# ESPACIOS

# Approaches to parametric modeling of the socio-economic institution of the efficient self-organization and control of small business in the system of financial security

## Enfoques de modelización paramétrica de la institución socioeconómica de la auto-organización eficiente y control de la pequeña empresa en el sistema de seguridad financiera

Anna Vladimirovna SHOKHNEKH 1; Galina Ivanovna SIDUNOVA 2; Olga Sergeevna GLINSKAYA 3; Natalia Vasilievna ORLOVA 4; Evgeniy Sergeevich VASILYEV 5

## Content

**ABSTRACT:**

The level of development of small business in the national economy determines the percentage of the middle class of the civil society, which is a guarantor of political and financial stability, as well as an effective growth of the gross domestic product of developed countries. However, the number of small business entities in Russia falls, giving way to medium and large companies, which are not always able to provide jobs and fill the vacated market segment. The article defines the role of finding the best approach to parametric modeling of the socio-economic institution of the efficient self-organization and control of small business in the system of financial security; defines the purpose,

**RESUMEN:**

El nivel de desarrollo de la pequeña empresa en la economía nacional determina el porcentaje de la clase media de la sociedad civil, que es un garante de la estabilidad política y financiera, así como un crecimiento efectivo del producto interno bruto de los países desarrollados. Sin embargo, el número de pequeñas empresas en Rusia cae, dando paso a las medianas y grandes empresas, que no siempre son capaces de proporcionar puestos de trabajo y llenar el segmento de mercado desocupado. El artículo define el papel de encontrar el mejor enfoque para el modelado paramétrico de la institución socioeconómica de la auto-organización eficiente y el control de las pequeñas

objectives, areas of work; provides the master plan of works on the proposed development; gives the hypothesis of the results of scientific and practical novelty and significance.

**Key words**: approaches to parametric modeling; socio-economic institution; efficient self-organization; control; small business; system of financial security.

empresas en el sistema de seguridad financiera; Define el propósito, los objetivos y las áreas de trabajo; Proporciona el plan maestro de obras sobre el desarrollo propuesto; Da la hipótesis de los resultados de la novedad científica y práctica y la importancia.

**Palabras clave**: aproximaciones al modelado paramétrico; Institución socioeconómica; Auto-organización eficiente; controlar; pequeños negocios; Sistema de seguridad financiera.

# 1. Introduction

The low level of development of small business leads to threats in the financial security of all sectors of the economy. Lack of information, education and self-organization causes a high level of fear that prevents people from launching new small business entities and embodying the vibrant ideas that civil society sometimes needs so much (O.S. Glinskaya, O.N. Golubyatnikova, A.V. Shokhnekh, 2010).

# 2. Methods

To analyze and select the best approaches to parametric modeling of the socio-economic institution of the efficient self-organization and control of small business in the system of financial security, it is necessary to apply specific methods and approaches, namely monitoring, ranking and classification of the problems identified in the efficient development of small business, as well as mathematical and statistical analysis of these problems (Matveenko V.P., Shokhnekh A.V., 2014); parametric method of constructing a set of parameters for a hypothetical assessment of their existence (Smirnova N.A., Sizeneva L.A., Vasilyev E.S., Gushina E.G., Alimova E.A., 2016); consistent analysis and synthesis of the information obtained; application of new parametric modeling will allow to construct theoretical provisions, economic mechanisms and instruments in the process of parametric modeling of the socio-economic institution of the efficient self-organization and control of small business in the system of financial security; (Karaulova, N. M. and L. A., Sizeneva, 2014).

# 3. Results of the study

Finding the best approach to parametric modeling of the socio-economic institution of the efficient self-organization and control of small business in the system of financial security implies research in the following areas: clear allocation and prioritization of the problems defining the position of small business for further parametric modeling; construction of a set of parameters for the hypothetical assessment of their existence, including: 1) formation of theoretical foundations, modern concepts, paradigms of parametric modeling of the socio-economic institution of the efficient self-organization and control of small business in the system of the national financial security (Sidunova G.I., 2014); (Puzov E.N., Yashin S.N., 2007) 2) formation of parameters, taking into account externalities (allocation of parameters of positive and negative externalities); 3) formation of a methodology of parametric modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security; 4) formation of the system of monitoring the processes of parametric modeling; 5) formation of alternative methods for calculating the economic impact on the regional and federal levels from the application of a new model of socio-economic institution of the efficient self-organization of small business (O.N. Golubyatnikova, A.N. Ustinova, O.S. Glinskaya, A.V. Shokhnekh, 2010); 6) construction of a "feedback controlling card" to improve the modeling process; 7) identification of the reference models of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security by the cellular automation method.

The purpose of selecting the best approaches to parametric modeling of the socio-economic institution of the efficient self-organization and control of small business in the system of

financial security is to build the theoretical foundations, modern concepts, methodologies, techniques, mechanisms of balancing the practical implementation of the concepts of the efficient organization and effectiveness in the real time mode of the socio-economic institution and the self-organization of small business in the system of the national financial security, including the reduction of unemployment.

The objectives of selecting the best approaches to parametric modeling of the socio-economic institution of the efficient self-organization and control of small business in the system of financial security include: 1) formation of theoretical foundations, modern concepts, paradigms of parametric modeling of the socio-economic institution of the efficient self-organization and control of small business in the system of the national financial security; 2) formation of parameters, taking into account externalities (allocation of parameters of positive and negative externalities); 3) formation of a methodology of parametric modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security; 4) formation of the system of monitoring the processes of parametric modeling; 5) formation of alternative methods for calculating the economic impact on the regional and federal levels from the application of a new model of socio-economic institution of the efficient self-organization of small business; 6) construction of a "feedback controlling card" to improve the modeling process; 7) identification of the reference models of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security as a complex dynamic system at the micro level by the cellular automation method.

The results and their novelty lie in the synthesis of a new socio-economic institution of the efficient self-organization of small businesses, where the national financial security will be a priority, and methods of monitoring and detection of the reference models of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security as a complex dynamic system at the micro level by the cellular automation method will be applied.

The search for the best approaches to parametric modeling of the socio-economic institution of the efficient self-organization and control of small business in the system of financial security should be carried out on the basis of the developed master plan of works. The master plan of the development of specific theoretical assumptions, methodologies, techniques, economic mechanisms and instruments, the set of parameters in the process of parametric modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security, including the reduction of unemployment, includes:

1) formation of theoretical foundations, modern concepts, paradigms of parametric modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security, including:

- new definitions, key elements, terms, classifications of the parameters of parametric modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security;

- ranking of relevance of the development of new definitions, key elements, terms, classifications of the efficient self-organization of small business;

- ranking of relevance of development of the system of national financial security, including the reduction of unemployment as a strategic tool;

- classification of the parameters of the effective self-organization of small businesses;

- construction of the conceptual principles and functional bases of the parametric modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security;

- formation of the fundamental theory "Parametric modeling of the socio-economic institution of the efficient self-organization and control of small business in the system of financial security";

2) formation of the parameters taking into account the externalities for parametric modeling, namely:

- allocation of the parameters of negative externalities for parametric modeling, i.e. externalities that reduce the well-being of third parties from the lack of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security, including the reduction of unemployment;

- allocation of the parameters of positive externalities for parametric modeling, i.e. external effects that increase the well-being of third parties from the performance of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security, including the reduction of unemployment;

- construction of the parameters of temporal externalities (temporal, historical) in order to sustainably increase income and well-being of the modern population, without reducing the resource potential in the system of the national financial security for future generations;

- construction of the parameters of intersectoral externalities, where the area of reproduction suffers from significant damage caused by the lack of the socio-economic institution of the efficient self-organization of small business;

- construction of the parameters of local externalities within the scope of the study (small business entities, population, region, state, labor resources, area of reproduction, financial security, etc.);

3) formation of the methodology of parametric modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security, including:

- formation of a set of parameters for ranking by the level of significance of the possibilities to build parametric modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security;

- search for the best systems of the efficient self-organization of small business in the system of the national financial security;

- formation of a mechanism of collection, synthesis and analysis of the information system in the process of parametric modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security;

- formation of alternative methods of parametric modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security;

- construction of a mechanism of practical adaptation of the model of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security;

4) formation of the system of monitoring the processes of parametric modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security to control the efficiency and performance, including:

- monitoring of ranking the relevance of the development of new definitions, key elements, terms, classifications of the efficient self-organization of small business;

- monitoring of classification of risks of the area of application of the balance-parametric modeling;

- monitoring of the relevance of the development of the system of the national financial security, including the reduction of unemployment as a strategic tool;

- monitoring of priorities of the principles and the functional basis of a balance-parametric modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security;

- monitoring of the classification of the parameters of the efficient self-organization of small

business;

- monitoring of the parameters that take into account the cross-sectoral externalities for parametric modeling

- monitoring of the elements of the fundamental theory "Parametric modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security";

5) formation of alternative methods for calculating the economic impact on the regional and federal levels from the application of a new model of the socio-economic institution of the efficient self-organization of small business, including the reduction of unemployment;

6) construction of a "feedback controlling card" to improve the process of modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security, including the reduction of unemployment;

7) identification of the reference models of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security as a complex dynamic system at the micro level by the cellular automation method.

# 4. Discussion of results

It must be noted that the following achievements and results should contribute to the development of this field of science and practice: optimal parametric modeling of theoretical foundations, modern concepts, methodologies, techniques, mechanisms of balancing the practical implementation of the concepts of the efficient organization and effectiveness in the real time mode of the socio-economic institution and the self-organization of small business in the system of the national financial security, including the reduction of unemployment. The basic scientific principles for the development of this field of science are: 1) formation of theoretical foundations, modern concepts, paradigms of parametric modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security; 2) formation of parameters, taking into account the externalities (allocation of parameters of positive and negative externalities); 3) formation of a methodology of parametric modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security; 4) formation of the system of monitoring the processes of parametric modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security to control the efficiency and performance; 5) formation of alternative methods for calculating the economic impact on the regional and federal levels from the application of a new model of socio-economic institution of the efficient self-organization of small business; 6) construction of a "feedback controlling card" to improve the modeling process; 7) identification of the reference models of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security as a complex dynamic system at the micro level by the cellular automation method.

The current state of research in this field of science shows that the policy of the developed countries pays significant attention to economic development of small business, which forms the main revenue growth and a high level of well-being of the population and, consequently, the national economy of any state (Manyaeva V.A., 2011). The level of development of small business in the national economy determines the percentage of the middle class of the civil society, which is a guarantor of political and financial stability, as well as an effective growth of the gross domestic product of developed countries. The number of small business entities in Russia falls, giving way to medium and large companies, which are not always able to provide jobs and fill the vacated market segments that used to satisfy consumers with bankrupt small businesses.

# 5. Conclusion

The fundamental problem to be solved for the development of small business is a significant increase in the level of education and self-organization. The system of education and self-organization of small business allows to reduce the high level of fear of the risk of conducting the facts of economic life (Sidunova G.I., Sidunov A.A., 2015). Lack of information, education and self-organization causes a high level of fear that prevents people from launching new small business entities that would embody the vibrant ideas that civil society needs.

 Russia has one of the lowest levels of development of small business, as well as one of the highest levels of ecological misbalance, resulting in threats to the financial security of all economic sectors (Khasbulatov R.I., 2012). Many researchers have raised and continue to raise issues of the effectiveness and economic growth of small business. However, building a completely new approach is still relevant, namely the parametric modeling of the socio-economic institution of the efficient self-organization of small business in the system of the national financial security to highlight the problems of low level of small business development, implementation of the mathematical and statistical analysis of the identified problems, construction of the set of indicators with a view to a hypothetical assessment of their existence, the sequential analysis and synthesis of the information received.

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1. Federal State Educational Institution Of Higher Education Budget "Volgograd State Social-Pedagogical University", Russia, 400066, Volgograd, V. I. Lenin, 27. Email: shokhnekh@rambler.ru

2. Federal State Educational Institution Of Higher Education Budget "Volgograd State Social-Pedagogical University", Russia, 400066, Volgograd, V. I. Lenin, 27.

3. Volgograd Cooperative Institute (branch) of the Russian University of Cooperation, Russia, 400002, the city of Volgograd, Novosibirsk street, d. 76.

4. Volgograd branch of the Moscow University of Finances and Law MFUA, Russian Federation, 400031, Volgograd, Bakhturova str., 25G

5. Volgograd State Agricultural University, Russian Federation, 400002, Volgograd, Universitetskiy pr., 26

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