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CREATION OF RATIONAL ENTREPRENEURSHIP CONDITIONS IN CONSTRUCTION INDUSTRY OF LITHUANIA

E. Zavadskas, A. Kaklauskas, A. Banaitis, V. Jonaitis

1. Introduction

The paper aims to carry out a complex analysis of macro- and microfactors affecting the efficiency of construction industry (CI) in Lithuania, to foresee CI development tendencies and to give recommendations on the increase of its competitive ability. This is performed by studying the expertise of EU countries and by adapting it for Lithuania, taking into consideration specific history, development level, needs and traditions. Firstly, an analysis has been made of the necessity to harmonize laws regulating construction industry in Lithuania with corresponding documents of EU. Secondly, possibilities are being analysed to create an effective variable environment for CI and CI entrepreneurship by choosing rational macro- and microfactors. In order to achieve this purpose, it is suggested to perform an analysis of various variable macro- and microenvironment combinations currently existing in EU countries. Following the analysis, most rational combinations of macro- and microfactors will be selected for Lithuania. We suppose that, having implemented these combinations into practice, development of CI will become more effective and better conditions will be created for CI entrepreneurship.

It is supposed that Lithuania like other Central and Eastern European (CEE) countries will become member of the European Union. Hence, various standards, laws, plans and the like functioning in those countries will have to be co-ordinated (competition policy, company law and small and medium firms; social policy, employment conditions and health and safety; environmental policy; normative documents regulating construction production; normative documents regulating construction control; construction financing system; standardisation on liabilities and other matters; mutual recognition of qualifications; public procurement; structural funds and funds for research and development, etc) with corresponding documents of the European Union. Preparations for this must be made beforehand.

By modelling and forecasting future perspectives and trends of construction industry and organizations involved in it, it is possible beforehand to get ready to react to the changes of macro- and microlevel variables in Lithuania. Even if macrolevel factors influence the level of a whole country or industry, this paper considers only their effect on the efficiency of construction industry and organizations involved in it. In order to achieve this, it is necessary to formulate possible strategy alternatives at State and organization levels. The worked out versions must be assessed by means of multicriteria analysis methods and the most efficient solutions should be realized in practice.

The life-time process model of efficient construction industry and entrepreneurship suggested by this paper is based on presumption that the efficiency of each construction industry and organizations involved in it under investigation depends on many micro- and macrolevel variables. Therefore, basing oneself on main development trends of construction industry and entrepreneurship in West European countries, it is possible to issue recommendations on the increase of efficiency of construction industry and organizations involved in it in Lithuania. Having realized in practice rational variable micro- and macrolevel factors for Lithuania, they should create better and more favourable conditions for efficient realization of construction industry projects.

The organizations of construction industry cannot correct or alter the micro- and macrolevel variables, but they can go into the essence of their effect and take them into consideration when realizing various projects. Organizations, knowing the micro- and macrolevel factors affecting the projects being realized, can organize their present and future activities more successfully.

2. Harmonization of laws regulating construction industry in Lithuania with the laws of EU

Documents regulating the activities of construction industry and entrepreneurship in each state are intended for assuring high quality level of construction end products. Competitive ability of various organizations in different countries largely depends on efficiency level of these documents. In course of investigation of documents regulating the activities of construction industry and organizations involved in it in West European states, various interested parties of CEE countries should get the experience. At the same time they could draw closer to the documents regulating the activities of construction industry and entrepreneurship in the countries of Western Europe. This would facilitate the steps of CEE countries towards the European Union.

In order to achieve harmony of laws regulating construction industry in CEE countries with corresponding documents of EU, it is necessary to perform [1]:

- harmonization of normative documents regulating construction products;
- harmonization of normative documents regulating construction control;
- harmonization of construction financing system, etc.

Further follows a brief description of the main stages.

2.1. Harmonization of normative documents regulating construction products

Normative documents regulating construction products in CEE countries so far are not fully coordinated with corresponding documents of the European Union. This is one of the main obstacles impeding free trade in construction products with EU and slowing down the raise of efficiency of construction industry in CEE countries. Having accomplished this harmonization and received the EU certificate for construction products of CEE countries, it could be freely exported to EU countries. This done, legal systems of CEE and EU countries would cease to act as free trade barriers. There are six fundamental EU requirements on construction production, expressed in the form of standards, which should be met in solving the above problem [2]:

- mechanical resistance and stability,
- safety in case of fire,
- hygiene, health and the environment,
- safety in use,
- protection against noise,
- energy economy and heat retention.

Each of these requirements is given a comprehensive exposition in a series of documents. These harmonized requirements are observed throughout the European Union. None of EU countries can put forward higher demands on the approbation of construction production than those jointly accepted by EU.

2.2. Harmonization of construction control system

Having harmonized normative documents regulating construction products in CEE countries, it is also necessary to harmonize the construction control system with the documents of EU. Otherwise, serious problems (emergence of new requirements, various restrictions, etc) may arise during the construction process, when the firms of CEE countries will be undertaking construction in the countries of EU or when firms of these countries will be building in the countries of CEE. Therefore, harmonization of normative documents regulating construction products can successfully exist only together with the harmonization of construction control system [1].

2.3. Harmonization of construction financing system

The creation of common EU market for the financing of construction is based on free flow of capital and freedom of other financial services. For example, there exists freedom for the citizens of one EU country to buy real estate in another EU country and readiness to allow the citizens of other EU countries to do the same in their own country. At present, CEE countries have different national systems regulating financial services [3, 4]. So, the construction financing system of CEE countries must be harmonized with the system of EU.

2.3.1. Abolition of currency control

Restrictions on free flow of capital in EU were eliminated with the abolition of currency control. The same is expected of CEE countries.

2.3.2. Harmonization of credit institutions system

If currency control will be abolished in CEE countries, the main obstacle in the way of free flow of capital and free competition in financial service will

remain their national legal procedure intended for the control of financial institutions. Main purposes of this procedure are the following [1]:

- to protect depositors, insurance holders and clients from loss of savings due to fraud or faulty management;
- to secure macroeconomic policy in using financial leverage.

As it is, current laws of CEE countries make it hard for financial institutions of EU countries to compete with local institutions. The laws of CEE countries for time being grant certain monopolistic powers for local institutions. It has been noticed, having performed investigations in EU, that, upon full formation of financial services on domestic market, interest rates can drop considerably. So, the system of credit institutions existing in CEE countries must be harmonized with analogous system of EU.

3. Increase of competitive ability of entrepreneurship by creating an efficient variable micro- and macroenvironment

3.1. Variable micro- and macrolevel factors affecting the efficiency of construction industry and organizations involved in it

Principal purpose of all organizations is maximum satisfaction of user's needs and parallel realization of their own goals. Ability of an organization to survive and to develop itself depends upon its ability to find a user in the sphere of its own interests and to satisfy the user's requirements. The users, by means of deciding what goods and services are desirable to them for the wanted price, set the most effective direction of development for competing organizations, taking into account the results of their activity.

One of the major tasks of an organization is to carry out its activities under the most favourable micro- and macrolevel conditions. Efforts are made to ensure that the existing micro- and macrolevel environmental conditions would be in maximum conformity with the structure, goals and possibilities of the organization. If the existing micro- and macrolevel environment does not fully answer the wishes of interested parties, then they, basing themselves on their own goals and goals of other interested parties and taking into account certain values and aims prevailing in the organization, should make a compromise most acceptable for all parties.

The pursuit of impracticable goals, for instance, trying to realize projects which surpass the organization's capabilities or the environment (faulty legislation, too powerful competitors, unfavourable demand and supply ratio for offered production, and the like) is adverse, may cause undesirable consequences. In addition, the level of goal realization by an organization also has an effect on human relations within the organization itself because future plans of the personnel are often closely connected with the goals of the organization. If certain goals of an organization are doomed to failure, some goals of the personnel also remain unrealized. Such failure diminishes future prospects of the personnel and weakens its motivation. Unrealized goals of employees can harm the organization itself. Weakened motivation of employees can even reduce competitive level of the organization.

What kind of macro- and microlevel factors affect the efficiency of construction industry and entrepreneurship?

The level of efficiency and the scope of activities of entrepreneurship in the construction industry depend very much on the next variable factors of macroenvironment [5, 6]:

- regulatory and legal documents, various standards, regulations affecting the construction industry;
- government policy (regional aid policies, regulation of competition, preferential credits, concessions on taxation, governmental orders);
- systems of taxes (the incidence of taxation varies from one country to another according to its tax laws) and customs;
- credit arrangements;
- durability and rates of interest (the effective price for a building is not generally its capital cost but includes the cost of servicing the loan for its purchase);
- wage level;
- inflation;
- systems of insurance;
- labour skill level;
- social securities,
- labour laws, etc.

In order to assess the effect of the mentioned macrolevel factors on the efficiency of construction industry in full, it is necessary to express them through systems of criteria.

The second-level factors affecting the efficiency of entrepreneurship can be called as microlevel. These factors depend on macrolevel factors (all activities of construction industry are regulated by various laws, normative documents, etc). For instance, it can be noticed that if the level of taxes is sufficiently high, national firms under a heavy burden of taxes can either become bankrupt, or, in the absence of competition of international companies willing to enter the national market, reduce their efficiency. And on the contrary, if the taxes are reduced, the international companies, entering the local market, can either push the national firms out of their market share, or the national firms, having encountered such a competition, will be forced to increase their efficiency. The consequences in course of this process can be felt in various spheres (unemployment, changes of tax collecting level and the like).

The level of efficiency of entrepreneurship is affected by the following variable microlevel factors [5]:

- types of contracts,
- briefing process,
- design process,
- construction process,
- maintenance process, etc.

In order to perform an exact assessment of these factors, it is necessary to work out a system of criteria adequately describing each of them.

In this subsection we have mentioned variable micro- and macrolevel factors affecting the efficiency of construction industry and of organizations involved in it. And what practical influence these factors make on the efficiency of construction entrepreneurship? Further on, this problem is discussed on the basis of macrolevel factors.

3.2. The effect of macrofactors on one another and on the efficiency of construction industry and organizations involved in it

The efficiency of construction industry is influenced by many macrolevel factors. Further follows a brief examination of some of them: government policy, taxes, market, competition, inflation, legal and normative documents, unemployment, environment protection, wages.

The government, changing taxes as well as the structure and volume of its own expenditures (expanding of road building and town reconstruction programmes; money transference on behalf of people of certain categories, etc), affects the overall demand, inflation and other macroeconomic factors. Increase of taxes and curtailment of governmental expenditure lowers the overall demand. And vice versa. An inclination can be often observed for the combination of measures of both types - taxes and governmental expenditure. So, the efficiency of construction industry relies very much on government's fiscal policy.

The investigations of foreign economists and the practice of foreign countries show that relatively lower taxes in most cases give a country more of economic and social benefit. The economist K.Marsden has performed in mid-seventies an analysis of relationship between economic growth and taxes in twenty countries. Ten of the countries under investigation had high taxes, and the other ten - relatively low taxes. The countries of low taxes experienced rapid growth of employment, capital outlay and labour productivity not only in private, but also in public firms. Investments in low-tax countries increased on the average by 9 % and, during the same period, in high-tax countries they dropped by 0.8 %. The investigations show that an increase of corporation income taxes by 1 % causes a slow-down of investment rate by 2 %. Large extent investment in private sector is an important factor of economic growth because the acquired financial means serve for essential modernization of production and technology what usually has a positive influence on the development of economy. The economist of Dallas University J.Skali has also performed an investigation of relationship between tax rates and economic growth in 103 countries. The investigations also indicated that countries with tax rate of up to 19.3 % had an economic growth of 24 % during the investigation period, and countries with tax rate of 43.2 % had an economic growth not exceeding 0.4 %.

The co-ordination of economy subjects' activities and their direction to the satisfaction of society's needs is performed by means of market. The manufacturers produce such goods and in such quantities as prompted by the market. Two fundamental forces are acting on the market: the demand and the supply. With the increase of prices the demand for goods is dropping, and with the lowering of prices, on the contrary, it is growing. The demand for goods depends not only on prices. The demand is linked with other factors, such as quality, fashion, taste, income of population. The growth of prices for fuel and energy resources, decline of production and narrowing of goods

market as well as decrease of capital outlay have direct effect on construction industry and ruin it.

Owing to competition, redistribution of capital takes place - more of it is directed to spheres offering increased utility for consumers. Competition, in accordance with achieved efficiency, differentiates profit rate of enterprises and simultaneously forms average rate of profits.

The indetermination of inflation rates exerts strong negative effect on the efficiency of construction industry. When the pace of inflation is fast, then the orientation of those involved in the processes of transaction, crediting, saving and investment gets disturbed and the efficiency of fiscal and monetary policy measures falls down. Any long-term economic actions intended for saving, issuing of long-term credits, large-scale investments, etc become risky. In addition, people paying taxes in conditions of growing inflation and earnings, lose more of their income, and the State, on the contrary, receives additional income. Other macrolevel factors, such as government policy, taxation systems, rates of interest, unemployment level and level of wages are also connected with inflation.

The Lithuanian Service of Standardization approves only such Lithuanian standards, legal and normative documents which are in conformity with international and European analogous documents. When no suitable international or European standard exists, a Lithuanian normative document is worked out.

The growth of unemployment causes a fall of GNP and of collected taxes and results in other negative economic consequences. Not only the income of population is reduced during unemployment, but social problems get more acute and criminal situation of the country gets worse as well. Besides, there exists a direct connection between unemployment and inflation. Accelerated reduction of unemployment often causes inflation, and rapid jump of unemployment lowers the rate of inflation.

Many developed countries of the world consider environment protection and the reduction of contamination of air, ground and water as one of fundamental problems requiring utmost attention for their solution. However, the countries of CEE still lack sufficient legal basis in this matter.

The countries of CEE are experiencing a flow of labour force from industry branches to other branches offering incomparably better pay (energetics, banking). For instance, such unfounded high earnings in energetics are explained by the approach of energy prices to the world price level, etc.

4. Task formulation

The level of efficiency of construction industry and organizations involved in it in various countries depends on a number of variables at two levels: micro- and macrolevels. Even if macrolevel factors influence the level of a whole country or industry, but this paper considers only their effect on the efficiency of construction industry and entrepreneurship. First of all, the efficiency of construction industry and organizations involved in it depends on complex influence of macrolevel variable factors, such as the policy executed by the government, documents regulating the activities of construction industry, market, system of taxation, crediting possibilities and conditions, rate of interest, inflation, etc. Efficiency level and possibilities of construction industry and organizations involved in it activities vary depending on aggregate effect of these macrolevel factors.

Possibilities and efficiency level of construction industry and organizations involved in it also depend on variable microlevel factors (types of contracts, brief, designing, construction and maintenance processes, etc) which, in their turn, depend on the influence of macrolevel factors. For instance, the system of taxation set at macrolevel following fiscal policy of the government exerts direct influence on wages and salaries and on prices of materials at microlevel (project level). The standpoint of the State (various laws and decrees, working of State institutions, etc) regarding certain activities exert considerable influence on the efficiency of organizations. The relations of various interested parties (for instance, between customer and contractor) are directly governed by law. Each construction organization has a certain status set by law. This status determines the limits of organization activities and the amount of taxes paid by it.

In order to assure the efficiency of a project, it should be executed within certain bounds which are determined by micro- and macrolevel factors. The fact is that these factors are different in each country, so correspondingly vary also the bounds of possibilities for efficient realization of projects.

As it is, the level of efficiency and the scope of activities of entrepreneurship depend very much on the choice of rational variable factors of macro- and microenvironment. In other words, the presence of

specific macro- and microlevel variable factors right away imposes objective limitations for efficient activities of construction industry and organizations involved in it. The construction industry and entrepreneurship, in the presence of these objective limitations, try to perform its functions in their bounds with utmost efficiency. For instance, organizations, depending upon certain macro- and microlevel environment, would do best to look for sales markets in some fields of construction industry (designing, production of building materials, tools and mechanisms, construction of dwelling houses, thermal refurbishment of buildings, supply, etc), geographic locations (capital cities, various towns and districts of the country, rural districts, etc) and with such interested parties where the goals of all interested parties would find maximum satisfaction [7]. Advanced organizations, basing themselves on this assertion, are trying to create for themselves rational environmental and operating conditions in order to achieve the best satisfaction of customers' needs, to win better reputation and to earn more profit.

Basing oneself on the above considerations, it is possible to draw a conclusion that the purpose of this analysis is to work out a life-time process model of efficient construction industry and organizations involved in it on the base of performed search for rational variable micro- and macrolevel factors for each separate country. Upon the completion of such a model, construction industry organizations, taking into consideration existing limitations of micro- and macrolevel environment and existing possibilities, will be able to use their resources in more rational manner. In this case, the suggested model could be used for practical purposes both at the level of State and organizations.

5. Working out life-time process model of efficient construction industry and organizations involved in it

Documents regulating the activities of construction industry are intended for ensuring high quality level of construction products, for collecting taxes and the like. The efficiency of these documents in large part determines competitive ability of organizations operating both in national and international spheres.

In modelling and forecasting future perspectives and main development trends of construction industry, it is possible beforehand to get prepared for effective changes of legal base and organizations in Lithuania. It is suggested to do this by means of an analysis of experience and knowledge of West European countries and by their adaptation in Lithuania. In course of this analysis, it is necessary to work out possible versions of State (organizations) strategy in the field of construction industry, to assess them in respect of the methods of multicriteria analysis and to select the most efficient ones.

At the beginning, the determination of micro- and macrolevel factors as well as of systems and subsystems of criteria describing them is performed. Then, the existing situation of construction industry and entrepreneurship in Lithuania and West European countries is described in words and in formalized (mathematical) form. Having done this, follows the formation of a knowledge base fully describing micro- and macrolevel factors and their effect on construction industry and organizations involved in it in various countries. Then follows the determination of common regular features of micro- and macrolevel factors and development trends of construction industry and organizations involved in it in West European countries and their differences from Lithuania. Having analysed at macro- and microlevels the differences of construction industry and organizations involved in it between Lithuania and West European countries, it is possible to determine development trends of construction industry and entrepreneurship and to make forecasts for the future. In the course of this analysis a real possibility appears to work out possible combinations of macro- and microlevel factors, to investigate them and to produce recommendations for Lithuania in question.

Having performed the above - mentioned analysis, follows the working out of life-time process models for construction industry and organizations of Lithuania and the preparation of recommendations on the increase of efficiency of construction industry and organizations involved in it. The determination and realization of efficient variable micro- and macrolevel factors (normative, legal and other documents regulating the construction industry and organizations involved in it, taxation systems, etc) in Lithuania would create better conditions for the functioning of construction industry and organizations involved in it.

In order to throw more light on the subject, further follow more detailed descriptions of some of the above- mentioned stages of analysis [7]:

- Determination, using expert methods, of micro- and macrolevel factors affecting the efficiency of construction industry and organizations involved in it.
- Determination, using expert methods, of a system of criteria fully describing micro- and macrolevel factors and their effect on construction industry and entrepreneurship.
- Description in words and mathematically (in numerical form), of existing situation of construction industry and organizations involved in it in Lithuania and West European countries (ie determination, using expert methods, of criteria significance (their degree of influence) and values).
- Working out decision-making matrixes (knowledge base) fully characterizing micro- and macrolevel factors and their effect on construction industry and entrepreneurship.
- Determination of common regular features of micro- and macrolevel factors and development trends in West European countries.
- Determination of differences between micro- and macrolevel factors in West European and Lithuania.
- Determination of pluses and minuses of these differences for to-day's and future Lithuania.
- Working out possible combinations of macro- and microlevel factors in construction industry and organizations involved in it.
- Multicriteria complex analysis of possible combinations of macro- and microlevel factors in construction industry and entrepreneurship.
- Determination of efficient variable micro- and macrolevel factors in construction industry and organizations involved in it of Lithuania, basing oneself on specific conditions of Lithuania (level of economic and cultural development, traditions, mentality, etc).
- Working out life-time process models for construction industry of Lithuania.
- Preparation of recommendations for the government of Lithuania on the increase of efficiency of construction industry and entrepreneurship.

Modelling efficient activities (designing, production of building materials, tools and mechanisms, construction of dwelling houses, thermal renovation of buildings, supply, etc) of construction industry organizations of Lithuania in various locations (capital city, towns, rural districts, etc) and preparation of recommendations.

8. Conclusions

The main purpose of this investigation is multicriteria complex analysis of efficiency of European construction industry and organizations involved in it by means of identification and assessment of forces affecting it and its intrinsic capabilities. This is going to be performed by means of analysis of common regularity of micro- and macrofactors and trends of development of construction industry and organizations involved in it in the countries of Western Europe and their differences from the Lithuania. Having analysed these differences, it will be possible to determine development trends of construction industry and organizations involved in it and to make future forecasts for the Lithuania. In the course of the analysis, a real possibility arises to work out various possible combinations of micro- and macrolevel factors, to investigate them and to issue particular recommendations for Lithuania. A life-time process model of efficient construction industry and organizations involved in it has been suggested. The model takes into account the environment and existing possibilities of construction industry and organizations involved in it. It is supposed that the suggested model can be applied to each country of Central and Eastern Europe.

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RACIONALIŲ VERSLININKYSTĖS SĄLYGŲ LIETUVOS STATYBOS PRAMONĖJE KŪRIMAS

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Santrauka

Straipsnyje siekiama kompleksiškai išanalizuoti makro- ir mikrofaktorius, veikiančius Lietuvos statybos pramonės (SP) efektyvumą, numatyti SP plėtros tendencijas ir pateikti rekomendacijas jos konkurencingumui didinti. Tai atliekama analizuojant ES šalių patirtį ir ją pritaikant Lietuvai, atsižvelgiant į jos specifinę istoriją, išsivystymo lygį, poreikius ir tradicijas. Visų pirma išanalizuota būtinybė suderinti Lietuvos statybos industriją reglamentuojančius įstatymus su atitinkamais ES dokumentais (konkurencinė politika, įmonių įstatymas, socialinė politika, darbo sąlygos ir sveikata bei sauga, aplinkosaugos politika, standartai ir normos, statybos kontrolę reglamentuojantys norminiai dokumentai, statybos finansavimas, specialistų kvalifikacijos pripažinimas, valstybiniai-visuomeniniai užsakymai, struktūriniai fondai, tyrimų bei plėtros fondai ir t.t.). Antra, analizuojamos galimybės sudaryti efektyvią kintamą SP ir SP verslininkystės aplinką, parenkant racionalius makro- ir mikrofaktorius (finansinė politika, monetarinė politika, vyriausybės kišimasis į statybos rinką, organizacijų finansavimo šaltiniai, darbo našumas ir žemo darbo našumo statyboje priežastys ir t.t.). Šiam tikslui pasiekti siūloma išanalizuoti įvairius kintamus makro- ir mikroaplinkos derinius, šiuo metu esančius ES šalyse. Po analizės bus išrinkti racionaliausi makro- ir mikrofaktorių deriniai Lietuvai. Įdiegus šiuos derinius praktikoje, manome, efektyviau būtų vystoma SP ir sudaromos geresnės sąlygos SP verslininkystei plėtoti.

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