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METHODOLOGY FOR IDENTIFYING ENVIRONMENTAL SUBJECT INTERACTION FACTORS

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Abstract

The article reveals the problems of building relationships between the authorities, business and society in the context of the redistribution of areas of responsibility for socio-economic development. Currently, the mechanism of interaction between the authorities and business meets the following objectives: the transfer of part of the state's authority to the business when solving socially significant problems; transformation of the long-term function of the business - from maximizing profits to stable functioning and development; identification of the impact of both authorities on business and business on authorities; inclusion of the society as a full-fledged participant in social communication and interaction processes. The author has proposed a methodology that can be used to assess the effectiveness of the interaction of enterprises, organizations and institutions of various organizational and legal forms, regardless of the profile and scale of their activity, ownership form and territory of presence, and is also unified for various administrative and territorial levels. The author's methodology centers round a hypothesis based on the use of expert assessment methods, when the conclusions are verified by implementing the DIPCA approach (development of indexes for pairwise comparison of alternatives). The author identified environmental factors in the functioning of entities (by segments), including those that have a priority and a direct impact on the formation of effective interaction. It is proved that the role of the civil society in solving socio-economic problems is being transformed, which allowed the author to conclude that the interests of the authorities, business and society are gradually coordinated.

1. Introduction

The socialization of the economy is based on the processes accompanied by the complication and change of the functions of state regulation, the redistribution of areas of responsibility for socio-economic development between the state and business. Today, the state, whose initiating role in relations with business is not questioned, is more and more interested in attracting funds and managerial experience of the business structures to solve strategically important tasks. The business that implemented once-only and low-budget social projects in order to maintain the image of a socially responsible economic entity, today understands the need to integrate with the state into institutionally formed unions and associations, participating in the development of laws and political decisions (Gama, Bandeira-de-Mello, Spuldaro, & 2018; Kivarina, 2019; Xiao & Lam, 2019). Thus, business and the state strive to increase their capital - both the financial and the social results of their activities. Modern society, which the results of the authorities-business interaction are directed on, moves from a passive role in a wait-and-see attitude to active actions in terms of influencing contractual relations between the authorities and business: it forces participants to comply with basic rules and obligations assumed within the framework of the principles established by the society.

Strengthening the participants' interpenetration into the economic relations in each other's field of activity and the variety of its manifestation forms actualizes the task of studying the trilateral interaction mechanism between the authorities, business and the society.

2. Problem Statement

The relationship between the authorities, business and the society is considered within the framework of the concept of social responsibility. When practised nationwide, it helped to point out such difficulties as lack of demand in the social sphere, the episodic nature of communications between the subjects of interaction, the lack of reliable information about the social activities of companies (Bogomolova, Galickaya, Ivanova, Kot, & Petrenko, 2014; Zorina & Mozgovaya, 2016). In addition, the market is indifferent to social problems, and the state in the conditions of the budget deficit is unable to fully fulfil its obligations to the society. The key problem is that civil society is very poorly represented in this communication and, in most cases, instead of social partnership, there is a two-way interaction between authorities and business (Cui, Liu, Hope, & Wang, 2018; Sakao & Wasserbaur, 2018). An urgent research problem is the identification of the reasons for the alienation of the society from partnership as well as the search for instruments to institutionalize the role of the society, bringing it into the real social and economic relations.

3. Research Questions

The disclosure of the problems stated above makes it necessary to search for answers to the following questions:

- what are the main segments (elements) of the interaction environment between the authorities, business and society in the context of the redistribution of the areas of responsibility of these business entities;
- what is the mechanism and methodology for identifying factors that are top priority for a particular segment of the interaction environment;
- what are the advantages of the tripartite interaction between the authorities, business the society.

4. Purpose of the Study

The aim of the study is the search for regulatory, organizational and economic instruments for establishing the effective interaction between the authorities, business and the society in the context of strengthening the social orientation of the development of the modern economy.

5. Research Methods

The theoretical and methodological basis of the study included the classic and modern scientific works of foreign and Russian authors, which are devoted to organizational, economic and legal aspects of the market economy socialization process, which led to the penetration of economic elements of business functioning into the social sphere, resulting in the transformation of the ratio of state regulation and market self-regulation. The substantiation of the main ideas of the article was carried out by the author using the methods of logical-structural, comparative and quantitative analysis together with the methods of scientific abstraction. In order to provide the necessary argumentation and verify the conclusions of the study, the author resorted to the method of empirical testing of the hypothesis, the method of expert assessment based on decision making using the pairwise alternative comparison index.

6. Findings

The decision of the authorities and business about interaction is undoubtedly determined by the interests of these institutions to jointly support the tasks of socio-economic development, which are determined by institutional ("rules of the game" established by the state) and the local presence environment factors (internal sources and reserves of the business) (Fonfara, Ratajczak-Mrozek, & Leszczyński, 2018). However, since we are talking about building interaction aimed at solving socially significant problems, it is inevitable that the third participant in this interaction, namely the society and its social environment, will be included as an object and result of the work of both institutional and local environment.

Based on the author's hypothesis, priority environmental factors of such trilateral interaction are proposed. Grouped on the basis of subjective affiliation, they form its certain segments: political (state), economic (business) and social (society) (Figure 01).
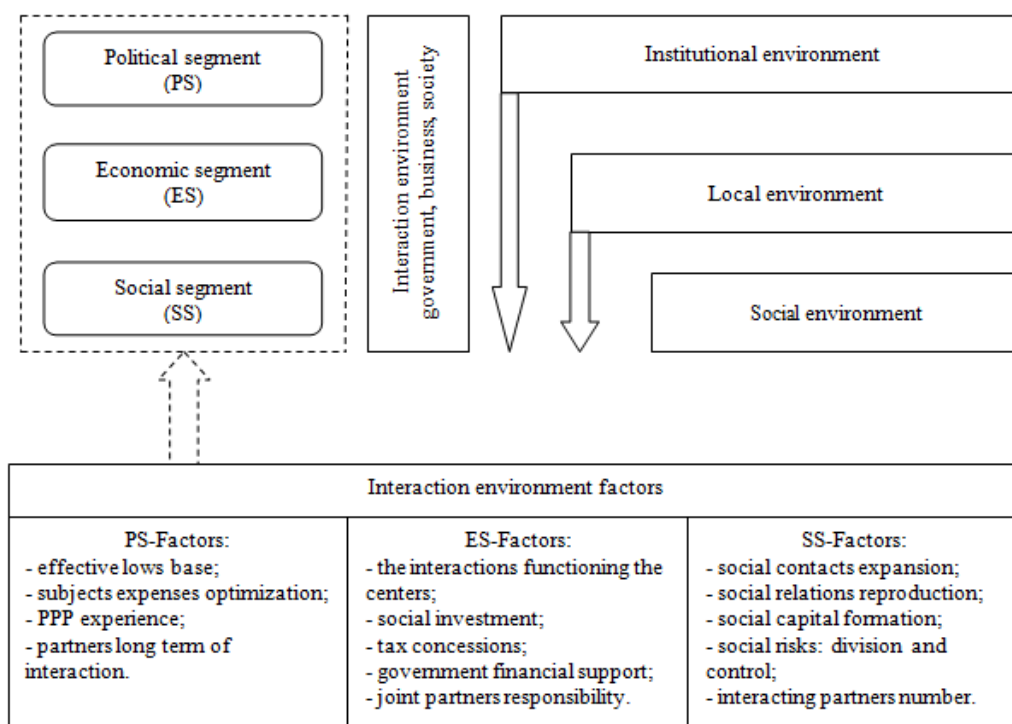
Figure 01. Authorities-business-society interaction environment

For the purpose of a more detailed study, the author applied the method of expert assessment with the subsequent verification of the hypothesis based on the development of indexes for pairwise comparison of alternatives (the DIPCA method). This method is aimed at comparing a certain group of multicriteria alternatives and can be applied to identify priority qualitative characteristics of trilateral interaction, namely, environmental interaction factors (Roy, 1991; Vincke, 1999).

The DIPCA method consists of two stages:

- building one or more indices of pairwise comparisons of alternatives based on the principles of agreement (concordance) and disagreement (discordance);
- the use of certain indices to rank the analyzed set of alternatives.

Having chosen the advanced hypothesis as a basis (Figure 01), the author highlighted certain factors (f1 – f14) that characterize a high degree of the economic entities' influence on the interaction environment. Using expert assessments obtained during the survey of the three groups of experts (each of the 14 factors was assigned a score from 0 to 10), which consisted of the representatives of the authorities, business and the society, the matrices of the expert opinions' correspondence and inconsistency were formed (taking the "authorities" expert group as an example Tables 01-03).

Table 01. Expert assessment of ratios (experts – the representatives of the authorities)

Ratios	Experts									
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
f₁	4	5	7	9	8	6	7	7	5	8
f₂	5	10	8	6	3	8	7	5	7	9

f_3	8	7	9	3	2	8	6	5	7	8
f_4	6	5	7	5	4	9	8	7	8	6
f_5	5	6	5	4	6	8	2	9	5	4
f_6	7	8	6	7	5	4	5	2	9	7
f_7 - f_{14}	…	…	…	…	…	…	…	…	…	…

Table 02. Concordance matrix (experts – the representatives of the authorities)

F_i	F_j						
	f_1	f_2	f_3	f_4	f_5	f_6	f_7-f_{14}
f_1	x	0,400	0,500	0,600	0,600	0,700	…
f_2	0,700	x	0,800	0,400	0,800	0,600	…
f_3	0,600	0,500	x	0,400	0,700	0,600	…
f_4	0,700	0,600	0,600	x	0,700	0,400	…
f_5	0,500	0,400	0,400	0,300	x	0,300	…
f_6	0,300	0,400	0,400	0,600	0,700	x	…
f_7-f_{14}	…	…	…	…	…	…	…

Table 03. Discordance matrix (experts – the representatives of the authorities)

F_i	F_j						
	f_1	f_2	f_3	f_4	f_5	f_6	f_7-f_{14}
f_1	x	0,500	0,400	0,300	0,200	0,400	…
f_2	0,500	x	0,300	0,200	0,400	0,200	…
f_3	0,600	0,300	x	0,200	0,400	0,400	…
f_4	0,400	0,500	0,200	x	0,200	0,300	…
f_5	0,500	0,500	0,400	0,600	x	0,400	…
f_6	0,500	0,400	0,400	0,500	0,700	x	…
f_7-f_{14}	…	…	…	…	…	…	…

At the next stage, the study of the set of obtained alternatives is conducted, the levels of the experts' agreement and disagreement are set which the calculated indices are compared for each pair of the obtained alternatives (by four values of the concordance coefficients (c) and discordance (d) in increments of 0.1). Thus, the dominant factors for each group of experts are distinguished from the set of alternatives of factors (taking the "authorities" expert group as an example Table 04).

Table 04. Studying the array of alternatives (experts – the representatives of the authorities)

Alternatives	$d_1 \leq 0{,}1$	$d_2 \leq 0{,}2$	$d_3 \leq 0{,}3$	$d_4 \leq 0{,}4$
$c_1 \geq 0{,}9$	f₁>f₈; f₂>f₁₄	f₁>f₈; f₂>f₁₄	f₁>f₈; f₂>f₁₄	f₁>f₈; f₂>f₁₄; f₄>f₁₄
$c_2 \geq 0{,}8$	f₁>f₈; f₂>f₁₄; f₄>f₈	f₁>f₈; f₂>f₁₄; f₃>f₁₄; f₄>f₈; f₆>f₁₄; f₁₃>f₈	f₁>f₈; f₂>f₃; f₂>f₈; f₂>f₁₄; f₃>f₈; f₃>f₁₄; f₄>f₈; f₄>f₁₀; f₆>f₁₄; f₉>f₈; f₁₃>f₈	f₁>f₇; f₁>f₈; f₁>f₁₃; f₁>f₁₄; f₂>f₃; f₂>f₅; f₂>f₈; f₂>f₁₄;f₃>f₈; f₃>f₁₄; f₄>f₈; f₄>f₁₀; f₄>f₁₄; f₅>f₈; f₆>f₁₄; f₇>f₁₄; f₉>f₈; f₉>f₁₂; f₁₂>f₁₄; f₁₃>f₈
$c_3 \geq 0{,}7$	f₁>f₈; f₂>f₁₄; f₄>f₈; f₁₀>f₈	f₁>f₈; f₂>f₁₀; f₂>f₁₄; f₄>f₅; f₄>f₈; f₆>f₁₄; f₁₀>f₈; f₁₂>f₈; f₁₃>f₈	f₁>f₈; f₁>f₁₀; f₁>f₁₂; f₂>f₃; f₂>f₈; f₂>f₁₀; f₂>f₁₄; f₃>f₈; f₃>f₁₄; f₄>f₅; f₄>f₇; f₄>f₈; f₄>f₁₀; f₅>f₁₄; тf₆>f₁₄; f₇>f₆; f₉>f₈; f₁₀>f₈; f₁₁>f₈; f₁₂>f₈; f₁₃>f₈	f₁>f₆; f₁>f₇; f₁>f₈; f₁>f₁₀; f₁>f₁₂; f₁>f₁₃; f₁>f₁₄; f₂>f₃; f₂>f₅; f₂>f₇; f₂>f₈; f₂>f₁₀; f₂>f₁₄; f₃>f₅; f₃>f₈; f₃>f₁₄; f₄>f₁; f₄>f₅; f₄>f₇; f₄>f₈; f₄>f₁₀; f₄>f₁₂; f₄>f₁₄; f₅>f₈; f₅>f₁₄; f₆>f₁₄; f₇>f₆; f₇>f₁₄; f₉>f₈; f₉>f₁₂; f₉>f₁₃; f₁₀>f₈; f₁₁>f₈; f₁₁>f₁₄; f₁₂>f₅; f₁₂>f₈; f₁₂>f₁₄; f₁₃>f₅; f₁₃>f₈; f₁₃>f₁₁
$c_4 \geq 0{,}6$	f₁>f₈; f₂>f₁₄; f₄>f₈; f₁₀>f₈	f₁>f₅; f₁>f₈; f₂>f₆; f₂>f₁₀; f₂>f₁₄; f₃>f₁₄; f₄>f₃; f₄>f₅; f₄>f₈; f₆>f₁₄; f₁₀>f₈; f₁₁>f₁₀; f₁₂>f₈; f₁₃>f₈	f₁>f₄; f₁>f₅; f₁>f₈; f₁>f₉; f₁>f₁₀; f₁>f₁₂; f₂>f₃; f₂>f₆; f₂>f₈; f₂>f₁₀; f₂>f₁₁; f₂>f₁₃; f₂>f₁₄; f₃>f₈;f₃>f₁₀; f₃>f₁₄;f₄>f₃; f₄>f₅; f₄>f₇; f₄>f₈; f₄>f₁₀; f₄>f₁₁; f₅>f₁₄; f₆>f₁₄; f₇>f₆; f₉>f₈; f₁₀>f₈; f₁₁>f₈; f₁₁>f₁₀; f₁₂>f₈; f₁₃>f₈; f₁₃>f₁₀	f₁>f₄; f₁>f₅; f₁>f₆; f₁>f₇; f₁>f₈; f₁>f₉; f₁>f₁₀; f₁>f₁₂; f₁>f₁₃; f₁>f₁₄; f₂>f₃; f₂>f₅; f₂>f₆; f₂>f₇; f₂>f₈; f₂>f₁₀; f₂>f₁₁; f₂>f₁₃; f₂>f₁₄; f₃>f₅; f₃>f₆; f₃>f₈; f₃>f₁₀; f₃>f₁₄; f₄>f₁; f₄>f₃; f₄>f₅; f₄>f₇; f₄>f₈; f₄>f₁₀; f₄>f₁₁; f₄>f₁₂; f₄>f₁₃; f₄>f₁₄; f₅>f₈; f₅>f₁₄; f₆>f₁₂; f₆>f₁₄; f₇>f₆; f₇>f₁₀; f₇>f₁₃; f₇>f₁₄; f₉>f₈; f₉>f₁₂; f₉>f₁₃; f₁₀>f₈; f₁₁>f₅; f₁₁>f₈; f₁₁>f₁₀; f₁₁>f₁₄; f₁₂>f₅; f₁₂>f₈; f₁₂>f₁₀; f₁₂>f₁₁

At the stage of researching a multitude of alternatives, dominant and non-dominant values for each factor are distinguished, as a result forming the ordering of the alternatives and the core of the best ones. For each group of experts, rows are constructed showing the dominance of alternatives (Figure 02).
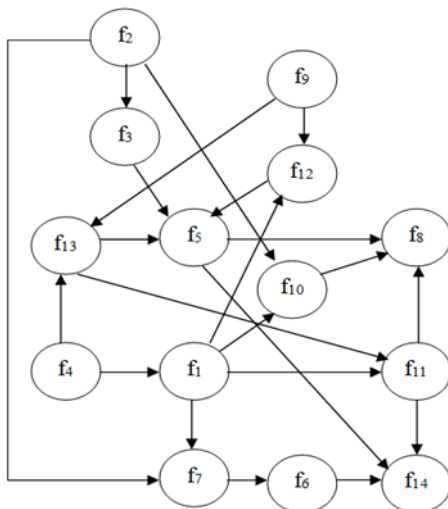

Figure 02. The dominance of alternatives in the 'authorities' expert group ($c_3 \geq 0,7$, $d_4 \leq 0,4$)

The most significant factors (dominance over five or more ratios) that ensure the construction of effective trilateral interaction from the point of view of each expert group are reflected in Figure 03.
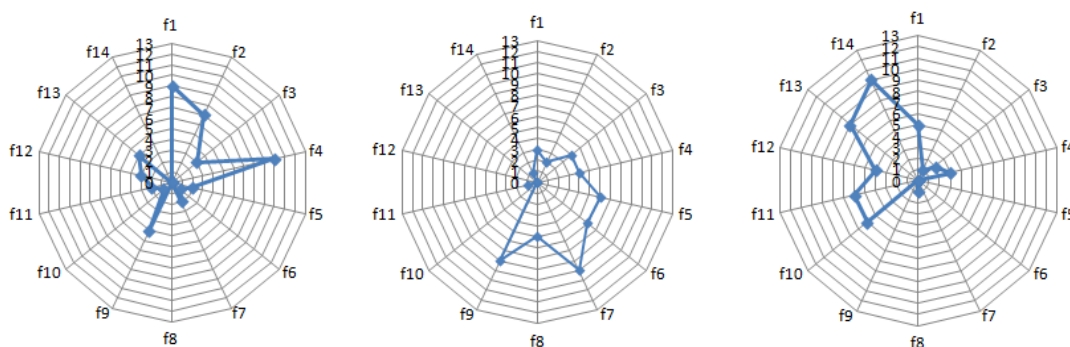

Figure 03. Priority factors for expert groups: authorities, business, society

The representatives of the authorities identified the following priority factors: f_4 – long-term interaction of the parties, f_1 – effective legislative framework, f_2 – cost optimization of the entities, f_9 – joint responsibility of the parties. Business executives set priorities as follows: f_7 – tax exemptions, f_9 – joint responsibility of the parties, f_5 – the presence of functioning interaction centers, f_6 – social investment, f_8 – state financial support. The representatives of the society, reflecting the interests of the population, pointed out the following most significant factors ensuring the effectiveness of trilateral interaction: f_{14} – the number of interacting parties, f_{13} – sharing and control of social risks, f_{10} – expansion of social contacts, f_{11} – reproduction of social relations, f_1 – effective legislative framework.

The author's hypothesis has been confirmed in the part of identifying the priority factors for the experts who are the representatives of business structures. However, the opinion of the interrogated

representatives of the authorities and the public disagrees with the position of the author which was put forward earlier.

So, the authorities find factor f_9 (joint responsibility of the parties) significant while the author regarded it as part of the economic segment of the trilateral interaction environment. At the same time having the experience of project activities (f_3) was not marked by high scores by the 'authorities' experts (3 dominants out of 13 possible). The members of the public among other priority factors noted f_1 – effective legislative framework (in the author's interpretation – a political segment, not a social one) and rated low f_{12} – formation of the social capital (4 dominants out of 13 possible).

It is of a particular scientific interest that different expert groups determined the priority of the same factors which, according to the author, initially belonged to different segments of the interaction environment. Among them are:

- f_1 effective legislative framework (authorities, society);
- f_9 joint responsibility of the parties (authorities, business).

This indicates a gradual rapprochement of the interests of the authorities, business and the society in interacting which helps to solve socially significant problems in the conditions of the market economy socialization.

7. Conclusion

The redistribution of the economic entities' areas of responsibility in the modern economy necessitated the study of factors which are, in their turn, determined by the environment of their functioning. The findings and the factors identified in the framework of this study serve as the basis for building an effective trilateral interaction, which will allow:

- business to achieve a social effect, which goes beyond the plane of traditional socially responsible behaviour and is atypical for this economic actor in other areas of activity, as well as an economic effect in the form of stability and long-term development, innovation and investment;
- the state to solve effectively the problem of accessibility and provision of the population with socially significant goods and services while developing market institutions, private property and entrepreneurial initiative in the context of the lack of budget funding;
- the society to transform its function from a "social controller" to a full-fledged interaction participant in order to improve the living standards and welfare of its members.

Thus, there is a mutual dependence and coordination of the participants' interests in the interaction not only due to the shared responsibility and risks, but also resources and income.

Acknowledgments

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