EVALUATION OF THE COMPETITIVENESS OF CONSTRUCTION COMPANY OVERHEAD COSTS

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Abstract. The enhancement of the competitiveness of a construction company is one of the most important strategic objectives in construction industry. The company's management system, work organization and employment of available assets are some of the most important factors upon which overhead costs and the bidding price of a construction company depend directly. A statistical analysis of a homogenous group of construction companies reveals the company's overhead costs value distribution function, which can be used to evaluate the competitive advantages and disadvantages of a specific construction company. A detailed overhead costs categorization and the findings of a survey conducted among contractors influenced the selection of the principal parameters of the company's activity, on which the value of overhead costs depends; they are the number of company's head office employees and the area of company's facilities. The developed competitiveness evaluation methodology enables the construction managers to adequate and scientific position the company on the market of homogenous construction companies group, to estimate its activity as well as to evaluate the competitive advantages and disadvantages of bidding prices and certain costs in public tendering of construction operations and services.

Keywords: competitiveness, overhead costs, management system, optimization strategies.

1. Introduction

The enhancement of the competitiveness of a construction company is one of the most important strategic tasks in construction industry. The challenge to win in the competitive battle has become essential in modern business, while the dynamically growing competitive environment forces the companies to pay more and more attention to the implementation of marketing practices (Jaafar *et al.* 2008) and the development and adaptation of efficient strategies for the construction company's development. This aims at preserving the company's positions in a specific part of the market and applying its competitive advantages on the regional market. The strategies for construction companies' development are basically aimed at 2 main goals, i.e. increasing their competitiveness and expanding construction market share (Juodis 2001). In marketing sources the competitiveness of a company is defined as the ability to adapt to volatile market competition conditions (Kuvykaitė 2001). Consequently, the ability of a company to operate in a competitive environment is one of the most important features of efficient management.

The development of competitiveness involves the identification of its factors and their appearance circumstances (Rutkauskas 2008). The positioning of a construction company in the market is directly dependent on 3 essential competitiveness attributes, i.e. the size of a construction company, field of its activities and its regional location. Its competitive ability can be evaluated in terms of its competitive price, quality, supplementary services and other factors. However, the essential factor of a construction company's competitiveness is bidding price, since it is the main criterion for the clients in selecting contractors (Turskis 2008; Zavadskas *et al.* 2008b, Mitkus and Trinkūnienė 2008).

Competitive advantages of construction bidding price can be obtained in two ways, i.e. by modelling direct and indirect costs. Overhead costs represent the largest part of indirect costs. The estimation of overhead costs is a key task in the calculation of construction costs of specific work packages as well as that of the entire project, since they comprise a significant part in the construction estimate. However, building contractors often fail to evaluate the actual overhead costs adequately, which lead to financial losses or even bankruptcy of the construction company.

The only way to increase the company's competitiveness under highly intense competition in construction market with declining building contractors profits and shrinking market shares is to control the costs of production and business. In an environment of free market economy the management of company's expenses constitute a starting point for success; thus it is very important for managers of construction companies not only to control, but also to forecast the expenses due to the management of competitive advantages formation process. The

issues of a construction company's competitiveness arise constantly during the preparation of construction bids and participating in public tenders. An inappropriate evaluation of overhead costs may bring about either too high or too low overhead costs, which, in turn, may undermine the competitiveness of building contractors, or may even force some construction companies out of business. A proper evaluation of overhead costs is a problem relevant to building contractors; therefore, this paper studies the issues of competitiveness of a construction company's overhead costs.

2. Overhead costs definition

A few commonly accepted definitions of overhead costs appear in scientific sources worldwide. One of them states that an overhead cost can be defined as a cost that cannot be identified with or charged to a construction project or to a unit of construction production (Coombs, Palmer 1989). Another definition describes overhead costs as those costs that are not a component of the actual construction work but are incurred by the contractor to support the work (Cilensek 1991). Generally, the building contractor's overhead costs are divided into 2 categories: project overhead costs and company's overhead costs (Peurifoy, Oberlander 2002). Project overhead costs include items that can be identified with a particular job, but are not materials, labour, or production equipment. Job overhead includes expenses that cannot be charged directly to a particular branch of work, but are required to construct the project (Dagostino, Feigenbaum 2003). Company overhead costs are also called general overhead costs. These are items that represent the cost of doing business and often are considered as fixed expenses that must be paid by the contractor (Dagostino, Feigenbaum

2003). General overhead costs (home-office expenses) are intended to include all those expenses incurred by the home office that cannot be tied directly to a given project such as home-office building rental, clerical or utilities. These costs are distributed over all company projects by some basis.

A construction company's overhead costs directly reflect its management system, organization of company's activity and use of its available assets and facilities. The structure of overhead costs, adopted in Lithuania, is shown in Fig. 1. It is quite strictly defined; therefore, it is possible to select adequate criteria and parameters which allow to analyse the construction company's competitiveness in the market in terms of its overhead costs as well as evaluate the efficiency of the company's management system.

It is obvious, that if a contractor does not know his actual overhead costs, an unsuccessful effort to cover the company's overhead costs may result in financial collapse of a construction company. The unstable construction market makes it difficult for contractors to decide on the optimum level of overhead costs that enable contractors to win public tenders and to manage large projects without financial losses (Assaf *et al.* 2001).

3. Overhead costs research review

Overhead costs of a company are an important research object for construction economics scientists and analysts. Relevant researches on overhead costs have been carried out for several decades; they investigate a lot of different problems related to the evaluation of the company's and project overhead costs, their allocation to different projects, specific jobs or other cost centres, actual overhead costs coverage and numerous other factors.
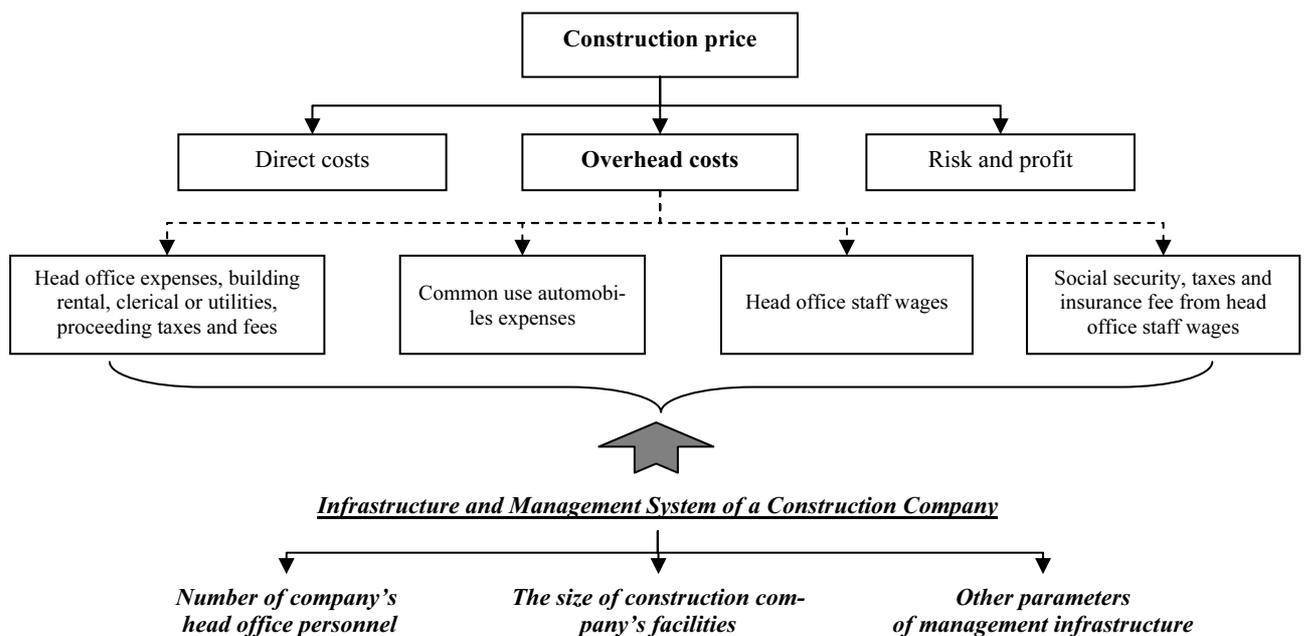

Fig. 1. The structure of a construction company's overhead costs

All research works on overhead costs evaluation can be divided into 4 main research trends:

- Construction contractor surveys, analysis of situation and statistical research on understanding the overhead costs concept as well as categorization of indirect costs, the implementation of evaluation, planning and control in practice;
- Analysis of construction delays vs. overhead costs volume;
- Analysis of the construction company's overhead costs distribution and allocation;
- Analysis of fixed expenses recovering.

Research papers in the first group reflect the overhead costs evaluation and management experience of construction contractors from various countries. Scientists carry out contractor surveys and statistical analysis of the results in order to determine whether construction contractors correctly understand the definitions of indirect and overhead costs as well as whether appropriate costs evaluation methods and costs allocation techniques are applied.

A research carried out in the USA revealed that over 60% of the construction contactors responding to survey cannot adequately determine the definition of overhead costs (Holland, Hobson 1999). Overhead costs depend on the size of a company; consequently, about 80% of the companies surveyed indicate different overhead costs categorization. Only 50% of contractors analyse and update their overhead costs' records annually, and about 70% change them for various projects in order to win public tenders. Similar tendencies are being observed in Europe, Asia (Chan, Lee 2003) and Middle East countries (Assaf *et al.* 2001).

Research in the second group involves the impact of construction project delays on the company's overhead costs refund and its operational efficiency. In such cases the construction company does not suffer financial losses directly, but the recovering of overhead costs from company's income planned by contractor is undermined (Taam, Singh 2003). In such cases the contractor personally has to refund unabsorbed overhead costs for a certain period, by which the execution of construction is delayed. Eichlay formula or its modified versions are used to identify and evaluate company's unabsorbed overhead costs.

Researches in the third group involve the analysis and evaluation of company's overhead costs distribution methods and allocation techniques. Such scientific researches are particularly essential for large companies that work in the field of construction project management and coordinate the work of numerous subcontractors (Kim, Ballard 2002). Traditionally, company's overhead costs are distributed to different projects according to resource-based costing and volume-based allocation (Kim, Ballard 2001). Resource-based costing is the method of overhead costs allocation to cost objects in which costs are assigned by each resource, and volume-based allocation is the method in which costs are allocated to work divisions in proportion to direct labour hours or direct labour costs.

Nevertheless, these traditional methods are often criticised for cost distortion and the lack of relevance as overhead costs are analysed as a whole; and when assigning them to work divisions the susceptibility for company's indirect activity is not taken into consideration. These factors are evaluated using the so-called ABC method (Activity-based costing). In this case cost distortion is prevented by adopting multiple cost drivers, i.e. actual operational and process costs are determined. A further field in this group of research is the development of new overhead costs allocation methods or the improvement of those already available, in regard to the evaluation of their advantages and disadvantages.

The fourth group of research in the field of overhead costs involves the analysis of fixed costs evaluation and recovering. This trend of research is mostly carried out in German speaking countries. For several decades these issues have received exclusive attention of the researchers (Schiffers 1979). German scientific publications discuss the situation in the construction market as unfavourable for contractors and the need for applying a market-based estimation system (Sehlhoff 2003). The need of market-oriented practices of the enterprises is also emphasized by Lithuanian researches (Ginevičius 2007; Ginevičius and Podvezko 2008). Current price determination methods widely used by German contractors are cost-oriented and are based on evaluating indirect costs according to the productivity of the company. Construction companies are advised to use the so-called contribution margin accounting, which provides the categorization of contractor's costs into variable and fixed, and is a very efficient tool for cost planning (Meinen 2005).
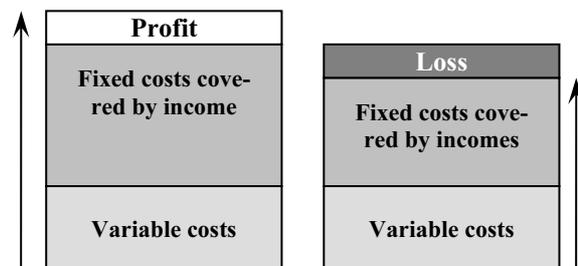

Fig. 2. Fundamental principles of contribution margin accounting

Contribution margin accounting (break-even analysis) is a cost determination system, when construction costs within a given accountable period are divided into 2 main groups: operational execution dependent (variable) costs and company reserve maintaining (fixed) costs. Fig. 2 illustrates the fundamental principles of contribution margin accounting. This method is based on establishing the margin, which is considered the difference between the revenue and variable expenses, and is meant to cover fixed costs and profit.
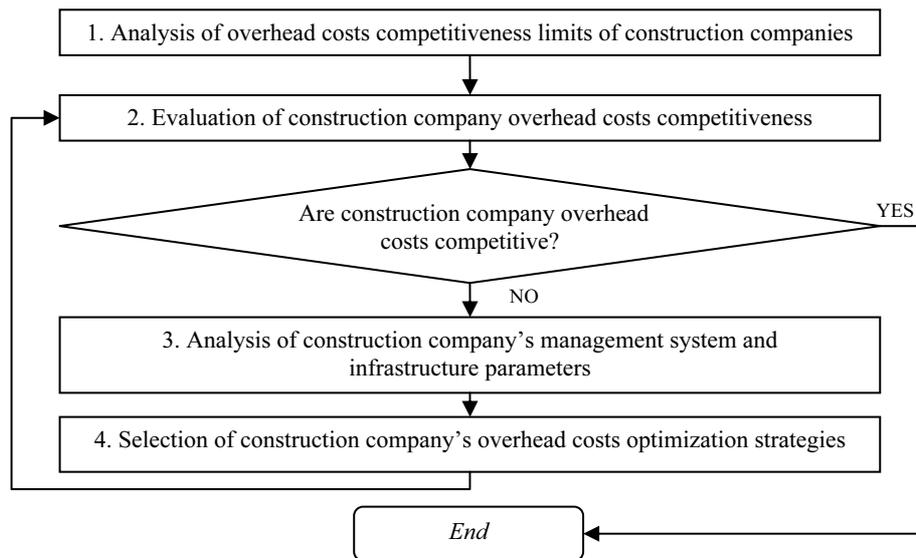
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Fig. 3. Scheme of evaluation of the competitiveness of construction company overhead costs

This paper presents a relevant modern methodology allowing to evaluate the position of a specific construction company in the existing market according to the company's overhead costs competitiveness at the stage of bidding and public tenders.

4. Methodology for evaluating the competitiveness of construction company overhead costs

The analysis of the construction company's overhead costs competitive advantages involves the following procedures: the analysis and evaluation of the overhead costs competitiveness limits on the market of existing construction companies; evaluation of a certain construction company overhead costs competitiveness on this market, analysis of construction company's management system and infrastructure items, selection of strategies for overhead costs optimization. The scheme of construction company competitiveness evaluation method is in Fig. 3.

The primary and most important task in determining a competitive amount of a construction company's overhead costs is the analysis of overhead costs of rival companies and determination of their overhead costs limits on the market.

4.1. Survey and construction overhead costs data analysis

The overhead costs competitiveness of a construction company can only be determined after researching the market of construction works and services. A questionnaire has been prepared and a survey of construction contractors was carried out. A three-year data from 30 construction companies performing general construction work packages in the central region of Lithuania's construction market was gathered. The size, structure and operational volume of these companies are analogous; therefore, the set of the companies responding to survey is considered to be homogenous.

The discussed set of companies belongs to the mid-sized company group. These companies employ from 20 to 250 employees, and their annual volume of construction operations ranges from 0.9 to 21.8 million Lt. The management staff in the examined companies ranges from 3 to 24 employees, the size of buildings facilities is from 168 to 2000 m^2, and the annual overhead costs range from 1.0 to 1.36 million Lt.

According to the Lithuanian certified recommendations for construction cost estimation, a company's overhead costs consist of head office expenses, building rental, clerical, utilities, automobiles expenses, head office staff wages and their social security taxes and fees. According to this categorization of overhead costs, they were divided into more detailed overhead costs subdivisions and included in the contractors' survey questionnaire.

Since the amount of a construction company's overhead costs reflects its management system and infrastructure, the questionnaire also contains additional questions about the volume of the construction operations executed, size of management apparatus and structure as well as size of company's realty.

The overhead costs of a construction company were divided into 3 main parts:
- Head office personnel expenses, depending on the number of head office employees;
- Expenses for the maintenance of buildings and premises, depending on the size of buildings facilities;
- Other overhead costs, depending on numerous factors.

The overhead costs of a construction company reflect its management system and infrastructure expenses; thus, the magnitude of overhead costs directly depends on the company size. Therefore, in further analysis and processing of statistical data, relative values of the calculated overhead costs, administration costs and building maintenance costs were used. These relative values are parts of costs per unit of operation volume.

4.2. Evaluation of the competitiveness of construction company overhead costs

The evaluation of a construction contractor's competitiveness is carried out according to the competitive situation on construction market. In this research mathematical statistics was applied to perform the analysis of the construction contractors' survey results. The main statistical characteristics of the relative values of a construction company's overhead costs as well as their probability distribution, which is used to compare company's overhead costs with the existing in construction market, were determined. After testing the compatibility hypothesis about the normality of distribution by means of the Kolmogorov-Smirnov and Chi squared criteria, it was estimated that the relative values of a construction company's overhead costs distribute in compliance with the normal law. This allowed the consistencies of normal distribution to be used in the process of overhead costs data analysis. In this way it became possible to evaluate competitiveness of a specific construction company's overhead costs.

The analysis of a company's overhead costs competitiveness begins with determining the relative values, i.e., the portion of overhead costs per unit of the executed construction volume. This value is compared with those of other companies operating on the market; in this way the conclusions about the company's overhead costs competitiveness are made.
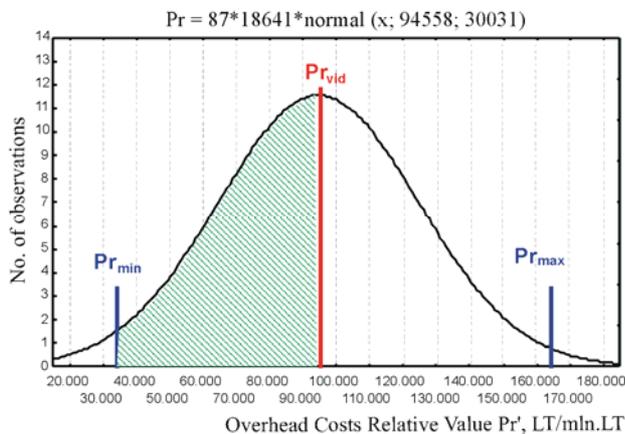

Fig. 4. Distribution of construction company overhead costs relative values

The competitiveness of a construction company can be evaluated according to the distribution, gained from data analysis (Fig. 4). If the value of a company falls within the interval between the lowest and the average overhead costs relative values of the market, it means that the overhead costs are competitive and the company operates efficiently, it has a rational structure of both – business and buildings' facilities as well as a proper management system. If the value of the company falls within the interval between the average and the highest overhead costs relative values of the market, it is not competitive in terms of overhead costs. This might mean that it has an inefficient business infrastructure or inappropriate management system. In this case it is imperative to reform the management system and/or infrastructure of the company by implementing specific reorganization, shake-up or other company's development strategies.

Research of overhead costs competitiveness alone is often not sufficient for evaluating a company's management efficiency; thus, a thorough and sectional analysis of overhead costs components is necessary. The data gathered during the survey of construction contractors allows to carry out the statistical analysis of overhead costs' elements as well as to set the competitiveness limits of the administration and building facilities' costs under the construction market conditions. The results of the construction contractor survey reveal that the amount of the third part of overhead costs is rather small compared to the administration and building facilities' costs and can be interpreted as a free member in a regression equation.

The competitive advantages and disadvantages of a construction company's administration costs in the given market are evaluated by the same methodology applied to determine the competitiveness of general overhead costs of a company. The group of administration costs includes the following:
- head office staff wages;
- social insurance taxes;
- administrative expenses (mail, communications, office, business trips, transport and other expenses).

The relative value of administrative costs is a key parameter, describing the efficiency of the business structure and management system of a construction company. Fig. 5 illustrates obtained administration costs distribution in the construction market for the evaluation of a construction company's competitiveness.
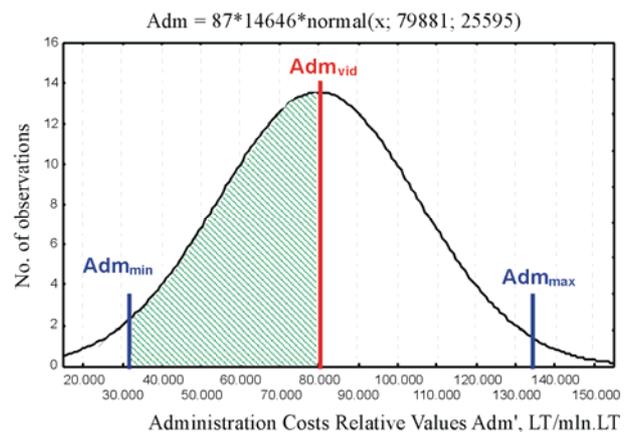

Fig. 5. Distribution of construction company administration costs relative values

If the relative value of a given construction company falls within the interval between the lowest and the average relative values of administration costs, its expenses are competitive and business structure is strategically appropriate for business under the conditions of existing market. If the relative value of a given construc-

tion company falls within the interval between the average and the highest relative values of administration costs, the company uses its resources inefficiently. In this case it is necessary to apply specific restructuring, reorganization or other development strategies.

Another important parameter for the analysis of the efficiency of a construction company's management is the size of the realty owned. The buildings facilities costs group consists of:

- costs for buildings amortization;
- exploitation and repair expenses;
- rent;
- insurance;
- lighting;
- heating;
- plumbing;
- sewage disposal;
- accommodation cleaning;
- other expenses.

The relative value of buildings facilities costs is analysed in the same way as the relative values of the general overhead costs. Fig. 6 illustrates obtained distribution of building facilities costs in regard to the evaluation of a construction company's competitiveness. Relative values below the average in the market mean, that the buildings facilities of the company are used efficiently; consequently, it has competitive advantages in the existing market. Values above the average of relative values signal the company managers that the real estate of the company is used inexpediently; moreover, both the structure and use of the company's facilities require reorganization.
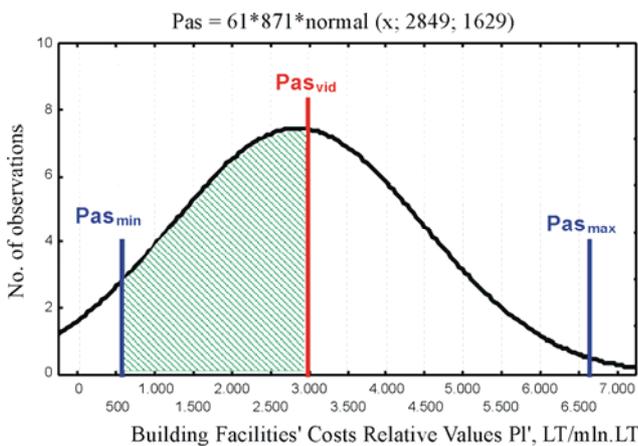

Fig. 6. Distribution of construction company building facilities' costs relative values

The evaluation of a construction company's overhead costs or their separate elements (administration and buildings facilities costs in terms of the competitiveness in the market) poses a few questions concerning the implementation of measures for increasing the competitiveness. The value of overhead costs is influenced by values of specific parameters, which can be derived from their dependency equations. Depending on which of the over-

head costs groups requires minimization, a favourable value of management system parameter for enhancing the company's competitiveness is determined and adequate company development strategies are selected. The number of head office employees influences the company's business structure and overall formation of the management system, while the facilities size influences the structure of buildings and their use. The equations of the dependence between the overhead costs and company's management system parameters are obtained by means of the correlation-regression analysis of the construction contractors' survey results.

4.3. The influence of construction company infrastructure parameters on the value of overhead costs

The influence of a construction company's infrastructure parameters on the value of overhead costs is determined by applying the multifactor correlation and regression model, while in the case of the overhead costs components, the single-factor correlation and regression analysis was applied.

The dependences between the relative value Pr of overhead costs in a construction company and the relative values of the following management parameters are investigated:

- number of administration staff Sk ;
- building facilities' area Pl ;
- size in volume units T .

The influence of these parameters on the value of the overhead costs is determined by the multifactorial correlation-regression analysis. In accordance with the structure of overhead costs adopted in Lithuania and the findings of the construction contractors' survey, the conclusion can be made, that the influence of other company's management parameters and factors are not relevant to the costs and this part of overhead costs can be assessed by a free member of a regressive equation.

It was determined statistically that the relative values of a company's overhead costs and the number of administration employees have a strong linear correlation – correlation coefficient $r = 0.599$. Furthermore, the relative value of company's overhead costs and relative values of buildings area also have a strong linear correlation $r = 0.701$, as well as one of the relative value of company's overhead costs and relative values of buildings volume $r = 0.673$. The relative values of the company buildings area and size in volume correlate too, $r = 0.950$; therefore, based on Pearson and Spearman's correlation rank coefficient, only one characteristic - the relative value of the company buildings area was chosen for further research, as shown in Fig. 7.

After the multifactorial correlation-regression analysis the following regression equation was obtained:

$$Pr = 36107 + 14958 \cdot Sk + 197 \cdot Pl . \qquad (1)$$

The multifactor regression model of overhead costs is shown in Fig. 8. According to the adequacy research of the regression model, the conclusion can be made, that the multifactorial linear regression model adequately describes the relation between the company's overhead
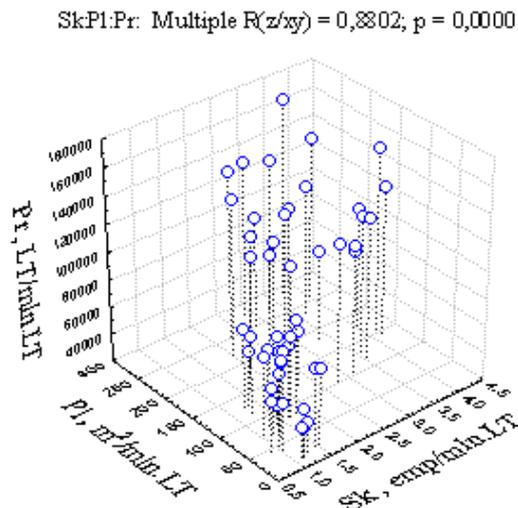
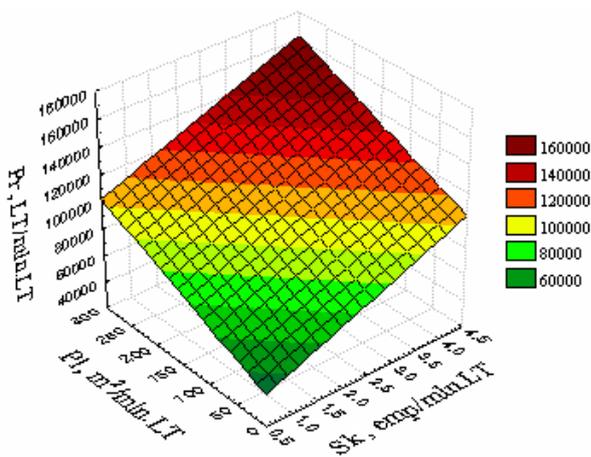**Fig. 7.** Diagram of data dispersion

Fig. 8. Multifactor linear regression model of overhead costs relative values

costs, number of administration staff and relative values of the company's owned real estate area. This model can be applied in practice to forecast the value of overhead costs depending on different efficiency values of a construction company.

Methods for minimizing the overhead costs are chosen individually for every construction company, in relevance to its actual operational conditions.

In further analysis it is not sufficient to know the relation between the general overhead costs and selected parameters, which impact the efficiency of the company's management system; therefore, their influence on specific overhead costs groups – administration costs and building facilities' expenses are analysed separately.

The influence of the company building facilities' expenses is obtained by means of the single-criteria correlation-regression analysis. The real estate value of a construction company can be described by 2 parameters – the area and the size of the real estate and premises. However, since these relative costs' values strongly

correlate, in accordance with Pearson and Spearman's correlation rank coefficients, only one characteristic was chosen for further research - the relative value of buildings and premises area *Pl*, per one million Lt of the company's construction volume.

By applying the single-factor correlation-regression analysis, the following regression equation was obtained:

$$Pas = 667.69 + 17.62 \cdot Pl . \qquad (2)$$

Fig. 9 illustrates the linear regression model of buildings' facilities costs. The adequacy research of the regression model reveals that obtained model of linear regression adequately describes the relation between the relative values of the company building facilities' costs and area. This model can be applied in practice to forecast the costs of the company-owned facilities.
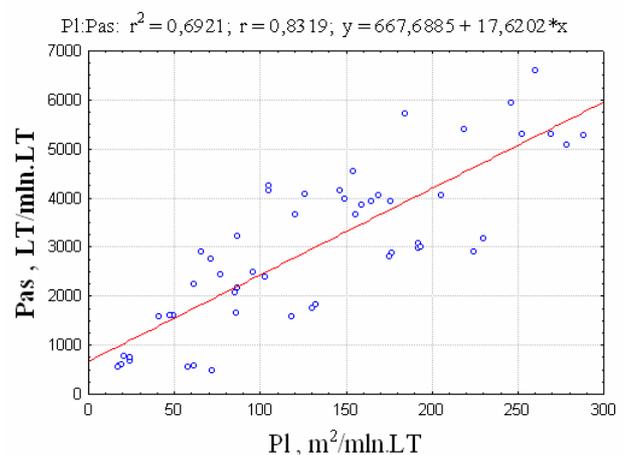

Fig. 9. Linear regression model of relative values of buildings' facilities costs

Similarly, the relation between the number of the construction company's management staff and administration costs was analysed. This required statistical processing the relative values of the analysed variables and use of the single-factor correlation-regression analysis. The determination coefficient $r^2 = 0.292$ revealed, that the obtained regression model does not describe the relation between the company's administration costs and the number of employees properly. To improve the regression model a new variable – the relative value of the general number of company's employees *DSk* was added to the model. In further analysis a multifactorial linear regression model was applied. Upon accomplishing the correlation-regression analysis, the following regression equation was obtained:

$$Adm = 30543 + 7832 \cdot Sk + 1582 \cdot DSk . \qquad (3)$$

Verification of the regressive model of administration costs has determined, that the obtained linear regression model (Fig. 10) adequately describes the existing correlation between the relative values of the number of company's administration staff, the number of all employees of a company and administration costs.
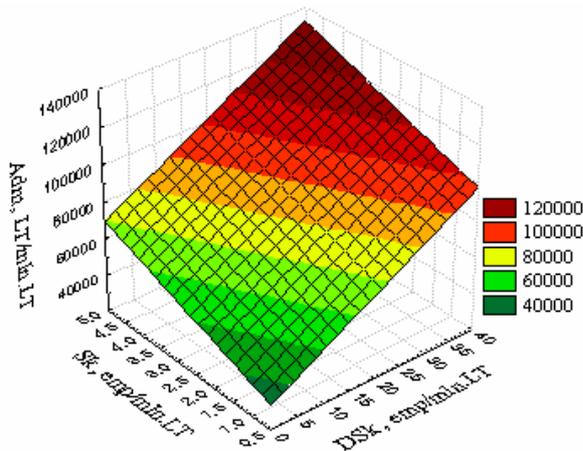
Fig. 10. Multifactor linear regression model of relative values of administration costs

This regression model is proposed for forecasting a company's administrative costs value depending on the number of administration employees.

4.4. Construction company overhead costs optimization strategies

Construction company's overhead costs optimization strategies are implemented to reduce the unreasonably high management system expenses and thus to increase the competitiveness of a company. Generally, as shown in Fig. 11, the overhead costs optimization methods are as follow: the company's real estate reorganization, shake-up of its administrative structure or even the alteration of the company's management system. All optimization methods are defined for each company individually, in accordance with their operational conditions and other important factors.

The management system of a company, its structure as well as administrative costs can be reduced through company reorganization or restructurization strategies, even though their selection and implementation is a hard task. In order to solve this task the advices of management professionals would be helpful. Usually, a new management system is created, transparent and comprehensible to all employees of the company. Firstly, the audit of administration operations is carried out and new structural possibilities of operation are assessed, such as:

- Disestablishment of some particular job positions, replacing them with outsourcing;

- Exact job assignment;
- Redistribution of employee workload flow;
- Strong subordination and accountability;
- Attraction of high qualification professionals; other strategic solutions.

In order to reduce the building facilities' costs, the reduction of owned real property is essential. For the task to be implemented, several strategies can be applied:

- Acquisition of new, smaller accommodation or rent of the accommodation owned to outsiders;
- Discarding separate technical departments and outsourcing (e.g. IT, financial accounting and other technical services);
- Sharing the infrastructure with other companies;
- Reduction of energy expenses;
- Audit and discarding of equipment and vehicles not used on a regular basis, due to reducing the auxiliary premises and other measures.

In order to increase the efficiency and competitiveness of a company in construction market, various construction company overhead costs optimization strategies can be applied separately or in complex. The nature of the considered strategies implies that their selection can be solved, for example, by the implementation of multiple criteria evaluation methods (Ginevičius *et al.* 2008a, 2008b; Peldschus 2008; Šarka *et al.* 2008; Zavadskas *et al.* 2008a).

5. Conclusions

The article presents a relevant and innovative methodology for evaluating the competitiveness of construction company overhead costs. The competitive situation of construction sector in the central region of Lithuania was analyzed with the reference to questionnaire data of the mid-sized construction companies, executing general construction works. The competitive advantages and disadvantages of a construction company's costs are evaluated according to the overhead costs relative value distribution function, obtained by statistical data processing. The identified normal distribution law for overhead costs relative value probability enables the evaluation of the competitiveness of a specific construction company overhead cost. Similar methodology was used to identify the probability distribution laws for relative values of both the company's administrative and building facilities' costs and evaluate their competitiveness.
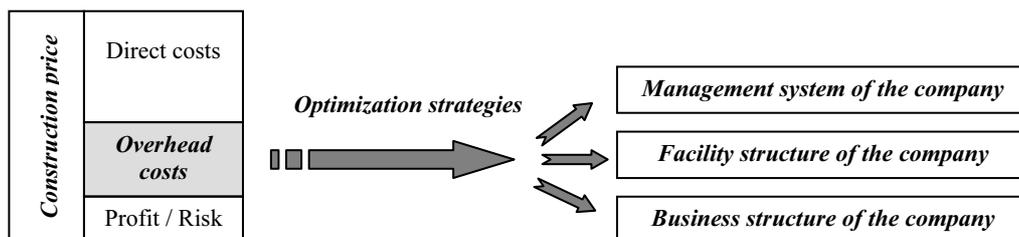

Fig. 11. Strategies for optimization of construction company overhead costs

Upon accomplishing the multifactor correlation-regression analysis of survey data, the linear regression equation of dependence between the relative values of overhead costs and the relative values of the company infrastructure elements was obtained. According to the adequacy research of the regression model, it was determined, that the multifactor linear regression model adequately describes the correlation between the relative values of the company's overhead costs, number of administration employees and building facilities' area. This can be applied in practice to forecast overhead expenses in accordance with different parameters of a construction company's management system.

By applying the correlation-regression analysis the regression equations were obtained, which describe the dependences between the relative values of construction company building facilities' costs and buildings' area, as well as those relating to the number of administration employees and administration expenses. These models are proposed to be implemented practically in order to forecast the expenses of construction company administration and facilities management.

The selection of strategies aimed to increase the company's competitiveness is determined by the overhead costs dependence on business infrastructure and management system elements of the company. Therefore, the obtained regression expressions can be applied to select the appropriate construction company overhead costs structure and to form the overhead costs optimization strategies: altering and improving company management system, building facilities and business structure.

The scientific research allowed the development of methodology which is a convenient planning and forecasting tool, enabling construction company managers to adequately and scientifically position a specific construction company in the market of homogenous construction companies group. The proposed by the author's methodology enables to evaluate construction company operational efficiency and in an unsophisticated way determine the competitive advantages and disadvantages of construction costs, bidding and public tender prices as well as to select further development strategies.

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STATYBOS ĮMONĖS PRIDĖTINIŲ IŠLAIDŲ KONKURENCINGUMO ĮVERTINIMAS

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S a n t r a u k a

Didinti statybos įmonės konkurencingumą yra vienas svarbiausių statybos verslo strateginių uždavinių. Įmonės valdymo struktūra, veiklos organizavimas, turimo turto naudojimas yra vieni iš svarbiausių veiksnių, nuo kurių tiesiogiai priklauso statybos įmonės pridėtinės išlaidos, kartu ir siūlomos statybos darbų kainos. Statistiškai tiriant homogeninę statybos įmonių grupę nustatyta statybos įmonių pridėtinių išlaidų reikšmių pasiskirstymo funkcija, pagal kurią gali būti įvertinti konkrečios statybos įmonės konkurenciniai pranašumai ar trūkumai. Išsamiai apibrėžta pridėtinių išlaidų struktūra ir statybos rangovų apklausos rezultatai darė įtaką pagrindinių įmonės veiksnių, nuo kurių priklauso pridėtinių išlaidų dydis, parinkimui – tai įmonės administracijos darbuotojų skaičius ir nekilnojamojo turto plotas. Sudarytas statybos įmonės valdymo sistemos ir infrastruktūros charakteristikų regresinis modelis yra patogus planavimo ir prognozavimo įrankis parenkant tinkamą įmonės veiklos pridėtinių išlaidų struktūrą ir pritaikant įmonės plėtrai reikalingą strategiją. Siūloma statybos įmonių konkurencingumo įvertinimo metodika leidžia statybos organizacijų vadovams adekvačiai ir moksliškai pagrįstai nustatyti įmonės padėtį homogeninės statybos įmonių grupės rinkoje, įvertinti jos veiklos efektyvumą ir nesunkiai nustatyti kainos, išlaidų konkurencinius pranašumus bei trūkumus dalyvaujant statybos darbų ir paslaugų viešuosiuose pirkimuose.

Reikšminiai žodžiai: pridėtinės išlaidos, konkurencingumas, valdymo sistema, optimizavimo strategijos.

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