

Application of CSR in Construction Industry

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Abstract: Concept of social responsibility in an enterprise has recently gained a great importance. The concept is characterized by company management and development of relations contributing to company goodwill and trustworthiness. Introduction of CSR brings benefits in economic, social and environmental aspects of company management. The influence of socially responsible international corporations worldwide forms the prerequisites for a global solution of environmental and social problems. Civil engineering presents a significant branch of national economy with a high share in energy, products and material consumption, affecting employment ratio and investments. The empiric research focused on the assessment of CSR concept implementation in selected construction companies. The article presents a part of the research results.

Key words: CSR, economic mainstay, social mainstay, environmental mainstay, construction industry

1 Introduction

CSR represents integration of positive attitudes, practices or programmes into company strategies on the level of top management. In question is the improvement of a company social level from “*profit only*” to a multicriteria aspect involving three Ps: people, planet, profit. The result is development of company activities in regard to the so-called triple-bottom-line when company management monitors, besides economic growth, the environmental and social aspects of its business. [6]

The meaning of social responsibility is in a wider point of view of the efficiency containing a certain mechanism preventing human civilization life conditions deterioration. [8]

The aim of the article is to describe significance and concept of CSR and, in relation to civil engineering and on the basis of the research, to determine which CSR activities have been developed in construction companies and to assess their degree of importance.

2 Problem Formulation

Main advantages connected with the CSR implementation in a company's point of view relate to a better capital approach and also to a better image and goodwill of the brand or to the growth of company business quality. [4] Regarding financial aspect, profit growth is in question, cost reduction and growth of

productiveness. Another aspect is reflected in the improvement of risk management, and last but not least, better ability to hire and keep high quality staff. All of this provides for a better company competitiveness. [3]

However, it is not simple to assess the benefits of voluntary CSR activities. [2] Company managements assume that the benefit is of a non-material nature, e.g. improvement of company goodwill, employees motivation, etc.

2.1 Application of CSR

Application of the CSR comprises the process of building confidence of different parties involved in a company functioning. Among company activities within social responsibility should be the ability to identify and determine the key stakeholders. [5]

Employees, suppliers, shareholders or investors – these groups are labelled as primary stakeholders. They are characterized by a great influence on everyday activities and company operations. On contrary, the secondary group consisting of the government, local communities, self-administration representatives, non-profit organizations, citizen and business associations and lobbyist groups stand outside everyday company interaction. [7]

Expectations of the stakeholders differ according to individual groups involved; however, their involvement is highly important for understanding individual interests and a follow up dialog. Based on the dialog, it is then

possible to determine the CSR activities to focus on.

2.2 Assessment of CSR

CSR may be determined and assessed using several points of view. First can be the assessment in terms of the three mainstays – economic, social and environmental.

Economic mainstay represents a company transparency, exercising of good management principles, maintaining the good behaviour code, code of ethics and formation of good relationship with the stakeholders in link with the company profit and loss, as well as with local, national and global economy.

Fair attitude to company employees and support to local communities are in the centre of attention of social aspect of the CSR.

Social mainstay is formed of an internal and external part. Internal part of social mainstay deals with the company social policy, education and human potential development, provides for the staff satisfaction; while the external part focuses on cooperation with the groups of interest. External and internal parts of social policy are mutually interwoven.

In the field of the environment mainstay, companies focus mainly on the reduction of negative impact on the environment. Environmental management can be described as an intentional action on those company activities and products that might have a negative impact on the environment.

The aim is namely protection of natural resources, limiting emissions, pollutants, environmental risks and employees and local citizens' health, support to the development and dissemination of environment friendly technologies. Maintaining sustainable development to provide for future generations high life standards became an integral part of each subject, since its principles support the environment protection.

2.3 Construction industry in the Czech Republic

Construction industry in the Czech Republic ranks among the main economic branches being characterized by a major energy, products and materials consumption, which requires maintaining the sustainable development principles. In terms of macro-economy, investments in buildings and constructions list among the main investments in the whole Czech economy. Construction industry significantly influences the

employment rate in the country. Economic growth and employment can be influenced by public tenders used as an important tool of economic policy.

Construction industry in the Czech Republic employs most people of all the EU countries – two out of five employees depend on the development trends in this industry. The Czech Republic may therefore have to face serious economic and political problems in near future. Situation in construction industry has recently deteriorated as a result of the worldwide economic recession. As a consequence of delays and cancellations of new public tenders, construction companies have lost their work reserves in 2009, and the trend continued also in 2010. In regard to overall development in 2011 compared with 2010, the Czech Republic experienced a decline in construction industry by 3.1%. Companies with over 50 employees had a growth of construction orders by 18.1% compared with 2010. Nevertheless, their value declined by 12.2% [1].

3 Problem Solution

Taking in consideration the activities in construction industry as a branch of national economy and activities within social accountability, we can state that social accountability affects all the activities in construction industry. General public, however, perceive construction industry as a branch, where the CSR is widely neglected. Managements concentrate only on profit maximization and working conditions are not very good. Our empiric research therefore concentrated on the assessment of the CSR concept in selected companies.

Empiric research in construction companies

Companies addressed to participate in the questionnaire have been selected from a basic statistic set by means of a random selection without repetition. Basic statistic set was a full set of 84 construction companies with over 50 full-time employees involved in civil engineering production in the Hradec Králové (numbers of companies: 38) and Pardubice Regions (numbers of companies: 46; numbers of companies in Czech Republic: 822; Resource: the Czech Statistic Office). The main production involves construction works performed by in-house employees; in civil engineering the works and supplies concerning

the primary construction – foundations, vertical and horizontal constructions, involving turnkey delivery of line and water constructions.

A questionnaire containing 35 questions was designed for a top management staff in a construction company expected to have a complex knowledge and overview of the company business..

The questionnaire consisted of three parts:

- The first part contained questions concerning respondent's identification in regard to the hypotheses,
- The second part focused on the main problems, the purpose of the questionnaire, that is social accountability (economic, social and environmental), and
- The third – final part was designed for notes and optional feedback from the survey

Taking in consideration the limited scope, only the part of research is described concerning the CSR activities and their significance.

Questionnaire evaluation used statistic induction, where properties of the basic set are estimated on the basis of selected set properties. Selective position characteristics have been used for calculations and interpretation: weighed arithmetic average, selection modus (representing the statistic mark value that has the largest class frequency in the random selection; there can be several values of such type), selection median, dispersion. Questions that could not have been evaluated quantitatively were interpreted only

verbally. The research was carried out in the period from August to September 2011. Forty companies were addressed in a random selection, but the questionnaire returnability was very low because the company management are unwilling to participate in such research. The second run of the research was carried out anonymously in December 2011. Thirteen companies filled out and returned the questionnaire personally or via e-mail, one questionnaire was excluded due to different identification marks. Returnability of questionnaires reached 30%, the performed selection from the basic set was sufficiently representative, because [12]:

- All elements came from the same basic set,
- Individual elements of the basic set were selected independently of each other and
- Each element had the same chance to get into the set.

Social and economic survey used the dispersion analysis for the groups of respondents according to the turnover:

- 500 million CZK and over – group I,
- 250 – 499 million CZK – group II,
- 0 – 249 million CZK – group III.

Subject of the survey was, among others, H_0 hypothesis: the relation to company values is not affected by company size in terms of turnover regardless of the number of employees. The 5% significance level was taken in consideration.

Table 1: Relation of respondents to company values; auxiliary calculations

i	y_{ij}					n_i	$\sum ij$	$[(\sum ij)^2]$	\bar{ij}	$(\bar{ij})^2 n_i$
I	3.5	3.5	3.5			3	10.5	36.75	3.5	36.75
II	4	3.5	2	1	3.5	5	14	45.5	2.8	39.2
III	3.5	3.5	2.5	3.5		4	13	43	3.25	42.25
Σ						12	37.5	125.25		118.2

Resource: author's calculations,

k... 3, n...12

Total sum of S_y deviation quadrates is distributed to the sum of deviation quadrates between classes $S_{y,m}$, that is generated as a result of arithmetic average differences and the

sum of quadrates inside classes $S_{y,v}$, generated as a result of random deviations:

$$S_y = S_{y,m} + S_{y,v} \quad (1)$$

Total sum of quadrates reflecting overall variability:

$$S_y = \sum_{i=1}^k \sum_{j=1}^{n_i} y_{ij}^2 - \frac{1}{n} \left(\sum_{i=1}^k \sum_{j=1}^{n_i} y_{ij} \right)^2 \quad (2)$$

$$S_y = 125.25 - \frac{1}{12} * 37.5^2 = 8.0625$$

Sum of the quadrates between the groups:

$$S_{y,m} = \sum_{i=1}^k n_i \bar{y}_{ij}^2 - \frac{1}{n} \left(\sum_{i=1}^k \sum_{j=1}^{n_i} y_{ij} \right)^2 \quad (3)$$

$$S_{y,m} = 118.2 - 117.18 = 1.012$$

Sum of the quadrates inside the groups:

$$S_y = S_{y,m} + S_{y,v}$$

$$S_{y,v} = 8.0625 - 1.012 = 7.05$$

Test criterion was used to verify hypothesis H_0 :

$$F = \frac{\frac{S_{y,m}}{k-1}}{\frac{S_{y,v}}{n-k}} \quad (4)$$

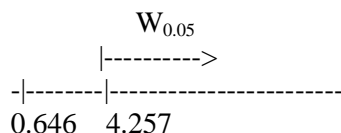
with $k-1$ and $n-k$ (or. 3-1 and 12-3) freedom degree.

Test criterion value: **F = 0.646**

Significance value selected at $\alpha = 0.05$

Critical area is defined as set $W = \{F; F > F_{\alpha}(k-1, n-k)\}$.

Critical value: $F_{0.95} = (2;9) = 4.257$



Test criterion value fell within the admissible values – a hypothesis of independence on a 5% significance level is accepted, no relation between the companies has been proven in terms of the turnover regardless of the number of employees and company values fulfilment.

To verify hypothesis H_0 , test of correlation coefficient significance was used ($H_0: \rho=0$), while the calculation was made by the STATISTICA software.

The value of correlation coefficient is $r = 0.48211$. Table value, or critical correlation coefficient value is r : $P(|r| > r_{\alpha}) = \alpha$ at selection range $n = 12$ makes: $r_{tab.} = 0.5760$

The found values $r < r_{tab.}$, allow to accept hypothesis H_0 – statistically linear dependence between the relation to company values and company size in terms of turnover regardless the number of employees has not been proved.

Based on the use of two statistic methods – dispersion analysis and correlation coefficient – it was found and proved that the data have not demonstrated a statistically significant relation between company values in terms of turnover, regardless of the number of employees.

Relations to company values can therefore be monitored regardless of the company turnover. This fact has been used in further assessment.

One of the questions focused on determination of individual areas priorities as part of the CSR (see Table 2).

The scale was selected using the range 1 – 10, where 1 represents the highest priority and 10 the lowest priority.

Table 2: CSR priorities as expressed by the enterprises

	Average	Mode	Median
Care for employees	1.83	1	2
Education of employees	2.17	1	2
Company transparency	3.09	1; 2	2
Relations with self-administration and state administration	3.64	4	4
Ecology	3.75	3; 5	3.5
Relations with school and non-profit organizations	5.36	5	5
Equal opportunities of men and women	5.67	3; 4; 6; 8; 9	6
Donorship	7.00	7; 8	7.5
Sponsorship	7.45	8; 9	8

Resource: author's findings

The above indicated data demonstrate that the values are symmetrically distributed because the found values are close to each other. In the case of company transparency, we can state that average values were influenced by companies that list this problem among those of low priority: values gained by a selection mode and median show that for most respondents it is, on contrary, a very topical

issue being paid a great attention within the CSR.

Ordering the subject according to the average values results in the fact that the respondents prefer the issues of their employees care, their education and also the above mentioned transparency of the enterprise. The fourth priority is given to the relations with self-administration and state administration institutions. This problem would certainly be of a high importance in companies that are interested in public sector tenders. Among the lowest priorities rank donor ship and sponsorship relating activities and equal opportunities of men and women.

The following question was aimed at activities already carried out in individual enterprises and their priorities.

Table 3: The CSR already carried out

	Average	Mode	Median
Care for employees	1,92	1	2
Education of employees	2,17	1	2
Company transparency	2,82	1	2
Relations with self-administration and state administration	3,67	3	3
Ecology	4,09	5	4
Relations with school and non-profit organizations	4,89	5	5
Equal opportunities of men and women	5,20	3; 4; 9	4,5
Donorship	6,00	7	7
Sponsorship	7,00	8	8

Resource: author's findings

4 Conclusion

Social accountability can be a complex issue to implement, which certainly depends on many factors, such as the managements decision to comply with the CSR policy, whether they are at the beginning of the implementation process or they have been maintaining and extending the CSR activities. We could assume a different attitude of individual enterprises in regard to their economic options, e.g. in connection with their turnover. However, by means of two statistic methods - dispersion and correlation coefficient analysis – it was not found that a statistically significant relation exists between company values and a turnover based company size. The relation to company values and market behaviour can be therefore

The survey demonstrated that, based on the average values, selection mode and median, a symmetric distribution of values will be in question.

When assessing the activities already carried out by the respondents, it was found that in regard to the priorities, the respondents comply with their statement about the most important issues.

The fourth priority according to the respondent's practice, is environment protection followed by the relations to state and self-administration bodies.

This finding presents a very positive attitude of individual enterprises that take care of human capital: they take care of their employees, pay attention to their education and develop their skills and knowledge. Equal consideration is given to company transparency towards its environment.

be monitored regardless of the researched companies turnover.

Benefits of the CSR cannot often be quantified; they are of a qualitative nature. However, they can be a source of competitiveness. The survey of construction industry enterprises demonstrated that among the most important CSR issues rank the care for employees, education and transparency of the company. Managements realize the importance, the strength and indispensable character of human capital. The lowest importance was proved at activities such as donorship and sponsorship.

To conclude the survey, we can state that the CSR concept has been developed in most of the monitored enterprises.

Company management focuses, besides economic aspects, also on social and environmental issues, but certain partial

criteria are underestimated or neglected. Among those is dialog with stakeholders, which is reflected in the external part of the social mainstay and also in the economic company mainstay.

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