al-Samarkandi.

Another prolific scholar who contributed to the development of this school was Abu Muti Makhul ibn al-Fazl al-Nasafi (d. 930). A scholar from an educated family, he was the founder of a dynasty of intelligent scholars. Three generations of this dynasty contributed to the development of Moturidia. One of them is Abul-Mu'in an-Nasafi. Although Makhul al-Nasafi was one of the most important theologians of his time, there is almost no information about his life in the sources. He is the author of Kitab ash-shua (The Book of Hyp), Kitab al-luluiyyat (The Book of the Durdons), and Al-Radd alo ahl al-bida (Rejection to

the People of Bidat). His third work, Ar-Radd, alo ahl al-bida, is directly related to the field of theology and is popular among the author's contemporaries. The information contained in it is significant as a primary source in this field of science due to its content and ultimate accuracy. Al-Hakim as-Samarkandi (d. 953) played an important role in the development of the Mawarounnahr school of theology. He was recognized as a scholar of theology as well as other theologians, as evidenced by his position as a judge of the country. Together with al-Moturidi, he was educated in Samarkand by Abu Nasr al-Iyadi. His famous work "Kitab as-savod al-azam" among the Hanafis occupies one of the main places in the history of Movarounnahr theology. The work was completed in 902 by order of Amir Ismail ibn Ahmad as-Samani (892-907). This work was also translated into Persian by the time of Noah ibn Mansur (976-997).

The introduction of new sources into the scientific community plays an important role in the study of the work of al-Moturidi's contemporaries. Within the framework of this research, for the first time, the works of 4 Samarkand scientists are noteworthy.

The first of them belongs to Abu al-Hasan Ali ibn Sa'id al-Rustufaghni (d. 961), a direct disciple of al-Moturidi. His work Al-Fawaid (Useful Things) has been preserved in al-Kashshi's Majmu al-Hawadis wa-n-Nawazil. The work, which has so far escaped the attention of researchers, is 70 pages long. The second rare source is the work of al-Moturidi's contemporary, Abu Bakr al-Iyadi (X acp). (d. 1107) is preserved in al-Khawi fil-fatawa (the most acceptable fatwas). The author of the work in the field of the third kalam – "Bayan asl madhhab axl as-sunna wa-l-jamaa" (statement of the originals of the madhhab of ahl as-sunna wa-l-jamaa) remains anonymous. This small work is important in the study of the development of theology in the time of al-Moturidi. As a fourth source, Ibn Yahya's (tenth century) Sharh Jumal Usul ad-Din (Commentary on the Summary of Methodology) is preserved in a single manuscript. This work was written as a commentary on Abu Salama as-Samarkandi's book Jumal usul ad-din (Summary of Methodology). Ibn Yahya gives detailed information about the development of kalam issues in Samarkand, as well as the details of the life of the city's scholars and their position in social life. Especially important is his account of the existence of two kalam schools in Samarkand during al-Moturidi's lifetime - al-Juzjaniya and al-Iyadiya. An additional source on the history of the Samarkand School of Theology is Abu Hafs as-Nasafi's Kitab al-kand fi zikri ulama Samarkand, which was discovered and published in recent years. It contains the views of a number of groups, including scholars, who have their own views in the field of theology. It should be noted that until now, the study of the history of Samarkand theology has not taken into account this source. The analysis of the information in the above-mentioned works has been criticized by the Ahl al-Hadith for some time. In response to these criticisms, hadiths confirming the views of the Hanafis began to appear. The onslaught of the muhaddithin, in turn, led to a stagnation in the development of theology in Movarounnahr, as in other parts of the Muslim world, by the end of the ninth century. At the end of the recession, in the second half of the ninth century, a new trend emerged in the history of the Samarkand Theological School. It is associated with the name of Abu Bakr al-Juzjani, a student of Abu Sulayman al-Juzjani, and his Hanafi students. It is difficult to comment on their contribution to the development of this science, as their works in the field of theology have not reached us. However, the works of Abu Mansur al-Moturidi and al-Hakim as-Samarkandi, representatives of this school, indirectly indicate that the scope of knowledge of teachers is much wider and more weighty.

Thus, one can observe a state of stagnation in the development of the Movarounnahr school of theology in the middle and end of the ninth century compared to the previous period. It is known that during this period there were great changes in theology in the central regions of the Caliphate. In Movarounnahr, the Hanafi doctrine had a significant advantage over other rival sects. The position of the Hanafis was especially strong among the urban population. For this reason, in order to further strengthen his rule, the Samanid emir Ismail ibn Ahmad (892-907) called on the scholars of Samarkand and ordered them to develop a single Islamic doctrine. The purpose of this event was to put an end to the various theological pluralism that had taken root in the territory of the Samanid country, and to strengthen the unity of society, their inclination to power.

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Impact Factor:					
	ISRA (India) = 6.317	SIS (USA) = 0.912	ICV (Poland) = 6.630
	ISI (Dubai, UAE) = 1.582	РИНЦ (Russia) = 3.939	PIF (India) = 1.940
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	JIF = 1.500	SJIF (Morocco) = 7.184	OAJI (USA) = 0.350

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2021 **Issue:** 10 **Volume:** 102

Published: 09.10.2021 **http://T-Science.org**

QR – Issue QR – Article

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ARTISTIC CONCEPT AND AESTHETIC IDEAL

Abstract: *The article examines the problem of the aesthetic ideal - one of the most important categories of literary criticism. The aesthetic ideal occupies a special place in the artistic and aesthetic concept of the creator. Since artistic creation is an individual phenomenon, the aesthetic ideal also includes national, social, and historical factors. In Eastern Muslim culture, the aesthetic ideal is explained by the concept of perfection.*

Key words: *artistic concept, aesthetic ideal, ideal man, national literature, hero, Abdullah Qadiri.*

Language: *English*

Citation: Tulaganova, S. P. (2021). Artistic concept and aesthetic ideal. *ISJ Theoretical & Applied Science, 10 (102),* 373-376.

Soi: http://s-o-i.org/1.1/TAS-10-102-24 ***Doi***: https://dx.doi.org/10.15863/TAS.2021.10.102.24

Scopus ASCC: *1200.*

Introduction

Aesthetics is one of the most important categories of philosophy and literature. Literary criticism is a field that deals with the relationship to reality reflected in a work of art, how a creator perceives goodness and beauty and studies their expression. The concept of the aesthetic ideal is characterized by the degree of renewal in accordance with the requirements of time and space. "The aesthetic ideal is a category of literary aesthetics that serves to express the perfect life and the human image through an artistic image"[1].

The aesthetic ideal is a philosophical concept of a universal and national, educational, moral, social, cultural nature. The aesthetic ideal must be approached based on the interests of a specific historical situation, space and time, or a social stratum. A person lives his life with a feeling of dissatisfaction with his actions, whether he wants it or not. It is this feeling of dissatisfaction that prompts him to turn to purification and research in which art, especially fiction, plays an important role.

In Aristotle's Poetics, catharsis - spiritual cleansing - is perceived as an aesthetic teaching. Cholpon in his "What is Literature?" “The more we need water and air for our constantly moving body, the more literature we need for our soul, which is polluted by all kinds of black impurities on the path of life,” the philosopher continued logically.

In the Eastern Muslim world, spiritual purity is an eternal problem for humanity. Abu Nasr al-Farabi, in his commentary on the writings of Aristotle, pays special attention to the issue of purity and virtue. The purity that is the pride of Islam comes from the holy book of our Lord, the Koran, and the pure Sunnah of our Prophet, the hadith. The purity that our ancestors practiced for one thousand four hundred years and which we continue in everything is not ordinary purity, but purity that has risen to the level of worship that will lead us to the blessings of Allah and our achievements.The science of mysticism is a set of sciences that man finds and desires on the path to happiness and promotes claims to human perfection. “Sufism should be free from all evil, achieve perfection and enlightenment, learning from all good. He must rebuild a person and connect him with his Lord in every thought, word and deed” [2.33.]. In fact, the wisdom of our father Adam (peace be upon him) and our mother Eve to come down to earth was the same: to nurture their souls to the extent that they deserved to live happily ever after in the heavenly realm. The great sage Muhammad Abu Ghazali asserts in “Ihyu Ulumiddin” (Book of the Knowledge of the World) that "everything that is divine is pure, man is holy and sanctified, and this emphasizes the invincibility of the individual and the holiness of faith"[3.246.]. Thus, among the eastern Muslim peoples, the ideal man is considered the highest moral

and aesthetic ideal. The lives of the prophets and companions, great saints, great people served as an example, or rather an ideal for the people of Turkestan. By the Soviet era, criteria and requirements, as well as ideals, were renewed, and fake and transient heroes became the splendor of literature. But at all times, ideals based on universal human values, without forgetting about their identity, have stood the test.

Creation also brings a person closer to prayer, since it encourages humanity to goodness and respect for higher values and affects the spirit. In the works of the Turkestan intelligentsia, the successors of Islamic culture and enlightenment, the moral ideal was shown as the main criterion.

The intelligentsia of Turkestan at the beginning of the twentieth century adopted such trust and faith as a profession and considered enlightenment to be the only salvation. They emphasize that a nation without a native language and literature has no place in the historical arena, that the level of a nation is measured by its literature and culture, and they call on contemporaries to selflessness.

In fiction, the creative goal, the idea of a person and society, worldview are expressed in accordance with artistic thinking. This plays an important role in defining the creative aesthetic ideal. “The ideal may not always be compatible with the existing reality of existence, and it cannot be. Creating their highest national ideal, people express not only love for the ideal, but also hatred for the system in which they live” [4.32.]. So, as the scientist points out, the ideal has the ability to combine two aspects: summarizes the writer's love for the ideal and his relationship to the system.

The artistic image is one of the aesthetic categories. In recent years, scientists believe that an approach to a work of art, an image, not only from the point of view of literature, but also at the intersection of philosophy, psychology, aesthetics, logic, linguistics, will become the basis for new scientific research. and theoretical conclusions. L. Vygotsky noted that behind any work of art is human psychology: “In aesthetics, it is necessary to pay attention to the spiritual foundations of artistic creativity and aesthetic pleasure” [5.11.]. The scientist, who observed the relationship between art and psychology, claims that it is possible to understand the essence of the work by studying the psyche of the creator, focusing on the spiritual basis of creation. The German scientist Wundt, on the other hand, studied the language, customs, religious and mythical views of the nation as the subject of his research aimed at studying the social psychology of people. Consequently, the process of forming national spirituality and values is at the same time an activity of social psychology.

The artist does not copy the reality he describes from nature, but through an artistic “inner” look, through “vision”, “hearing”, “feeling”. Seeing special wisdom in nature - the feeling of surprise directs the writer to creativity, inspires. These are the moments of seeing wisdom that bring Creation into the world. It is in these divine moments that the creator realizes what he is looking for, his essence. The creator tries to find a form of expression that is perceived and not fully understood at this "instant" moment, in accordance with the creature in his imagination, the "world" in his imagination, in turn, appears in the literary text, the Reader enters and feels that at least this "moment" should.

The idea of the aesthetic ideal is both private and general in nature, social in nature, is present in folklore and ancient written literature and has a hierarchical character from the point of view of its formation. The aesthetic ideal embodies the system of sacred values of the writer, such as nationality, language, religion, which complement each other, in which the hero in creative thinking is a “model”. In fact, understanding the essence of work, one cannot ignore the creative life, lifestyle, social status, position in society. A work of art is always unique, in which the creative person always "shines" and points to himself.

The aesthetic ideal is a historical category, the ideal of each era is an artistic generalization of the artist's aesthetic tastes, his dreams and aspirations. The hero who fought for the life of society and the development of the nation fulfilled the task of an artistic and aesthetic ideal. Atheism grew in the life of society, and the writer, intrigued by the political games of the government, in a sense tried to create in his work national heroes of his time.

A work of art is, on the one hand, "a texture associated with the personality of the creator, and on the other hand, an artistic texture built on top of the texture" [6. 214.]. As the psychologist notes, the performance reflects the unique character of the creative personality. Each sentence, so to speak, draws attention to characteristic characters that resemble the personality of the writer in his saga.

The ideals of the Almighty are the perfect people of their time, enlightened and just devotees. The writer Otabek Yusufbek Haji managed to create a unique image of the social and aesthetic ideal on the example of Anvar. In the image of Anvar Kodiri, Otabek generalized the aesthetic ideal of the early twentieth century, reflecting the image of the educated, literate youth of Turkestan. In these images, he was able to show the Uzbek character and Islamic enlightenment. This, in turn, ensured the originality and uniqueness of the writer's works.

Foreign Uzbek scholar Ahmet Ogir, in his analysis of “Bygone days”, says that in Qadiri's work, national grief prevails over literary grief, as can be seen in the example of the reformer Otabek and patriot Yusufbek Haji. “Qadiri embodies the image of a reformer and independent Otabek as a national

investor, faithful to the traditions of the nation to which he belongs. The author believes that he wrote a novel, rich in various symbols, to once again show the people the grief and tragedy of the country, and protested against the system in which he lived [7.10.]. According to the scientist, Otabek gradually grew from an economic reformer to a national hero fighting for the country's independence, and gradually became more and more spiritual. In his article, Kadiri writes: "The truth is that people must first fix the economy, and then give true enlightenment and put other issues at the forefront." The writer considers economics to be important first, and then education. For this reason, Otabek first acted as a national investor, then fell in love, then as a talented child and, finally, as a hero of independence. The dream of national statehood and the idea of reform existing in the author's soul define the psyche of the novel.

Kadiri depicts the image of Otabek between the two poles. Firstly, Otabek is a supporter of reforms in the economic and state system, and secondly, he is a real lover. There are no doubt that human and Islamic qualities in the spiritual world of Otabek were passed on from his father, Yusufbek Haji. The feeling of patriotism is stronger in the work of Yusufbek Haji, and in Otabek the feeling of love and justice prevails, they give the novel a special light, a unique charm in exchange for complementing each other. In the novel, concepts such as personality, family and marriage, the desire of the parents, are raised to the level of the central problem.

In practice, Otabek had a strong desire to carry out new reforms in the existing system of government of the khanate. The main character, about whom the writer writes, that is, a local merchant, must not only renew his style of behavior, but also his psyche, turning into a person of a new type. A new person is a person on the eve of revolutionary changes, who has abandoned the old stereotypes of the worldview and way of thinking.

“The creative personality as a scientific problem has been studied to some extent in world literature, and specific principles have been developed.Any work of art is a product of individual perception and creative activity. Figuratively speaking, the author is likely to leave a "fingerprint" in the text of the work, which is not noticeable at first glance, but different from others. This "trace" embodies a number of features present in the author's personality” [8.]. If you approach the writer's work from this point of view, the aesthetic ideal will become brighter.

The author looks critically at the system in which he lives, through the views of Otabek expresses the idea of reforms and independence, moving from criticism to analysis. The novel moves the gallery of images, the national image of which is expressed ideally. Oftboym, Mirzakarim kutidor, Kumush, Yusufbek Haji, Hasanali, Usta Alim are described as beautiful and ignorant people depicted against them, from Khudoyorkhan to Muslimkul, Khomid, Sadyk, Jannat. In essence, the novel is a struggle between good and ignorance.

Yusufbek Khadzhi is one of the heroes of the novel of ideal content and meaning. The image of Yusufbek Haji, the sage of the East, saturated with true Islamic enlightenment, has light and enlightenment that attracts everyone's attention. Yusufbek Haji looks at the essence of life differently than others, avoids worldly pleasures. A pilgrim blaming himself hopes that the "eyes of the heart" will open. After all, this whole person is an enlightened person. The industrious scientist S. Ahmad said: “Yusufbek Haji is both a conscious intellectual and a consultant. He has not one, but three responsibilities. Thus, he became a nation from three points of view: an official, an intellectual and a conscientious performer of the Hajj ”[9.121.]. Such interpretations show that the image of Yusufbek Haji is multifaceted and complex.

One of the most striking characters in the novel is an Uzbekoyim. Each of his movements, the word is pronounced in a tone that is unique for him, which involuntarily feels his breath. Stubbornness in the Uzbek nature is one of the distinguishing features of his character. Therefore, many of our literary scholars have paid attention to this image. What does it mean that Yusufbek Khadzhi, a state adviser and a wise old woman, obeys the demands of Uzbekoyim? Based on the many years of life experience of Yusufbek Khadzhi, he knows some of the shortcomings of the Uzbekoyim nature and is in no hurry to improve. When my Uzbekoyim demands the right to motherhood, neither husband nor son can find an answer. Actually, such a representation of the Uzbekoyim can be said to correspond to the artistic intentions of the writer. His mother plays a special role in exacerbating conflicts in Otabek's life. Uzbekoyim is notable for fulfilling its function in the structure of the novel with certain qualities in its nature. Sources say the writer used his mother, Josiyatbibi, as a "template" to create the Uzbekoyim character. Josiyatbibi is the youngest of eight daughters in the family. Sources claim that she was a strong, sincere, outspoken woman who could not hide her feelings.

In the spirituality of Qadiri's heroes, values such as greatness, wisdom, wisdom, and the philosophy of the people are ultimately based on the rules of religious enlightenment. Faith in the lives of heroes, fidelity to the truth is a matter of life and death. Although the heroes of the novel move towards different goals, they have a single focus. This is closely related to the writer's aesthetic concept of ensuring that the entire universe, like the law of gravity, moves all images in a work.

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	ISRA (India) = 6.317	SIS (USA) = 0.912	ICV (Poland) = 6.630
	ISI (Dubai, UAE) = 1.582	РИНЦ (Russia) = 3.939	PIF (India) = 1.940
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SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2021 **Issue:** 10 **Volume:** 102

Published: 09.10.2021 **http://T-Science.org**

QR – Issue QR – Article

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INFLUENCE OF THE MAGNETIC FIELD OF HIGHLY DISPERSED FERROMAGNETS ON SOME BIOLOGICAL SYSTEMS

Abstract: *The results of the study were analyzed in the study of the effect of magnetic fields on highly dispersed ferromagnets in biological systems. The possibility of using high-dispersion ferromagnets for medical and biological purposes has been demonstrated.*

Key words: *magnetic field, high-dispersion ferromagnets, biological systems, biological object, magnetosensitive materials.*

Language: *English*

Citation: Oromiddinov, S. B. (2021). Influence of the magnetic field of highly dispersed ferromagnets on some biological systems. *ISJ Theoretical & Applied Science, 10 (102),* 377-380.

Soi: http://s-o-i.org/1.1/TAS-10-102-25 ***Doi***: crossref https://dx.doi.org/10.15863/TAS.2021.10.102.25

Scopus ASCC: *3100.*

Introduction

Recently, much attention has been paid to the study of the influence of magnetic fields (MF) on biological objects. These questions are very relevant in connection with the development of methods for the application of MF and their practical use. However, experimental data are insufficient, and sometimes the results obtained are so contradictory and diverse that it is not possible to formulate with certainty the regularities of the effect of MF on biological systems. In addition, modern views on the mechanism of the therapeutic and biological action of MF, the body's response to its effect, the use of MF and various ferromagnets as sources of MF are not always unambiguously reflected. [1-7].

In this work, an attempt is made to generalize some published data and our own experimental results of studying the effect of MF of highly dispersed ferromagnets on biological systems.

Analysis of the effect of MF on physicochemical and biological changes in the body makes it possible to reasonably and purposefully use these fields for diagnostic and therapeutic purposes [9-12].

In many works [13-17], new variants of magnetotherapy, the effect of MF on the physiological functions of experimental animals and humans, as well as research methods based on the interaction of MF with magnetosensitive materials are considered. It is known from the literature that MFs have a biological effect. This explains the use in medicine of methods of treating many diseases. Moreover, numerous studies have shown the absence of specific contraindications to their use [5, 18-20].

Studies of the effect of MF on tumors are of interest [21-25]. This opens up new perspectives and fields of application in medicine, in particular, in oncology.

The use of MF in the treatment of a number of diseases requires control of the MF action, the objectivity of the method, the development of a biodose, the reduction of harmful effects, etc.

Iron ions occupy a special place in the mechanism of the biological effect of MF directly through water systems [26-28]. Of greatest interest for biology and medicine is the study of reactions involving ions of iron, copper, calcium, and other organic molecules and radicals [29–31]. Thus, in a pair of iron - oxygen, conditions are created for the manifestation of the effect of MF on the rate of reactions Fe2 + + 02 - »Fe3 + + 02 [29]. The regularities of the magnetic effects from Fe2 +, 02 can contribute to deepening the study of the mechanisms of catalytic reactions with the participation of Fe2 * at the stages of termination and branching of oxidation

chains [31, 32]. The effect of MF on the reaction rate of the decomposition of hydrogen peroxide by catalase in the presence of iron ions was studied [33], which proceeds by the latent radical mechanism, and the possibility of the formation of intermediate oxygen radicals in the coordination sphere of iron ions was shown.

An important place, in the author's opinion, should be given to the use of magnetic particles (as sources of MF) as biologically active substances of a new class. It should be noted that today there is not enough information regarding the use of magnetic particles of iron and compounds based on it, compounds of rare earth elements, etc. In particular, the use of highly dispersed ferromagnets for biomedical purposes is discussed in [13-17]. The use of particles of Fe203, metallic iron, Fe_30_4, etc. is described. The introduction of particles into the body depends on the dose of the substance, degree of dispersion, surface charge of particles, physicochemical stability, etc. [16, 34–37]. Reports [17, 38, 39] are devoted to the use of powders of metals Zn, Cu, Fe in colloidal form for the treatment of a number of pathological disorders, but without taking into account their biological activity. It should be noted that it is practically impossible to obtain stable suspensions of metals and to introduce them into the body in concentrations sufficient for an effective and long-term therapeutic effect. It can be assumed that one of the options for solving this problem is the introduction of metals into the body in the form of highly dispersed metal powders [17, 35–37]. The role of trace elements of metals in the life of living organisms is known [40, 41]. Their lack leads to disruption of the functioning of the body. These elements are required in very small quantities, there is a maximum concentration limit [42, 43].

Suspensions of magnetic particles [44–49] of two types are used for medical purposes: with a particle size of 0.01–0.1 and 1–10 μm. In this case, one should take into account the biocompatibility of magnetic fluids. The possibility of supplying and retaining drugs with the help of MFs created by magnetic fluids has been proven [25]. When solving these issues, much attention should be paid to magnetotherapy devices [50-53].

We [54, 55] for the first time obtained by the thermochemical method highly dispersed iron and composite powders of iron-silver, iron-platinum, iron-copper and iron-zinc, which are single magnets with high magnetic energy, with controlled physicochemical and medico-biological properties, without an analogue in world practice due to a special way of forming their particles. All properties are implemented simultaneously. Their effect on some biological objects has been studied, in particular, microorganisms [56], bacteria (Staphylococcus aureus and Pseudomonas aeruginosa) [57]. It was found that the obtained highly dispersed powders have a bactericidal effect, withstand sterilization temperatures up to 120 ± 10° C [58], are non-toxic (hazard class 4), corrosion-resistant [58], with a hydrophilic surface [60].

The influence of highly dispersed ferromagnets on biological objects is probably realized through chemical reactions proceeding according to a free radical mechanism (with the participation of oxygen, enzymatic reactions, many energy substrates, changes in the structure and properties of water, etc.).

The areas of application of highly dispersed ferromagnets have been experimentally established, for example, in the treatment of purulent wounds (trophic ulcers) [61], the thyroid gland [62], in oncology [63], neurooncology [64], etc.

Thus, it is shown in the work that the issues of the influence of MF and, in particular, MF, created by highly dispersed ferromagnets, on biological systems are of great theoretical and practical interest. This is confirmed by the significant experimental and clinical effects of MF.

Literature data and our own research testify to the diversity of the manifestation of the general reaction of living organisms to the impact of MF of various levels of tension, which indicates the involvement of numerous functional systems in it.

The possibilities of using MFs created by highly dispersed ferromagnets in solving many medical and biological problems have not been exhausted. This is, first of all, the study of mechanisms and the creation of a holistic theory of the biological effect of MF, the development of various kinds of composite materials for medical purposes.

Conclusion

Some published data and experimental results on the effect of the magnetic field of highly dispersed ferromagnets on biological systems are analyzed. The possibility of using highly dispersed ferromagnets for medical and biological purposes is shown.

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Impact Factor:					
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	GIF (Australia) = 0.564	ESJI (KZ) = 9.035	IBI (India) = 4.260
	JIF = 1.500	SJIF (Morocco) = 7.184	OAJI (USA) = 0.350

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2021 **Issue:** 10 **Volume:** 102

Published: 10.10.2021 **http://T-Science.org**

QR – Issue QR – Article

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RESEARCH OF OBTAINING ANTIPYRENE ANTIPYRENE ON THE BASIS OF LOCAL RAW MATERIALS

Abstract: *The article investigates the definition of the fire retardant efficiency of synthesized phosphorus, nitrogen, boron and metal-containing oligomeric anti-smoke fire retardant brands ADP - 003, ADP - 004, ADP - 005, ADP - 006, ADP - 007, ADP - 008, ADP - 009, ADP - 010, to wood materials, the fire retardant efficiency of the synthesized fire retardant is determined. It was found that the synthesized oligomeric fire retardant brand ADP - 003, ADP - 004, ADP - 005, ADP - 006, ADP - 007, ADP - 008, ADP - 009, ADP - 010, as a means of wood protection, belongs to I fire retardant efficiency.*

Key words: *smoke retardants, solubility, fire resistance, wood, phosphorus, nitrogen, boron, fire retardant efficiency.*

Language: *Russian*

Citation: Khadjimetova, Sh. A., & Vafaev, O. (2021). Research of obtaining antipyrene antipyrene on the basis of local raw materials. *ISJ Theoretical & Applied Science, 10 (102),* 381-385.

Soi: http://s-o-i.org/1.1/TAS-10-102-26 ***Doi***: https://dx.doi.org/10.15863/TAS.2021.10.102.26

Scopus ASCC: *1605.*

ИССЛЕДОВАНИЯ ПОЛУЧЕНИЯ ПРОТИВОДЫМНЫХ АНТИПИРЕНОВ НА ОСНОВЕ МЕСТНЫХ СЫРЬЕВЫХ РЕСУРСОВ

Аннотация: *В статье исследовано определение огнезащитной эффективности синтезированного фосфор, азот, бор и металлсодержащего олигомерного антидымного антипирена марки АДП – 003, АДП – 004, АДП – 005, АДП – 006, АДП – 007, АДП – 008, АДП – 009, АДП – 010, к древесным материалам, и определена огнезащитная эффективность синтезированного антипирена. Было установлено, что синтезированный олигомерный антипирен марки АДП – 003, АДП – 004, АДП – 005, АДП – 006, АДП – 007, АДП – 008, АДП – 009, АДП – 010, как средство защиты древесины, относится к I группе огнезащитной эффективности.*

Ключевые слова: *противодымные антипирены, растворимость, огнестойкость, древесина, фосфор, азот, бор, огнезащитная эффективность.*

Введение

Повышение огнестойкости деревянных домов – первостепенная задача, которую нужно решить для их долгой и безопасной эксплуатации. При возгорании конструкции из дерева могут разрушиться и полностью сгореть за 20-30 минут. Антипирены – это специальные пропитки, позволяющие в 2-3 раза замедлить процесс горения и предотвратить серьезные последствия. За это время можно успеть предпринять

необходимые меры, вывести людей и вынести ценное имущество. При возгорании обработанные деревянные конструкции обугливаются, но не сгорают целиком. Средства огнезащиты древесины условно можно разделить на огнезащитные покрытия и пропиточные составы. В первом случае – это краски, лаки, пасты и обмазки. Во втором – огнезащитные пропитки[1]. Огнезащитные покрытия, могут скрывать текстуру древесины, ухудшая её внешний вид, поэтому их, в основном, используют для огнезащиты не просматриваемых деревянных конструкций. Пропитки же, напротив – сохраняют текстуру и природную красоту древесины, и находят более широкое применение. Антипирены для древесины, других материалов могут состоять из одного компонента или сочетать несколько веществ[2].

Водорастворимые пропитки – наиболее оптимальный вариант для обработки древесины. Но они эффективны там, где деревянные конструкции не подвергаются длительному воздействию влаги. В основном используют для жилых комплексов, хозяйственных построек [2-3].

Древесные композиты горючих материалов, а также их применение всегда ограничиваются их воспламеняемостью. Чтобы смягчить этот недостаток, проводят огнезащиту материалами, которые изменяют или затрудняют горение в конденсированной или газообразной фазе, в зависимости от конкретного огнезащитного материала и окружающей среды. Огнестойкость древесных композиционных материалов, на основе антипиренов, включает в себя сложный ряд одновременно химических и физических реакций [4, 5; p. 1796-1807]. ДСП являются заметным элементом лесной промышленности, в первую очередь мебельной промышленности. Их производство и потребление ежегодно увеличиваются. Древесина и древесные материалы, такие как стружечные и древесноволокнистые плиты, состоят из молекул водорода и углерода. Древесные материалы являются горючими, что ограничивает их использование для многих приложений [6; p.6407-6415].

Происходит нагарообразование во время пиролиза и горения огнезащитных вискозных волокон, рассматривается структура и свойства кокса, влияющего существенно на процессы, происходящие в процессе пиролиза и горения полимерных материалов, в том числе вискозных волокон [7; p. 20-24].

Фосфор- и азотсодержащие пожарные замедлители являются эффективными катализаторами кокса формирования подходящих полимеров. Их использование для противопожарной защиты вискозных волокон изменяет путь разрушения пиролиза, и механизма сгорания, который влияет на огне-стойкость материала. Таким образом, исследования процессов образования кокса при пиролизе вносит значительный вклад в теоретические основы для разработки менее легковоспламеняющихся материалов. В последнее время, многокомпонентные системы, содержащие одновременно несколько типов антипиренов с синергизмом из-за наличия в них P, N и галоидных атомов, которые являются ингибиторами пожара, были использованы в качестве антипиренов [8; p. 80-84].

В настоящей работе изучено влияние стадий модификации, состав системы антипиренов, и содержание вискозных волокон на образование кокса и структуры. Состав вискозных волокон был изменен с помощью системы антипиренов путем вымачивания волокна в водном растворе антипиренов на стадии выдержки при температуре 20 ± 5°C с последующей сушкой до постоянной массы, термическую обработку проводили при 150 °C в течение 10 мин, промывку - при температуре 40 ± 5 °C для удаления непрореагировавшего антипирена, и высушивали до постоянной массы. Антипирены содержат смесь P- и N-содержащих соединений, полифункциональное органическое соединение N-метилол-3- (диметил фосфонил) пропионамид, и антипирен Т-2 - смесь аммония метилфосфонамида и хлорида аммония. Кроме того, фосфорная кислота, которая содержит 31,6% P, была добавлена к антипиреновой системе. Метазин, органический циклический амин, получающейся путем метилирования метилолметиламина, был использован для фиксации антипиренов в волокнистой структуре для сохранения эффекта противопожарной защиты. Особенностью метазина является возможность гомо поликонденсации [9; p.20-24], в результате чего жесткая трехмерная сеть предотвращения потери антипирена во время влажной обработки была сформирована на поверхности волокна. Ранее нами было показано, что пиролиз вискозных волокон в присутствии антипиренов происходил при более низких температурах и инициировал обезвоживание и коксование, что привело к увеличению выхода обуглившегося остатка [10; p. 90-92].

Цель и методы исследования.

Целью данного исследования является определение огнезащитной эффективности синтезированного фосфор, азот, бор и металлсодержащего антипиренов. Для этого рассмотрены огнестойкие характеристики и свойства древесины пропитанной синтезированным антипиреном. Огнезащита древесины и изделий на его основе (целлюлоза, хлопчатобумажные изделия и др.) с применением

АДП – 003, АДП – 004, АДП – 005, АДП – 006, АДП – 007, АДП – 008, АДП – 009, АДП – 010.

Синтезированы новые поли-функциональные олигомерные антипирены на основе продуктов взаимодействия азот-, фосфор-, бор и металлсодержащих соединений, при этом были изучены свойства антипиренов марок АДП – 003, АДП – 004, АДП – 005, АДП – 006, АДП – 007, АДП – 008, АДП – 009, АДП – 010. Методику испытания проводили следующим образом: испытываемые образцы древесины сосны подвешивали вертикально в трубе из черной кровельной стали длиной 166 *мм* и диаметром 50 *мм.* Под образец, выступающий из трубы на 5 *мм,* подводили пламя газовой или спиртовой горелки (в наших испытаниях применялась спиртовая горелка). Расстояние от верхней кромки горелки до образца составляло 10 *мм.* Время выдержки образца в пламени газовой горелки равно 1 мин., а в пламени спиртовой горелки 1 мин.30 сек. После удаления горелки фиксировали продолжительность самостоятельного горения и тления образца.

Настоящий эксперимент проводили по ГОСТ 16363-98. Сущность методов заключается в определении потери массы древесины, обработанной испытываемыми покрытиями или пропиточными составами, при огневом испытании в условиях, благоприятствующих аккумуляции тепла. Классификационный метод применяют для определения группы огнезащитной эффективности и при проведении сертификационных испытаний. Метод ускоренных испытаний применяют для контроля огнезащитной эффективности средств огнезащиты, прошедших классификационные испытания.

Действие антипиренов основано на том, что при наличии их определенной концентрации в древесине, они препятствуют ее горению без источника пламени. При воздействии огня на древесину происходят различные физико-химические процессы, на которые и оказывают огнезащитное действие антипирены.

Определение огнезащитных свойств древесины ГОСТ 16363 «Средства защитные для древесины». Условия в помещении: Температура воздуха- 90°С, атмосферное давление - 721мм.рт.ст., относительная влажность - 57%.

Результаты и их обсуждение.

Для получения огнезащитных составов с начала исследовали растворимости синтезированных противодымных антипиренов различных растворителях.

Таблица 1

Антипирен / **Растворители**	**АДП-001**	**АДП-002**	**АДП-003**	**АДП-004**	**АДП-005**	**АДП-006**	**АДП-007**
дистиллированная вода	+	-	-	-	-	+	-
диметилформамид	-	-	-	-	+	-	+
уайт-спирит	+	-	-	-	-	-	-
бензол	+	-	-	-	-	-	-
Бутилацетат	+	-	-	-	-	-	-
Этиловый спирт	+	-	-	-	-	+	+

+ растворимый, - не растворимый

Растворимость синтезированных антипиренов приведена в табл. 1 . Как видно из таблицы, полученный антипирен марки АДП-001 имеет хорошую растворимость в воде, плохо растворяется в диметилформамиде, а в остальных растворителях тоже хорошо растворяется.

Результаты испытания потери массы древесных материалов с добавками и без добавок олигомерного антидымных присадок марок АДП – 003, АДП – 004, АДП – 005, АДП – 006, АДП – 007, АДП – 008, АДП – 009, АДП – 010 представлены в табл.2, табл.3, табл. 4. антипиренов, обеспечивает получение трудновоспламеняемой древесины и относится к первой группе огнезащитной эффективности по ГОСТ. 16363-98.

Таблица 2. Огнезащитный состав, нанесенный на образцы деревянных брусков с номерами марок

Номер Образца	Подачи источника зажигания Время, с	Масса образца, г			Привес сухого состава	Потеря массы образца		Средняя потеря массы образца	
		До обработки	Перед сжиганием	После сжигания	Общее поглощение кг/м^3	г	%	Г	%
0*	60	135,2	-	42,07	-	93,13	68	-	-
1	120	141,52	142,81	117,55	1,29	25,26	17,6	25,37	17,53
2	120	145,21	146,78	120,07	1,57	26,71	18,2		
3	120	142,15	143,54	119,42	1,39	24,12	16,8		

Таблица 3.

Номер Образца	Подачи источника зажигания Время, с	Масса образца, г			Привес сухого состава	Потеря массы образца		Средняя потеря массы образца	
		До обработки	Перед сжиганием	После сжигания	Общее поглощение кг/м^3	Г	%	Г	%
0*	60	135,2	-	42,07	-	93,13	68	-	-
7	120	138,91	140,22	124,45	1,31	15,77	11,24	19,97	14,30
8	120	137,56	138,81	117,28	1,25	21,53	15,51		
9	120	140,32	141,75	118,83	1,43	22,92	16,16		

Таблица 4.

Номер Образца	Подачи источника зажигания Время, с	Масса образца, г			Привес сухого состава	Потеря массы образца		Средняя потеря массы образца	
		До обработки	Перед сжиганием	После сжигания	Общее поглощение кг/м^3	г	%	Г	%
0*	60	135,2	-	42,07	-	93,13	68	-	-
4	120	134,79	135,94	112,85	1,15	23,09	16,91	22,61	16,82
5	120	131,12	132,43	109,25	1,31	23,18	17,52		
6	120	133,12	134,74	113,11	1,62	21,63	16,11		

Результаты исследования составов АДП – 003, АДП – 004, АДП – 005, показали, что в среднем потеря массы образца составила 17,53 %, а в составов АДП – 006, АДП – 007, АДП – 008 показали, что в среднем потеря массы образца составила 16,82 %, и составов АДП – 009, АДП – 010, показали, что в среднем потеря массы образца составила 16,82 %, то есть всех образцов огнезащитный состав обеспечивает I группу огнезащитной эффективности, согласно ГОСТ (табл.2).

Из данных, приведенных в таблице 2,3,4, можно увидеть, что олигомерные антипирены пропиточных составов АДП – 003, АДП – 004, АДП – 005, АДП – 006, АДП – 007, АДП – 008, АДП – 009, АДП – 010 относятся к I группе огнезащитной эффективности. Растворы олигомерных композиций проникают вглубь, промачивая поверхностный слой древесины. После испарения воды-носителя антипирен остаётся среди волокон клетчатки, благодаря чему создается защитный слой.

Анализ пути совершенствования огнезащитных пропиточных составов, их применение в строительном деле для повышения противопожарной устойчивости конструкций и изделий из древесины показал, что приоритетными являются составы, способные при

минимальных затратах обеспечить требуемые параметры огне защищённости, не снизив и не ухудшив при этом эксплуатационных свойств древесины. Такой широкий спектр требований к современной огнезащите обязывает исследователей постоянно расширять научные изыскания.

Выводы.

Таким образом, анализ проведённой работы показывает перспективность разработки и применение композиционных материалов фосфор-, азот-, бор и металлсодержащих олигомерных антипиренов в качестве огнезащитных средств для древесины и целлюлозы, хлопчатобумажных изделий и др.

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Impact Factor:					
	ISRA (India) = 6.317	SIS (USA) = 0.912	ICV (Poland) = 6.630
	ISI (Dubai, UAE) = 1.582	РИНЦ (Russia) = 3.939	PIF (India) = 1.940
	GIF (Australia) = 0.564	ESJI (KZ) = 9.035	IBI (India) = 4.260
	JIF = 1.500	SJIF (Morocco) = 7.184	OAJI (USA) = 0.350

SOI: 1.1/TAS DOI: 10.15863/TAS

International Scientific Journal

Theoretical & Applied Science

p-ISSN: 2308-4944 (print) **e-ISSN:** 2409-0085 (online)

Year: 2021 **Issue:** 10 **Volume:** 102

Published: 11.10.2021 **http://T-Science.org**

QR – Issue QR – Article

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DURABLE SUPER HYDROPHOBIC COTTON FABRIC TO SEPARATE OIL FROM WATER

Abstract: *Oily wastewater not only pollutes the environment seriously but also is difficult to separate. Herein, by spraying the polytetrafluoroethylene aqueous dispersion onto the cotton fabric, a superhydrophobic/superoleophilic cotton fabric (coded as SSCF) was prepared. The so-prepared SSCF could separate the stratified and emulsified oil with high separation efficiency (above 95.0%). These experimental results showed that the SSCF provided an effective method in oil/water separation.*

Key words: *oily water, filter fabric, superhydrophobic, oil/water separation, durability.*

Language: *English*

Citation: Gafurov, A., & Isakov, D. O. (2021). Durable super hydrophobic cotton fabric to separate oil from water. *ISJ Theoretical & Applied Science, 10 (102),* 386-391.

Soi: http://s-o-i.org/1.1/TAS-10-102-27 ***Doi***: https://dx.doi.org/10.15863/TAS.2021.10.102.27

Scopus ASCC: *2200.*

Introduction

Leakage of oil and water mixed with oil can lead to serious water pollution and even endanger the safety of people and wildlife [1]. Thus, the separation of oil and water is a big problem. Traditional approaches to solving this problem include physical adsorption, chemical decomposition, membrane separation, gravity separation, gravity separation methods, hydrades, and others [2]. These methods are practical, but have various disadvantages, including high cost, negative environmental impact, secondary pollution, low oil separation efficiency, and poor selectivity and processing performance, etc. Consequently, there is a great need for inexpensive, environmentally friendly safe technologies for separating oil from water and in new materials that can be reused very well. Recently superhydrophobic (water wetting angle more than 150 ° and sliding angle less than 10 °) / super oleophilic surfaces (oil wetting angle less than 5 °) for oil / water separation with high selectivity and high separating power, and also recyclable with perfect sample ... Various superhydrophobic / superoleophilic materials have been produced for oil and water separation, including two-dimensional metal mesh, three-dimensional sponges, and cotton fibers [3]. For example, Jiang et al. Have developed a superhydrophobic and superoleophilic mesh film coating for separating diesel and water. Shi et al. Developed an oil and water separator separating self-forming monolayers by sequential formation of chemical metallic sludge for highly efficient oil spill treatment. Lu and others developed a two-layer stainless steel mesh modified with a demulsifying poly (N, N-dimethylaminoethyl methacrylate) and poly (divinylbenzene) agent, which demonstrated high fluidity and excellent separation efficiency when separating an aqueous emulsion in oil [4]. Pan et al. Prepared superhydrophobic and superoleophilic sponges to collect and remove oil and organic solutions from water surfaces. Wang et al. Developed a simple single layer superhydrophobic and super oleophilic polyurethane sponge by the soak method, which has demonstrated excellent sorption properties for separating various types of water-oil mixtures and oil emulsions in water. Lee et al. Developed a highly efficient and environmentally

friendly superhydrophobic polyurethane sponge with an attapulgite surface for separating oil / water and oil-in-water emulsions. Superhydrophobic and super oleophilic cotton fibers developed by Wang et al. Have shown high selectivity and efficiency in separating oil from oil / water and oil emulsions in water [5]. However, the preparation of the aforementioned superhydrophobic and superoleophilic surfaces is relatively complex, and their long-term effectiveness or effectiveness in separating oil from oil / water and oil emulsions in water is not well understood [6]. In this paper, we present a method for obtaining a mature superhydrophobic and superoleophilic surface by spraying an aqueous dispersion of polytetrafluoroethylene (PTFE) onto cotton fabric, the product obtained by this method is inexpensive, flexible, environmentally friendly, and superhydrophilic in nature. The resulting superhydrophobic and super oleophilic cotton fabric, coded as SSCF, and an immiscible oil and water mixture, can also be used to separate oil from oil emulsions in water.

2. Production of superhydrophobic and superoleophilic cotton fabric.

The surface of the cotton cloth was cleaned with ultrasound in acetone, etalon, and dionized water to remove debris. The condensed dispersion of PTFE was mixed with deionized water in a ratio of 1:10. The superhydrophobic and superoleophilic cotton fabric was then prepared by spraying the prepared PTFE dispersion onto the cotton fabric. A sprayer with a nose diameter of 1 mm was used, with spray pressure and flow rate of 0.3 MPa and 2 ml / s, respectively. The distance between the sprayer and the cotton cloth was maintained at around 20 cm and the spraying was repeated 3 times. After that, the cotton cloth was dried in an oven at 150 ° C for 2 h. For convenience, the superhydrophobic / superoleophilic cotton fabric is coded as SSCF.

2.1. Descriptions.

Water contact angle (WCA), slip angle (WSA) and oil contact angle (OCA) were measured using an optical contact angle meter (DSA 20, Kruss, Germany). One drop of water or oil (5 μl) was dripped onto the SSCF, and five different conditions were identified to obtain an average value. Surface (surface) morphology was observed using an electron microscope (FESEM, FEI-Nova NanoSEM 450, USA). The chemical composition was checked using X-ray photoelectron spectroscopy (XPS, Physical Electronics, PHI-5702, USA). Obtained under a microscope (Olympus-CX31, Japan) using optical micro-images of water-oil emulsion before and after separation. Physical friction characteristics were measured with a friction resistance tester (BF-FS9, China, Fig. S1) at a friction velocity of 104 ± 1.5 mm / s at a friction (head) with a vertical friction pressure of 9 N. The friction head reversed the cycle once and the total distance was 208 ± 1.5 mm.

2.2. Experiments on the separation of oil and water.

Picture of equipment for separation of oil and water. Shown in 3e. By mixing 50 ml of water and 50 ml of oil, immiscible fat water mixtures were obtained. The efficiency of oil separation in SSCF was calculated using the following equation:

$$\eta\% = B_1 / B \times 100$$

where, B and B_1 represents the starting oil (50 ml) and the volume of oil collected, respectively.

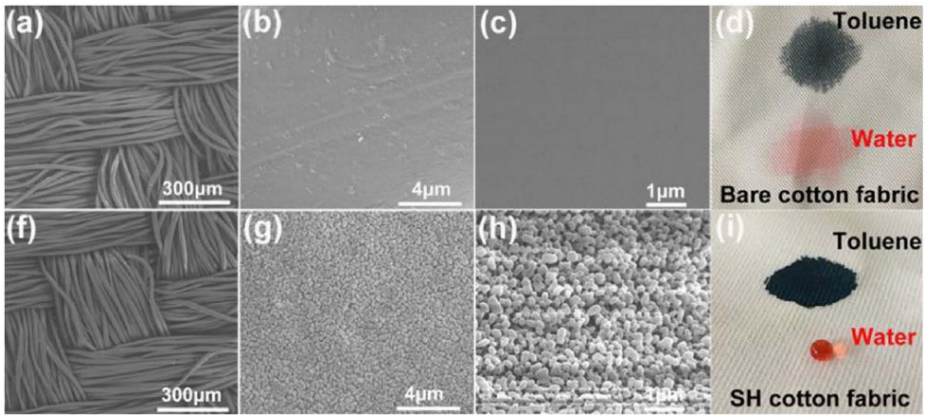
3. Results and discussion

3.1. Morphology, chemistry and surface moisture.

A clean cotton cloth is easily moistened with water and oil (Fig. 1d). This was due to the special surface microstructure and surface chemistry. In particular, as shown in Figure 1a-c, the pure cotton fabric consisted of smooth microfibers baked into a simple woven structure. As shown in Figure 2a, i.e. for pure cotton fabric, there were only two strong signals coming from XPS, carbon, and oxygen.

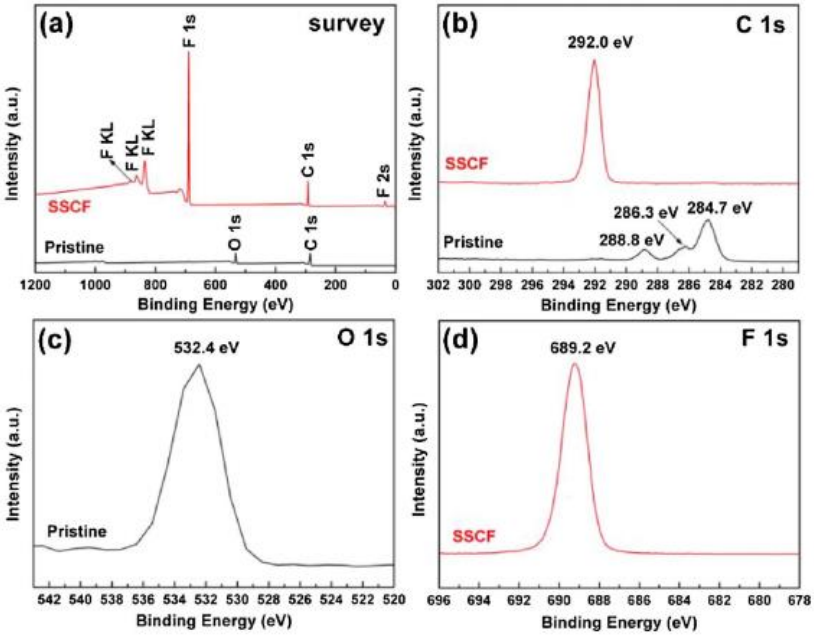
The spectrum C 1 s (Fig. 2b) showed three peaks located at 284.7 eV, 286.3 eV, and 288.8 eV, respectively, belonging to C-H / C-C, C-OH, and O-C-O, respectively. The spectrum O 1s showed a basic peak at 532.4 eV relative to C-O (Fig. 2c). In other words, the cotton fabric was originally superhydrophilic due to the large number of hydroxyl groups in the cotton cellulose and the rough microstructure. Pure cotton fabric WCA and OCA rated 0 °, which showed excellent superhydrophilicity and superoleophilicity.

After spraying the PTFE, the surface of the microfiber was densely and uniformly coated with nanoparticles measuring 200 nm (Fig. 1g), which significantly increased the surface roughness of the cotton fiber (Fig. 1h). PTFE is an image for SSCF obtained in this way to test XPS sinking. 2a and b. shown in. Signals from oxygen were lost, and signals from fluorine were generated (F 1 at 689.2 eV). In addition, C1 s switched to 292.0 eV, which is the typical binding energy for C-F bonds. All of these signals indicated that the cotton fabric was completely covered with PTFE nanoparticles.



Picture. 1. FESEM images for pure (a - c) and superhydrophobic / superoleophilic (f - h) cotton fabrics; pure (d) and superhydrophobic / superoleophilic (i) water (red) and toluene (black) photographs on the cotton surface.

After drying for 2 h at 150 ° C, the PTFE coating showed good adhesion to the underside of the cotton fabric. Two main measures were taken to achieve good adhesion of PTFE to the fabric. First, the PTFE used is not dry PTFE nanoparticles, but PTFE nanoparticles are a concentrated dispersion containing water and dispersants. PTFE is simply sprayed onto the fabric. Second, and most importantly, the sample was heated to improve the adhesion between the PTFE and the fabric sprayed in this way. At high temperatures (e.g., 150 ° C), PTFE nanoparticles are assumed to come together and adhere tightly to the tissue. Presumably, the high-temperature treatment increased the movement of the PTFE molecular chain and enhanced the adhesion of the PTFE to the cotton surface. The PTFE-prepared coating reduces the surface energy of the fabric and creates hierarchical micro / nanometer-like structures that trap more air under a drop of water. This means that the water droplet was mainly in contact with the trapping air and the cotton fabric could no longer get wet and exhibited a superhydrophobic property with high WCA 160.2 ± 1.4 ° and low WSA 2.8 ± 0.3°.

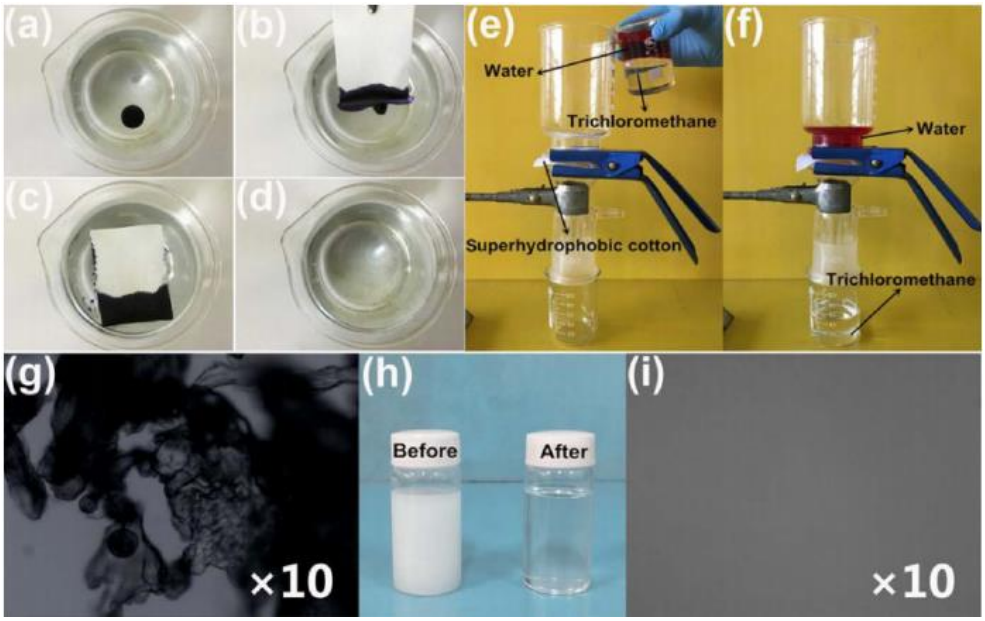


Picture. 2. XPS spectra of pure and superhydrophobic / superoleophilic cotton fabric surface: general appearance (a), C 1s (b), O 1s (c) and F 1s (d).

However, the superhydrophobic cotton fabric still retained its superoleophilicity, and the toluene that fell on it was quickly dispersed by OCA at 0 ° (Fig. 1i). When immersed, the SSCF floated in the water and the clean cotton cloth was quickly submerged. However, when placed in toluene, both the primary and the SSCF were submerged.

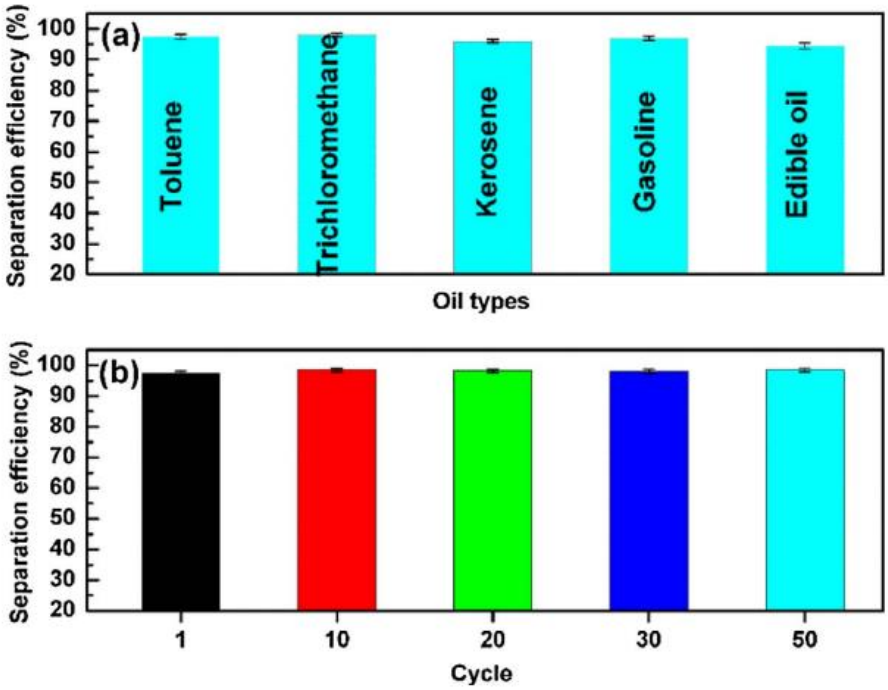
3.2. Separation of oil and water.

SSCF demonstrated excellent selective sorption of oil from water. As soon as the SSCF comes in contact with a colored drop of unmixed toluene floating on the surface of the water, the toluene is rapidly adsorbed and dispersed upwards (Fig. 3b). SSCF, which adsorbs toluene, can float on the water surface due to its lightness and water repellent properties (Figure 3c). Toluene was completely adsorbed (absorbed) from the water surface and no clear residues of toluene were observed after SSCF removal (Fig. 3d). In addition, the SSCF did not drink water. Figure 3e and f show the process of separating a mixture of unmixed oil (trichloromethane) and water using a small oil and water separation device and SSCF. When a mixture of oil and water consisting of 50 ml of trichlormethane and 50 ml of water was poured into a high glass vessel (Fig. 3e), the oil rapidly passed through the SSCF and passed under the glass in 3 minutes due to superoleophilicity and gravity.



Picture. 3. Photographs of the oil sorption process for 1 ml of toluene (stained with Sudanese black) floating in water over (a) 0s, (b) 2s, (c) 8s, (d) 10s; the process of separating oil from immiscible (painted with Biebrich Scarlet) water and a mixture of trichloromethane (e, f); optical microscopy and photograph of oil and water emulsion before and after separation (g - i).

When water could not enter the SSCF and stood above it (Fig. 3f), the amount of oil after separation was 48.5 ml and the separation efficiency of SSCF oil reached 97.0%. The efficacy of separating SSCF with various oils such as toluene, trichloromethane, gasoline, kerosene, and edible oils has been studied. The oil separation efficiency of these oils in the first cycle exceeded 95.0% (Figure 4a). To evaluate the reuse of SSCF, the oil separation efficiency (as a toluene representative) is structured as a function of the separation cycle Figure 4b. The separation efficiency of toluene was 98.5% even after a 50-fold separation period. After use, SSCF regained its original properties when washed with acetone. Even after use for 50 cycles, the WCA was still above 150 °. This result showed that SSCF not only has the efficiency of separating oil from water, but also makes it reusable. SSCF can also be used in emulsified oil separation.



Picture. 4. Efficiency of oil separation from superhydrophobic / superoleophilic cotton fabric: for different types of oils (a); for toluene after different separation cycles (b).

The emulsified oil was prepared by mixing water and toluene in a 1:25 volume ratio and stabilized with Span 80. The emulsion in oil and water was mixed at 2000 rpm for 1 h before separation and turned a milky white color (Fig. 3h). Immediately after pouring 50 ml of emulsion into the oil separator, it passed through SSCF. Meanwhile, the water and emulsifier were returned and left in the top glass container. Optical micrographs of the original emulsified oil showed a large black area due to the inability of light to enter the solution (Fig. 3g). However, the optical micro-images of the collected oil were not black and were very transparent (Fig. 3i). The amount of water in the collected oil was also measured with an oil moisture meter (GY106, Wuhan Guoyi Company, China). The water content of toluene (20 ml) collected after separation of the oil and water emulsion was 0.16 μg / ml. This showed that the emulsified oil was separated and that only a small amount of water was present in the oil after separation.

4. Conclusions.

Thus, a superhydrophobic / superoleophilic cotton fabric was successfully produced with a simple approach. The oil can be quickly adsorbed (absorbed) and separated from the oil / water mixture (boiling water, ice water, 1ml HCl, 1ml NaOH and 1ml NaCl) and can even form emulsified oil using SSCF samples. In addition, the oil separation efficiency for different oils consistently exceeded 95.0% even after a 50-fold separation period. In addition, SSCF showed excellent chemical (in boiling water, ice water, strongly corrosive solutions and organic solvents) and mechanical (friction and ultrasonic treatment) resistance. SSCF samples can be widely used in the treatment of oily wastewater due to their high oil separation efficiency and durability.

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