

УДК 332.14 ББК 65.051

JEL Classification: E02, L22

KOLECHKOV D.¹

ANALYSIS OF THE COMPETITIVENESS OF THE CONSTRUCTION COMPLEX OF THE NORTHERN REGIONS

DOI: 10.32620/cher.2021.2.01

Formulation of the problem. The dynamism of the economic development of regions largely depends on the competitiveness of their industries. One of the main drivers of the economy is the construction complex, ensuring the competitiveness of which is the main task of public administration bodies. This requires tools for monitoring the main indicators of the construction industry that form competitive advantages. *The purpose of the study* is to find new mechanisms for assessing the competitiveness of the construction complex of the regions and identifying weaknesses in the development of the industry. The study used the *methodology* of logical, historical, statistical and comparative analysis, methods of expert assessments, economic modeling, methods of assessing the reliability of qualitative and quantitative statistical indicators. *The main hypothesis of the study* was the assumption that due to rising cost factors and difficult climatic conditions, the northern regions have a low level of competitiveness of the construction complex. *Summary of the main material.* The article provides a brief overview of methodological approaches to the study of the competitiveness of the region and its construction complex. The author's approach to calculating the integral indicator of competitiveness is presented. Based on the results obtained, the classification of the northern regions according to the level of competitiveness of the construction industry was carried out. The research hypothesis was confirmed. The main indicators forming the integral index of competitiveness are analyzed. *The practical significance* of the work lies in the application by the executive authorities of the results of the study in the preparation of medium-and long-term programs for the socio-economic development of the regions. *Conclusions and prospects for further research.* The low competitiveness of the northern regions is affected by the low growth rates of the employed, the number of high-performance jobs and the volume of work performed. The further perspective of the research is to refine the methodology for assessing the competitiveness of the construction complex in the region in order to determine the weighting coefficients when calculating the generalizing integral indicator and analyze it for all subjects of the Russian Federation.

Key words:

competitiveness, construction complex, normalized indicators, integral indicator, grouping of regions.

АНАЛІЗ КОНКУРЕНТОСПРОМОЖНОСТІ БУДІВЕЛЬНОГО КОМПЛЕКСУ ПІВНІЧНИХ РЕГІОНІВ

Постановка проблеми. Динамічність економічного розвитку регіонів багато в чому залежить від конкурентоспроможності їх галузей. Одним з головних драйверів економіки є будівельний комплекс, забезпечення конкурентоспроможності якого є основним завданням органів держуправління. Для цього необхідний інструментарій моніторингу за основними показниками будівельної галузі, що формують конкурентні переваги. *Мета дослідження* спрямована пошук нових механізмів оцінки конкурентоспроможності будівельного комплексу регіонів та виявлення слабких місць розвитку галузі. У дослідженні використовувалися *методологія* логічного, історичного, статистичного та порівняльного аналізу, методи експертних оцінок, економічного моделювання, методу оцінки достовірності якісних і кількісних статпоказників. *Основною гіпотезою дослідження* стало припущення, що

¹ **Колечков Дмитро Васильович**, канд. екон. наук, старший науковий співробітник Інституту соціально-економічних і енергетичних проблем Півночі Комі наукового центру Уральського відділення Російської академії наук, м. Сиктивкар, Росія.

Kolechkov Dmitry, Ph.D. in Economic, Senior research associate of Institute of social and economic and power problems of the North of Komi of scientific center of the Ural office of the Russian Academy of Sciences, Syktyvkar, Russia.

ORCID ID: 0000-0002-4784-7915

e-mail: Kdb1970@mail.ru



в силу подорожчання факторів і складних кліматичних умов північні регіони мають низький рівень конкурентоспроможності будівельного комплексу. *Виклад основного матеріалу.* У статті подано короткий огляд методичних підходів до дослідження конкурентоспроможності регіону та його будівельного комплексу. Представлено авторський підхід обчислення інтегрального показника конкурентоспроможності. На основі отриманих результатів проведено класифікацію північних регіонів за рівнем конкурентоспроможності будівельної галузі. Підтверджена гіпотеза дослідження. Проаналізовано основні показники, що формують інтегральний індекс конкурентоспроможності. *Практична значимість* роботи полягає в застосуванні органами виконавчої влади результатів дослідження при складанні середньострокових і довгострокових програм соціально-економічного розвитку регіонів. *Висновки та перспективи подальших досліджень.* На невисоку конкурентоспроможність північних регіонів впливають низькі значення темпів зростання зайнятих, числа високопродуктивних робочих місць і обсягу виконаних робіт. Подальшою перспективою досліджень є доопрацювання методики оцінки конкурентоспроможності будівельного комплексу регіону на предмет визначення коефіцієнтів вагомості при розрахунку узагальнюючого інтегрального показника і аналіз по всіх суб'єктах РФ.

Ключові слова:

конкурентоспроможність, будівельний комплекс, нормовані показники, інтегральний індикатор, угруповання регіонів.

АНАЛИЗ КОНКУРЕНТОСПОСОБНОСТИ СТРОИТЕЛЬНОГО КОМПЛЕКСА СЕВЕРНЫХ РЕГИОНОВ

Постановка проблемы. Динамичность экономического развития регионов во многом зависит от конкурентоспособности их отраслей. Одним из главных драйверов экономики является строительный комплекс, обеспечение конкурентоспособности которого является основной задачей органов государственного управления. Для этого необходим инструментальный мониторинг за основными показателями строительной отрасли, формирующих конкурентные преимущества. *Цель исследования* направлена на поиск новых механизмов оценки конкурентоспособности строительного комплекса регионов и выявления слабых мест развития отрасли. В исследовании использовались *методология* логического, исторического, статистического и сравнительного анализа, методы экспертных оценок, экономического моделирования, метода оценки достоверности качественных и количественных статпоказателей. *Основной гипотезой исследования* стало предположение, что в силу удорожающих факторов и сложных климатических условий северные регионы имеют низкий уровень конкурентоспособности строительного комплекса. *Изложение основного материала.* В статье дан краткий обзор методических подходов к исследованию конкурентоспособности региона и его строительного комплекса представлен. Представлен авторский подход исчисления интегрального показателя конкурентоспособности. На основе полученных результатов проведена классификация северных регионов по уровню конкурентоспособности строительной отрасли. Подтверждена гипотеза исследования. Проанализированы основные показатели, формирующие интегральный индекс конкурентоспособности. *Практическая значимость работы* заключается в применении органами исполнительной власти результатов исследования при составлении среднесрочных и долгосрочных программ социально-экономического развития регионов. *Выводы и перспективы дальнейших исследований.* На невысокую конкурентоспособность северных регионов влияют низкие значения темпов роста занятых, числа высокопроизводительных рабочих мест и объёма выполненных работ. Дальнейшей перспективой исследований является доработка методики оценки конкурентоспособности строительного комплекса региона на предмет определения коэффициентов весомости при расчёте обобщающего интегрального показателя и анализ по всем субъектам РФ.

Ключевые слова:

конкурентоспособность, строительный комплекс, нормированные показатели, интегральный индикатор, группировка регионов.

Problem statement. Meeting the needs of the population, government and business in timely, safe and high quality products and services is the main priority in the development of the modern construction complex of the regions. One of the key elements in the socio-economic system of the country is the construction complex, the issues of ensuring the competitiveness

of which today find their place among the main positions of strategic planning, including at the regional level. The strategy of socio-economic development of the Komi Republic has been implemented since 2006 with periodic updating and extension of the planning period. In 2015-2017, a new version of the Strategy was developed with the extension of the planning period until



2035 [6]. To achieve the set strategic goals, it is necessary to monitor the competitiveness of both the region as a whole and its sectoral complexes. The development of methodological approaches to assessment and, on their basis, the study of the main components of the competitiveness of the construction complex is the basis of this study.

Analysis of recent research and publications. A brief overview of theoretical approaches to the study of the competitiveness of the region and its construction complex is presented in a previously published work [4]. Analysis of practical works devoted to this area of research has made it possible to single out several works. A.N. To determine the competitiveness of a construction organization, Tsvetkov proposes to take into account the specifics of its products, and emphasizes that the main difference between the competitiveness of a construction organization is, first of all, in a more complete set of characteristics that determine its competitiveness [9]. YES. Kirsanov and V.D. Zharikov determine the main criteria and indicators of the competitiveness of products on the example of mechanical engineering: quality, product differentiation, price determined by the costs of production and sales of products. The main indicator of the competitiveness of an enterprise is its potential ability to produce competitive products, which is characterized by the following criteria: timely renewal, technical level and quality, price [3]. NN Milchakova, analyzing the existing assessment methods, concludes that most of them are based

on the scoring mechanism with an emphasis on indicators specific to the analyzed industry [5]. M.A. Shuvaev proposed the author's classification of the factors of the competitiveness of a construction company and outlined a methodology for their calculation. The importance of competitiveness factors was revealed using the method of expert assessments. An integral coefficient of the competitiveness of construction enterprises has been developed [10].

The purpose of the article on the basis of existing industry assessment methods, develop new criteria and indicators with the help of which to analyze the competitiveness of the construction complex of the northern regions of Russia.

Presentation of the main material. The level of competitiveness of the region's construction complex is one of the criteria for the success of its socio-economic development. At the same time, it is necessary to have an appropriate indicator that allows you to quantitatively assess the degree of competitiveness of a territorial unit.

When forming a methodology for assessing the competitiveness of the construction complex of a territory, it is important not only to correctly select the necessary indicators, but also to search for theoretical justifications for the reliability and objectivity of the conducted research. Of the previously selected indicators (about 50) of competitiveness, 9 indicators were selected (table 1).

Table 1: Competitiveness assessment system construction complex

Conditional Designation	Indicator	Unit of measurement
X ₁	Introduced new fixed assets mln. Rub. per one employed	Introduced new fixed assets mln. Rub. per one employed
X ₂	Depreciation of fixed assets percentage	Depreciation of fixed assets percentage
X ₃	Investments in fixed assets, thous. Rub. per one employed	Investments in fixed assets, thous. Rub. per one employed
X ₄	Employment growth rate percentage	Employment growth rate percentage
X ₅	The number of high-performing jobs units per 1000 employed	The number of high-performing jobs units per 1000 employed
X ₆	Volume of work performed thousand rubles per one employed	Volume of work performed thousand rubles per one employed
X ₇	Index of the physical volume of work performed under construction contracts, percentage	Index of the physical volume of work performed under construction contracts, percentage
X ₈	Put into operation the total area of residential buildings square meter per 1000 population	Put into operation the total area of residential buildings square meter per 1000 population
X ₉	Average actual cost of construction of one square meter of the total area of residential premises, ruble	Average actual cost of construction of one square meter of the total area of residential premises, ruble

Source: developed by the author

Further, the calculation of the numerical values of competitiveness was carried out, from which their normalized values were formed. Then the highest and lowest values of particular indicators in the group of the studied regions were determined and the normalized parameters were calculated for the northern regions of the Russian Federation. The information base of the study was the Unified Interdepartmental Information and Statistical System of Rosstat [2], on the basis of which an array of data of the above indicators was formed for 85 constituent entities of the Russian Federation in dynamics from 2010 to 2018. To bring the indicators involved in the establishment of integral indices of competitiveness to a comparable form, the method of minimax normalization was used, despite a number of limitations associated with its use. This method consists in converting the original range, within which the values are distributed, to the range [0; 1], in contrast to other normalization methods that assume the presence of negative values [7].

The necessary components in calculating the normalized private indicator (N_i) are the current value of the individual indicator of the competitiveness of the territorial unit (X_i) and its standard values, which are the minimum and maximum values ($\max X_i$ or $\min X_i$), which are available among similar parameters in the studied group of regions. At the same time, one should take into account the type of relationship (direct or reverse) that exists between the particular indicator and the level of competitiveness. If an increase in the quantitative indicator increases regional competitiveness (for example, the commissioning of fixed assets, then the calculations are made according to the following basic expression (1):

$$N_i = \frac{X_i - \min X_i}{\max X_i - \min X_i} \quad (1)$$

If, for example, with an increase in the degree of depreciation of fixed assets, the level of competitiveness decreases, i.e. there is an inverse relationship, then the alternative equation designed to calculate the normalized private indicator will take the following form (2):

$$N_i = 1 - \frac{X_i - \min X_i}{\max X_i - \min X_i} \quad (2)$$

The difficulties in studying the competitiveness of a region are associated with the fact that it is often necessary to deal with expert

opinions in the course of establishing the weight coefficients for each of the particular indicators used (their normalized values). The recommended system for assessing the level of competitiveness, based on the mathematical and statistical method for calculating the weight coefficients (W_i), which will be assigned to private indicators (or rather, normalized private indicators), excludes the possibility of such difficulties [1].

Further, in order to find the integral (generalized) indicator of regional competitiveness (I), it is necessary to go to the following equality, which establishes the sum of normalized private indicators (N_i), weighted taking into account the level of importance (W_i) [8] (3).

$$I = \sum_{i=1}^n w_i \cdot N_i \quad (3)$$

Due to the complexity of determining the weight coefficients, at this stage of the study, the calculation of the generalizing integral indicator was made according to the geometric mean formula.

In accordance with these features, the calculated integral indices of the competitiveness of the construction complex of the northern regions make it possible to assess the potential of each region on a scale from 0 to 1. The significance of the calculated value of the level of individual regional competitiveness can be classified as follows:

- from 0 to 0.24 - extremely low level of competitiveness;
- from 0.25 to 0.49 - low level of competitiveness;
- from 0.50 to 0.74 - the average level of competitiveness;
- from 0.75 to 1 - a high level of competitiveness.

The dynamics of the consolidated integral indicator of competitiveness, calculated according to the proposed methodology, is presented in table 2.

During the study period, among 85 constituent entities of the Russian Federation as a whole in the North, the level of competitiveness of the construction complex has an average value - from 0.27 to 0.35.

The grouping of the northern regions according to the level of competitiveness of the construction complex according to the average value of the generalizing integral indicators for the study period is given in table 3.



Table 2: Dynamics of the consolidated integral indicator of the competitiveness of the construction complex of the northern regions for 2010-2018

Indicator	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average
Russian Federation	0,249	0,299	0,264	0,270	0,252	0,256	0,233	0,227	0,225	0,258
North	0,304	0,351	0,319	0,323	0,285	0,293	0,274	0,265	0,272	0,307
Republic of Karelia	0,213	0,244	0,228	0,249	0,195	0,223	0,194	0,196	0,222	0,228
Komi Republic	0,224	0,276	0,349	0,277	0,259	0,272	0,317	0,208	0,229	0,288
Arkhangelsk region ¹	0,264	0,293	0,208	0,288	0,172	0,203	0,214	0,180	0,230	0,247
Nenets Autonomous District	0,614	0,560	0,341	0,436	0,507	0,481	0,355	0,418	0,519	0,505
Murmansk region	0,140	0,199	0,180	0,175	0,226	0,187	0,184	0,217	0,159	0,197
Khanty-Mansi Autonomous Okrug - Ugra	0,335	0,385	0,345	0,328	0,247	0,278	0,216	0,233	0,227	0,304
Yamalo-Nenets Autonomous District	0,345	0,427	0,398	0,360	0,379	0,338	0,337	0,277	0,466	0,395
The Republic of Sakha (Yakutia)	0,248	0,396	0,355	0,333	0,345	0,318	0,337	0,324	0,288	0,341
Kamchatka Krai	0,253	0,308	0,226	0,271	0,184	0,200	0,205	0,214	0,140	0,239
Magadan Region	0,190	0,235	0,270	0,337	0,220	0,265	0,242	0,150	0,167	0,240
Sakhalin Region	0,346	0,494	0,338	0,339	0,302	0,381	0,255	0,256	0,235	0,339
Chukotka Autonomous Okrug	0,230	0,211	0,182	0,341	0,178	0,230	0,265	0,239	0,206	0,220

Source: Author's calculations.

¹ Hereinafter, in the tables and in the text, the indicators for the Arkhangelsk region. given without taking into account the Nenets Autonomous District

The group of territories with a high level of competitiveness of the construction complex does not include any region. Only the Nenets Autonomous Okrug has an average level, half of the territories belong to the low level and the other five regions - to the extremely low level.

A more detailed analysis of competitiveness allows us to make a dynamic range of par-

ticular indicators. It should be noted that for a number of particular indicators of the competitiveness of the construction complex, a number of northern territories have in some years of the study period both maximum (1) and minimum values (0) among 85 constituent entities of the Russian Federation.

Table 3: Grouping of northern regions by the level of competitiveness of the construction complex

Territories	Competitiveness level	Value
–	high level	from 0.75 to 1
Nenets Autonomous Okrug	average level	from 0.50 to 0.74
Komi Republic, Arkhangelsk Region, Khanty-Mansi Autonomous Okrug, Yamalo-Nenets Autonomous Okrug, The Republic of Sakha (Yakutia), Sakhalin Region	low level	from 0.25 to 0.49
Republic of Karelia, Murmansk Region, Kamchatka Territory, Magadan Region, Chukotka Autonomous Okrug	extremely low level	from 0 to 0.24

Source: Author's calculations

According to the indicator "Introduced new fixed assets" among the northern regions for 2010-2018. The Nenets Autonomous District has the best values of the coefficients, and almost

every year this indicator was the highest among 85 constituent entities of the Russian Federation. The increase for the study period amounted to 0.31 points (Table 4).



Table 4: Dynamics of the normalized indicator "Introduced new fixed assets" of the northern regions for 2010-2018

Indicator	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average
Russian Federation	0,14	0,17	0,17	0,20	0,17	0,09	0,12	0,11	0,15	0,15
North	0,32	0,38	0,44	0,40	0,39	0,22	0,29	0,36	0,38	0,35
Republic of Karelia	0,16	0,19	0,13	0,17	0,17	0,09	0,10	0,06	0,10	0,13
Komi Republic	0,14	0,14	0,59	0,25	0,39	0,16	0,31	0,23	0,21	0,27
Arkhangelsk region ¹	0,17	0,18	0,23	0,27	0,17	0,07	0,08	0,16	0,17	0,17
Nenets Autonomous District	0,69	0,43	0,90	1,00	1,00	1,00	1,00	0,97	1,00	0,89
Murmansk region	0,16	0,26	0,23	0,24	0,33	0,19	0,18	0,24	0,17	0,22
Khanty-Mansi Autonomous Okrug - Ugra	0,43	0,43	0,40	0,61	0,44	0,26	0,26	0,43	0,36	0,40
Yamalo-Nenets Autonomous District	0,45	0,63	0,78	0,34	0,53	0,24	0,44	0,63	0,91	0,55
The Republic of Sakha (Yakutia)	0,15	0,19	0,29	0,27	0,33	0,11	0,25	0,12	0,11	0,20
Kamchatka Krai	0,23	0,42	0,24	0,23	0,10	0,07	0,10	0,17	0,12	0,19
Magadan Region	0,12	0,17	0,22	0,47	0,16	0,10	0,22	0,17	0,66	0,25
Sakhalin Region	0,20	0,52	0,21	0,42	0,25	0,41	0,22	0,22	0,28	0,30
Chukotka Autonomous Okrug	0,77	0,21	0,25	0,68	0,36	0,39	0,51	1,00	0,26	0,49

Source: Author's calculations

The Yamalo-Nenets Autonomous District has high values, where this indicator increased by 0.46 percentage points over the study period and amounted to 0.91 in 2018. In the rest of the northern regions, the values were not so great. However, it is possible to note an increase in the normalized coefficient in the Magadan region - by 0.54 pp. A significant deterioration of this indicator was noted in the Chukotka Autonomous Okrug (by 0.51 pp) and Kamchatka Krai (by 0.11 pp). On average, during the period under study, the least amount of fixed assets was introduced per person employed in the Republic of Karelia (the average normalized coefficient is 0.13), the Arkhangelsk region. (0.17), Kamchatka Territory (0.19), the Republic of Sakha (Yakutia) (0.2) and Murmansk Region. (0.22).

In contrast to the previous indicator, the situation in the northern regions is much better in terms of the "Degree of depreciation of fixed assets" indicator. Although the wear of the main ones on average in the North for the period under study is high - from 40 to 60%, the normalized coefficients of most northern territories in comparison with all regions of Russia look much better (this indicator has an inverse relationship, i.e., the higher it is value, the lower the degree of wear).

High values (more than 0.5 and higher than the average in Russia) of the normalized coefficient of this indicator are in the Nenets Autonomous Okrug (on average for 2010-2018 - 0.69), the Republic of Sakha (Yakutia) (0.64), Kamchatka Territory (0.61) and Arkhangelsk Region. (0.57). An extremely low value in the Khanty-Mansi Autonomous Okrug - 0.13 (almost two-thirds of the funds are worn out).

For the period 2010-2018 positive shifts in the normalized indicator were observed in the Magadan region. (by 0.58 p.) and the Komi Republic (by 0.36 p.), negative - in the Sakhalin region. (by 0.54 p.) and Nenets Autonomous Okrug (by 0.48 p.).

According to the indicator "Investment in fixed assets" among the northern regions for 2010-2018. the best values of the coefficients have the Nenets Autonomous Okrug (and almost every year this indicator was the highest among 85 constituent entities of the Russian Federation) and the Yamalo-Nenets Autonomous Okrug.

Extremely low values of this indicator are observed in the Republic of Karelia (on average for 2010-2018 - 0.04), Arkhangelsk region. (0.05) and Kamchatka Territory (0.06). For the rest of the northern regions, the values





of the normalized coefficients are also not high, which is influenced by the extreme values in the Nenets Autonomous Okrug and Yamalo-Nenets.

During the study period, an increase in this indicator was recorded in the Yamalo-Nenets Autonomous District (by 0.1 p.), Magadan Region. (by 0.1 p.), Murmansk region. (by 0.09 p.) and Chukotka AO (0.08 p.); decrease - in the Khanty-Mansi Autonomous Okrug (by 0.08 percentage points), Kamchatka Krai (by 0.06 percentage points) and the Sakhalin Region (by 0.06 percentage points).

According to the rate of change in the number of employed, the situation is on average for 2010-2018. equivalent - all northern regions had normalized indicators with a low level of competitiveness.

Except for the Arkhangelsk region. for 2010-2018 in terms of the growth rate of employed in all regions, the normalized indicators improved, the maximum in the Chukotka Autonomous Okrug (by 0.91 percentage points), the Republic of Sakha (Yakutia) (by 0.44 percentage points), and the Murmansk Region. (by 0.25 p.) and the Komi Republic (by 0.25 p.).

According to the indicator "The number of highly productive jobs" among the northern regions for 2010-2018. the situation was unfavorable - almost half of the territories according to the normalized coefficient in terms of the level of competitiveness were in an extremely low zone. The values were relatively slightly better in Chukotka Autonomous Okrug (0.4 on average) and Yamalo-Nenets Autonomous Okrug (0.36), and even then, in 2018 relative to 2010, these indicators decreased. On the positive side, the increase in the coefficient in the Komi Republic (by 0.11 percentage points) and the Sakhalin Region should be noted. (by 0.1 p.).

According to the main resulting indicator "Volume of work performed" among the northern regions for 2010-2018. the situation was relatively good only in the Nenets Autonomous District, where the average normalized indicator for the period under study was 0.51 and in 2018 was the maximum among 85 subjects of the Russian Federation.

A similar situation was with the indicator "Index of the physical volume of work performed" among the northern regions for 2010-2018. only in the Nenets Autonomous Okrug, where the average normalized indicator for the period under study was 0.4 and in 2018 was the maximum among 85 subjects of the Russian Federation. In addition, a noticeable improvement in the indicator values in Yamalo-Nenets Autonomous Okrug (by 0.73 p.) Should be noted. However, in most regions in 2018, the coefficients decreased relative to 2010.

To assess the level of competitiveness of housing construction, this study used the indicator "Total area of residential buildings commissioned".

Relatively high values of this indicator among the northern regions of the Russian Federation for the period under study were observed only in Nenets Autonomous Okrug (on average for 2010-2018 - 0.59), Sakhalin Region. (0.45) and Khanty-Mansi Autonomous Okrug (0.42). Extremely low values were noted in Chukotka Autonomous Okrug (0.01 - for the entire study period, the lowest values among all subjects of the Russian Federation), Murmansk region. (0.02), Magadan region. (0.06), Komi Republic (0.14), Kamchatka Territory (0.16), Arkhangelsk Region. (0.21) and the Republic of Karelia (0.27).

It is noteworthy that during the entire study period there were no significant changes in this indicator. The exception is the relatively "prosperous" Nenets Autonomous District, where the normalized coefficient in 2018 compared to 2010 decreased by 0.61 points.

Average values for 2010-2018 partial integral normalized indicators of competitiveness that affect the generalized integral indicator are shown in Table 5.

Conclusions and prospects for further research. Thus, on average, for the period under study, a positive influence (more than 0.5) on the generalizing integral indicator of competitiveness had the particular indicators of the following northern regions:

- Commissioning of fixed assets (Nenets AO (0.89) and Yamalo-Nenets AO (0.6));

Table 5: Average for 2010-2018 values of private indicators of the competitiveness of the construction complex of the northern regions of the Russian Federation

Indicator	Introduced new fixed assets	Degree of depreciation of fixed assets	Investments in fixed assets	Growth rate of employed	Number of highly productive jobs	Volume of work performed	Index of physical volume of work	Put into effect the total area of residential buildings	Average actual cost of construction	Generalized integral indicator
	X1	X2	X3	X4	X5	X6	X7	X8	X9	I
Russian Federation	0,148	0,492	0,062	0,380	0,183	0,213	0,272	0,398	0,698	0,258
North	0,353	0,446	0,245	0,387	0,256	0,336	0,298	0,156	0,403	0,307
Republic of Karelia	0,129	0,483	0,029	0,415	0,241	0,173	0,295	0,274	0,664	0,228
Komi Republic	0,269	0,375	0,168	0,353	0,293	0,305	0,269	0,140	0,680	0,288
Arkhangelsk region ¹	0,168	0,575	0,053	0,375	0,248	0,165	0,307	0,206	0,680	0,247
Nenets Autonomous District	0,888	0,690	0,995	0,385	0,243	0,514	0,395	0,593	0,309	0,505
Murmansk region	0,222	0,377	0,071	0,412	0,254	0,254	0,297	0,021	0,465	0,197
Khanty-Mansi Autonomous Okrug - Ugra	0,402	0,129	0,308	0,355	0,176	0,317	0,287	0,425	0,573	0,304
Yamalo-Nenets Autonomous District	0,551	0,307	0,811	0,421	0,361	0,436	0,297	0,316	0,276	0,395
The Republic of Sakha (Yakutia)	0,201	0,644	0,197	0,469	0,299	0,376	0,282	0,376	0,435	0,341
Kamchatka Krai	0,186	0,609	0,071	0,446	0,172	0,336	0,235	0,163	0,319	0,239
Magadan Region	0,253	0,481	0,149	0,425	0,219	0,417	0,304	0,057	0,219	0,240
Sakhalin Region	0,304	0,693	0,294	0,369	0,230	0,444	0,266	0,446	0,215	0,339
Chukotka Autonomous Okrug	0,492	0,438	0,141	0,380	0,403	0,288	0,381	0,011	0,000	0,220

Source: Author's calculations

- Degree of depreciation of fixed assets (Nenets Autonomous Okrug and Sakhalin Region (0.69 each), Republic of Sakha (Yakutia) (0.64), Kamchatka Territory (0.61), Arkhangelsk Region (0.58));

- Investments in fixed assets (Nenets AO (0.99) and Yamalo-Nenets AO (0.81));

- The total area of residential buildings was put into operation (Nenets Autonomous District (0.59));

- Average actual cost of construction (Komi Republic and Ar-Khangelsk region (0.68 each), Khanty-Mansi Autonomous Okrug - Yugra (0.57)).

According to such indicators as the growth rate of the employed, the number of highly productive jobs, the volume of work performed, the index of the physical volume of work, there are no territories with a high coefficient at all. Obviously, most of the territories have low coefficient values for almost all specific indicators of competitiveness, which in-

fluenced the low values of the composite integral indicator.

A further prospect of research is the refinement of the methodology for assessing the competitiveness of the regional construction complex in order to determine the weight coefficients when calculating the generalizing integral indicator. The ultimate goal of the study is to develop measures to increase the competitiveness of the region's economy.

References

1. Batrak, V. S. (2016). Methodology for assessing the level of competitiveness of regions. *Regional economy: theory and practice*. 4, 89-103.
2. Unified interdepartmental information and statistical system of Rosstat. Retrieved from: <http://fedstat.ru>
3. Kirsanova, D. A., Zharikov, V. D. (2016). Criteria and indicators of the competitiveness of machine-building products. *Socio-economic phenomena and processes*, 3(11).



4. Kolechkov, D. V. (2019). Theoretical aspects of the competitiveness of the construction complex of the region. *Time description of economic reforms*, 2(34), 6–15.

5. Milchakova, N. N., Mandrichenko, A. A. (2019). Analysis of methods for assessing the competitiveness of the industry. *Economics, business, innovations: collection of articles of the VIII International Scientific and Practical Conference: 2 hours, Penza, 05 June 2019. Penza: "Science and Education"*, 93–95.

6. Resolution of the Government of the Republic of Komi dated April 11, 2019. № 185 "On the Strategy of Social and Economic Development of the Republic of Komi for the Period up to 2035"

7. Strelkova, L. V., Kabanov, S. S. (2012). Technological development of industries: assessment and prospects. *Bulletin of the Nizhny Novgorod University. N.I. Lobachevsky*, 2-2, 247–251.

8. Fishburne, P. (1978). *Utility theory for decision making*. Moscow: Nauka, 352.

9. Tsvetkov, A. N. (2011). Indicators for assessing the competitiveness of construction organizations. *Scientific and technical statements of SPbSPU*, 4

10. Shuvaev, M. A. (2011). Integral assessment of the competitiveness of a construction enterprise. *Modern competition*, 3(27).

Література

1. Батрак В. С. Методика оцінки рівня конкурентоспроможності регіонів. *Регіональна економіка: теорія і практика*. 2016. № 4. С. 89-103.

Стаття надійшла

до редакції : 20.05.2021 р.

2. Єдина міжвідомча інформаційно-статистична система Росстату. [Електронний ресурс]. URL: <http://fedstat.ru>

3. Кірсанова Д. А., Жариков В. Д. Критерії і показники понкуренто-здатності машинобудівної продукції. *Соціально-економічні явленя і процеси*. 2016. № 3 (11).

4. Колечко Д. В. Теоретичні аспекти конкурентоспроможності будівельного комплексу регіону. *Часопис економічних реформ*. 2019. № 2 (34). С. 6–15.

5. Мильчакова Н. М., Мандриченко А. А. Аналіз методик оцінки конкурентоспроможності галузі. *Економіка, бізнес, інновації: збірник статей. VIII Міжнародна науково-практична конференція: в 2 ч., м. Пенза, 5 червня 2019 р. Пенза: "Наука і Освіта", 2019. С. 93-95.*

6. Постанова Уряду Республіки Комі від 11 квітня 2019 р № 185 «Про Стратегію соціально-економічного розвитку Республіки Комі на період до 2035 року»

7. Стрелкова Л. В., Кabanov С. С. Технологічний розвиток галузей промисловості: оцінка та перспективи. *Вісник Нижгородського університету ім. Н.І. Лобачевського*. 2012. № 2-2. С. 247–251.

8. Фішберн П. Теорія корисності для прийняття рішень. Москва: Наука, 1978. 352 с.

9. Цветков А.М. Показники оцінки конкурентоспроможності будівельних організацій. *Науково-технічні відомості СПбДПУ*. 2011. №4.

10. Шуваев М. А. Інтегральна оцінка конкурентоспроможності будівельного підприємства. *Сучасна конкуренція*. 2011. №3 (27).

Стаття прийнята

до друку: 30.06.2021 р.

Бібліографічний опис для цитування :

Kolechkov D. Analysis of the competitiveness of the construction complex of the northern regions / D. Kolechkov // Часопис економічних реформ. – 2021. – № 2 (42). – С. 6–14.

