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Sustainability of enterprises in the corporate structure of the construction group: content and determining factors

The development of construction complexes in modern economic conditions is conditioned by the significant impact of negative environmental factors due to geopolitical and macroeconomic crisis phenomena. There is a need to develop approaches to strategic management of construction enterprises and their associations in order to improve sustainability and competitiveness in domestic and foreign markets. The specifics of the development of modern of the investment and construction complex (ICC) enterprises lies in the complexity of the approach to the creation of finished construction products, consisting in the complication of production and economic relations between enterprises, the increase in the number of participants in production processes in construction, the development of mechanisms of corporate associations of individual ICC entities. As an object of strategic management within the framework of the ICC, it is reasonable to consider construction groups as a key form of corporate intra-industry interaction of enterprises of various specializations, which allows to realize to the greatest extent the possibilities of implementing flexible organizational modelling mechanisms both at the level of the construction group and within the functioning of its individual participants. The solution of the tasks of strategic management of the construction group should be implemented when the conditions for maximizing the level of strategic development are met, while ensuring a sufficient level of general stability of the construction group. The key aspect of developing an approach to the formation and development of strategic management approaches is the definition of the factor space that affects the functioning of the managed system as a whole and, as a consequence, the level of its organizational and economic stability. The results of the study allowed the author to form the structure of the general stability of the construction group with an indication of the relationship of individual elements of stability and key factors-indicators of stability at each level of management of the company. The presented structural model of the general stability of the construction group contributes to the development of methodological tools in the implementation of a systematic approach to the strategic management of construction groups and enterprises operating in their composition.

Keywords: *construction enterprises, construction groups, sustainability, factor space, management structures, corporate management*

The development of construction complexes in modern economic conditions is conditioned by the significant influence of negative environmental factors due to geopolitical and macroeconomic crisis phenomena. There is a need to increase the adaptability of construction enterprises and their associations in order to increase stability and competitiveness in domestic and foreign markets [1].

The specifics of the development of modern ICC enterprises lies in the complexity of the approach to the creation of finished construction products, consisting in the complication of production and economic relations between enterprises, the increase in the number of participants in production processes in construction, the development of mechanisms of corporate associations of individual ICC entities [2].

As an object of strategic management within the framework of the ICC, it is advisable to consider construction groups as a key form of corporate intra-industry interaction of enterprises of various specializations, which allows to realize to the greatest extent the possibilities of introducing flexible organizational modelling mechanisms both at the level of the construction group and within the framework of the functioning of its individual participants [3].

A construction group is the most common form of corporate association of ICC entities. A construction group may include contractors, design organizations, engineering and consulting companies, as well as companies specializing in the procurement and supply of construction materials and equipment and other functions [4, 5]. The group may include companies specializing in certain stages of construction, for example, design, construction, procurement, project management, etc. At the same time, the key element of the organizational structure of the construction group, as a rule, is the management link – organizations that perform the roles of customers-developers and management functions in relation to the entire system of the construction group¹ [6].

The formation of construction groups can occur on various grounds:

- specialization by type of work. A group can be formed from companies specializing in certain types of work, for example, design, construction, installation, supply, etc. This allows to ensure a high level of specialization of each participating company;
- geographical localization. A group can be formed from companies located in the same

¹ Artamonova I., Hrustalev B., Grabovy P. The main variants of regional construction complex development on the basis of increasing enterprise flexibility. *IOP Conference Series: Materials Science and Engineering*. 2019. URL: <https://iopscience.iop.org/article/10.1088/1757-899X/471/10/102002> (accessed: 07.16.2023).

region or nearby area. This facilitates interaction between group members and allows to quickly respond to changes in the external environment;

- technological solutions. A group can be formed from enterprises using the same technologies and methods of construction. This allows to reduce the cost of training and training of personnel and increase work efficiency;
- financial decisions. A group can be formed on the basis of financial mechanisms, for example, by creating special funds to finance construction;
- partnership. A group can be formed on the basis of an established partnership between enterprises that have successful experience in joint implementation of investment and construction projects. This allows to achieve deeper interaction and a high level of trust between the group members.

At the same time, the solution of the tasks of strategic management of the construction group should be implemented under the conditions of maximizing the level of strategic development while ensuring a sufficient level of general stability of the construction group [7].

Organizational and economic stability of construction enterprises refers to their ability to function successfully and overcome the negative effects of external and internal factors that may affect their activities and financial situation. This sustainability depends on many factors, including financial condition, management, marketing, strategic planning, personnel policy and other aspects [8].

Important aspects of organizational and economic sustainability of construction enterprises are:

- financial stability: this is the relationship between equity and debt capital, the ability of a construction company to service its obligations and maintain a stable financial position in the long term;
- risk management: construction companies should actively analyze and manage risks related to market conditions, legislation, technical difficulties and other uncertainties in order to minimize potential losses;
- risk diversification: focusing on one type of construction project or market can increase the level of risk. For sustainability, we should strive to diversify orders, customers and markets;
- effective project management: high-quality planning, cost estimation and effective project management help to avoid cost overruns, deadlines and problems with the quality of work;
- qualified personnel: the presence of highly qualified

employees contributes to more efficient operation of the enterprise, improves the quality of construction and reduces the risk of errors.

The key aspect of developing an approach to the formation and development of strategic management approaches is the definition of the factor space that affects the functioning of the managed system as a whole and, as a consequence, the level of its organizational and economic stability [9].

Factor space in general is an area within which a set of factors that determine the state of a system or object is formed.

Due to the assessment of the factor space, it is possible to maximize the efficiency of decision-making, as well as to predict possible scenarios for the functioning of the object under the influence of these factors.

In the process of constructing the factor space, it is advisable to identify the factors of the external environment and the factors of the internal environment that have the most significant impact on the processes under study. It should be clarified that in the conditions prevailing in the construction sector, it is impossible to clearly divide the factors into external and internal, because the internal factors of some elements of the control object will act as external to other elements and vice versa. As a result, a closed chain of the relationship of factors is created.

The influence of environmental factors may have the following effects:

- significant, significantly changing the object of influence;
- insignificant, slightly changing the object of influence;
- weak, practically not affecting the object of influence.

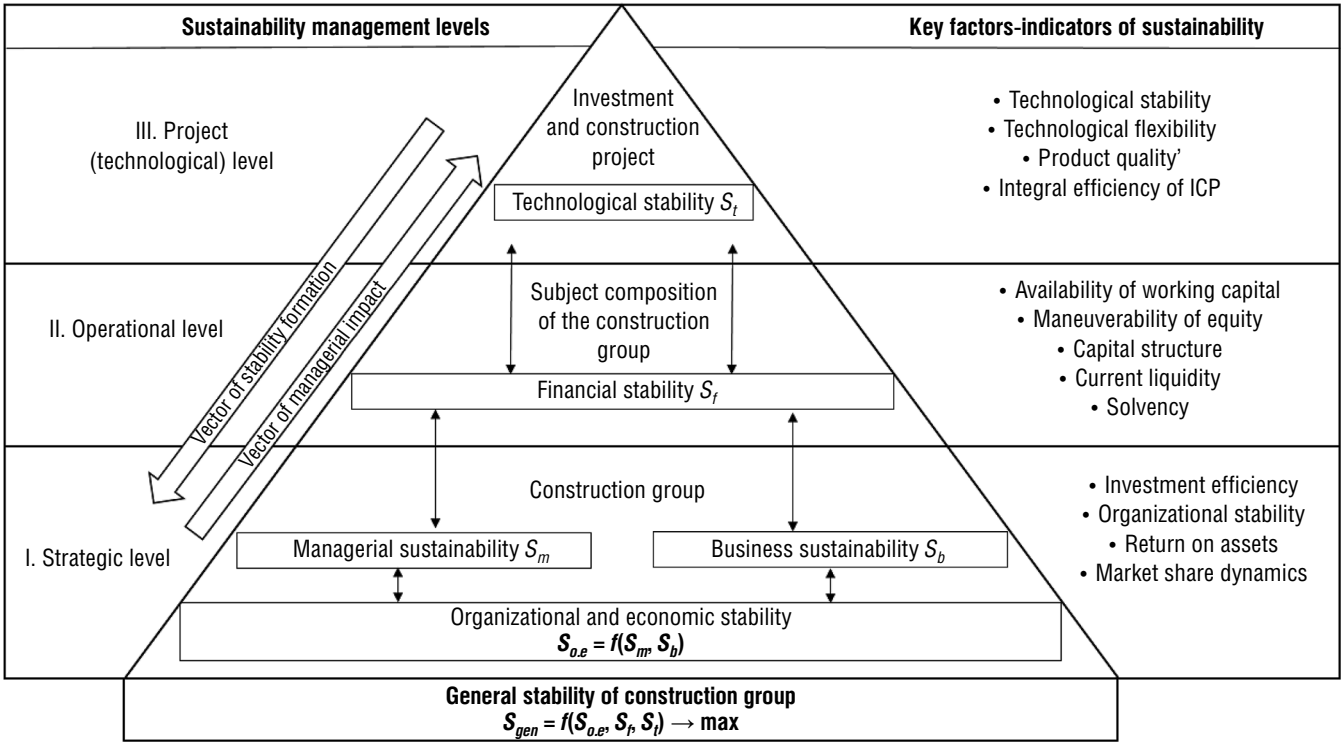
Nevertheless, factors that have a weak impact can form chains of consequences that indirectly have a significant impact on the object under study. In this regard, when studying the factor space, the entire chain of interaction should be taken into account [10].

Table presents the main groups of factors influencing the strategic management and organizational and economic stability of construction enterprises and their corporate associations.

The factor space affecting organizational and economic stability, taking into account the industry aspect, is characterized by the peculiarities of the components of the production process in the implementation of investment and construction projects by ICC enterprises. These production processes affect the efficiency of the enterprises of the construction complex at various stages of the life cycle of the production of a construction object and should be associated with it [11].

Groups of factors affecting strategic management and organizational and economic stability of construction enterprises and their corporate associations

Groups of factors	Characteristic
Microenvironment factors (enterprise and association level)	Structure, size of the construction company's business, its financial indicators, availability of liquid assets and current liabilities, efficiency of organization and management, production potential, logistics, geography of business supplies, innovation potential
Meso-environment factors (regional or industry level)	Trends in the development of the industry in which the company operates, prospects for market expansion, including at the national and regional levels. Interaction with suppliers, contractors and partners. Social capital of the region
Macro-environment factors (federal level)	Investment and innovation potential of the region. Financial and economic policy in the construction sector. Current legislation. The political situation in the country. Fiscal and economic policy of the state



Hierarchical structure of the general stability of the construction group

In addition, for the construction of the factor space, as well as its evaluation, one should proceed from the prerequisites listed below:

- depending on certain limitations and factors of the external environment and the internal environment, certain organizational and economic situations arise, in one of which the enterprise may be located;
- a set of factors influencing the activities of a construction company should be formed for both the external and internal environment;
- when constructing a set of factors, it is necessary to consider various options for such a construction and take into account the interests and needs of participants in the construction industry as a whole [12].

The results of the study allowed the author to form the structure of the general stability of the construction group, which includes 3 main hierarchical levels of sustainability management:

- 1) strategic level;
- 2) operational level;
- 3) project (technological) level.

The hierarchical structure of the general sustainability of the construction group with an indication of the relationship of individual elements of sustainability and key factors-indicators of sustainability at each management level is shown in Figure.

Modern theories of sustainability management of organizations, including construction companies, focus on an integrated approach to ensuring stability and sustainable development [13, 14]. These theories take into account the interrelationships between various aspects of management and strive to create more flexible and adaptive organizations that can effectively respond to changes in the external environment and internal conditions:

- adaptive management theory: the basic principle of this theory is that the organization should be able to adapt quickly to changing market conditions and requirements. This is

achieved by creating flexible structures, training staff for rapid adaptation and constant monitoring of external and internal changes;

- theory of sustainable development: this theory implies that organizations should strive to meet their needs and goals without compromising the ability of future generations to meet their needs. It includes economic, social and environmental sustainability;
- resilience theory: resilience means the ability of an organization not only to cope with crises and stressful situations, but also to revive and strengthen as a result of these challenges. The main elements include the ability to recover quickly after a crisis, learning from experience and the ability to identify and use new opportunities.

The presented structural model of the general stability of the construction group corresponds to the most relevant methodological approaches to the strategic management of economic systems and contributes to the development of methodological tools in the implementation of a systematic approach to the strategic management of construction groups and enterprises operating in their composition.

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Устойчивость предприятий в корпоративной структуре строительной группы: содержание и определяющие факторы

Развитие строительных комплексов в современных экономических условиях обусловлено существенным влиянием негативных факторов внешней среды вследствие геополитических и макроэкономических кризисных явлений. Возникает необходимость в развитии подходов к стратегическому управлению строительными предприятиями и их объединениями с целью повышения устойчивости и конкурентоспособности на внутренних и внешних рынках. Специфика развития современных предприятий инвестиционно-строительного комплекса (ИСК) заключается в комплексности подхода к созданию готовой строительной продукции, заключающегося в усложнении производственно-хозяйственных связей между предприятиями, увеличении числа участников производственных процессов в строительстве, развитии механизмов корпоративных объединений отдельных субъектов ИСК. В качестве объекта стратегического управления в рамках ИСК целесообразно рассматривать строительные группы как ключевую форму корпоративного внутриотраслевого взаимодействия предприятий различной специализации, позволяющую в наибольшей степени реализовать возможности внедрения механизмов гибкого организационного моделирования как на уровне строительной группы, так и в рамках функционирования отдельных ее участников. Решение задач стратегического управления строительной группой должно реализовываться при выполнении условий максимизации уровня стратегического развития при обеспечении достаточного уровня генеральной устойчивости строительной группы. Ключевым аспектом разработки подхода к формированию и развитию подходов стратегического управления является определение факторного пространства, оказывающего влияние на процессы функционирования управляемой системы в целом и, как следствие, на уровень ее организационно-экономической устойчивости. Результаты проведенного исследования позволили автору сформировать структуру генеральной устойчивости строительной группы с указанием взаимосвязи отдельных элементов устойчивости и ключевых факторов-индикаторов устойчивости на каждом уровне управления. Представленная структурная модель генеральной устойчивости строительной группы способствует развитию методического инструментария при реализации системного подхода к стра-

тегическому управлению строительными группами и предприятиями, функционирующими в их составе.

Ключевые слова: строительные предприятия, строительные группы, устойчивость, факторное пространство, структуры управления, корпоративное управление

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For citation: Zhelikhovsky D.O. Sustainability of enterprises in the corporate structure of the construction group: content and determining factors. *Real Estate: Economics, Management*. 2023; 3:42–46.

Для цитирования: Желиховский Д.О. Sustainability of enterprises in the corporate structure of the construction group: content and determining factors // Недвижимость: экономика, управление. 2023. № 3. С. 42–46.



Л.И. Павлова. Рязань. Кремль. Офор