ANALYSIS OF THE PARTNERING RELATIONS OF POLISH, SLOVAK AND UKRAINIAN CONSTRUCTION ENTERPRISES

Elżbieta Radziszewska-Zielina

Cracow University of Technology, Department of Civil Engineering, 31-155 Cracow, Warszawska 24, Poland, e-mail: eradzisz@izwbit.wil.pk.edu.pl

Received 18 January 2010; accepted 5 August 2010

Abstract. The present author has conducted research on partnering co-operation in construction industry. The research was carried out using the questionnaire method in selected administrative regions of the following three countries: Poland, Slovakia and Ukraine. It was assumed that analysis would mainly concern medium and large construction enterprises and that the respondents would include selected experts in these enterprises: owners, enterprise managers, construction site managers. The final assessment of the partnering relations of Polish and Slovak construction enterprises is similar. Partnering co-operation in construction industry is already noticeable but still remains on a low level. The assessment of the partnering relations in Ukrainian construction enterprises is lower than in the Polish and Slovak ones.

Keywords: partnering, level of partnering relations, questionnaire method, construction enterprise.

Reference to this paper should be made as follows: Radziszewska-Zielina, E. 2010. Analysis of the partnering relations of Polish, Slovak and Ukrainian construction enterprises, Technological and Economic Development of Economy 16(3): 432–454.

1. Introduction

When analysing the literature on the subject, the present Author noted several thematic groups concerning partnering relations in construction industry as well as the fact that this phenomenon is developing in some countries more than in others. Most works have been written in the USA, Britain, Australia and Hong Kong. A crucial work on partnering in construction industry, describing its “seven pillars”, is a book by (Bennett and Jayes 1998). It has become a popular reference source for other authors, such as (Bresnen 2007). The definition of partnering was proposed in 1991 by Construction Industry Institute. It describes partnering as “a long-term commitment between two or more organizations for the purposes of achieving specific business objectives by maximizing the effectiveness of each participant’s
resources. This requires changing traditional relationships to a shared culture without regard to organizational boundaries. The relationship is based on trust, dedication to common goals, and an understanding of each other’s individual expectations and values. Expected benefits include improved efficiency and cost effectiveness, increased opportunity for innovation, and the continuous improvement of quality products and services” (CII 1991: IV). The report by CII is based on 27 case studies concerning partnering in the USA. Another definition, by the Associated General Contractors of America, also in 1991, views partnering as „a way of achieving an optimum relationship between a customer and a supplier. It is a method of doing business in which a person’s word is his or her bond and where people accept responsibility for their actions. Partnering is not a business contract but a recognition that every contract includes an implied covenant of good faith” (AGC 1991: 2). What is defined by CII is “strategic partnering” whereas the definition by AGC concerns “project partnering”. Both terms may be applied to construction industry: “project partnering” would be a short-term approach aimed at a single construction project while “strategic partnering” is a long-term strategy of co-operation extended over several investments. The former (project partnering) is the first step towards the latter (strategic partnering). Among publications on partnering co-operation in British construction industry are (Beach et al. 2005) or (Black et al. 2000). The works concerning the Far East markets include (Phua and Rowlinson 2004) and (Kwan and Ofori 2001). The partnering aspect of Turkish construction industry is described by Koraltan and Dikbas (2002). The situation in Australia is analysed by Ng et al. (2002) or Glagola and Sheedy (2002). Chan et al. (2004) is one of the works which examine the success factors of project partnering in Hong Kong (Chen and Chen 2007) write about Taiwan.

Project partnering is the most frequent subject of analyses – cf. e.g. (Shields and West 2003; Franke and Grebenc 2008; Eriksson and Nilsson 2008; Chan et al. 2003; Baxendale and Greaves 1997; Drexler and Larson 2000; Gransberg et al. 1999), but there are also publications on the successful strategic partnering, e.g. (Kaluarachchi and Jones 2007; Eom et al. 2008). Other works draw attention to problems encountered by those construction enterprises which implement partnering, e.g. (Bresnen and Marshall 2000) or (Kululanga et al. 2001). However, what all authors emphasize is a smaller number of cases of misunderstanding between partnering enterprises. There are also publications which focus on a selected aspect of partnering. Some assume the point of view of one of the parties, such as the main contractor, subcontractor, supplier or client – cf. (Wood and Ellis 2005; Mason 2007; Dainty et al. 2001; Ardití and Chotibhongs 2005; Eriksson et al. 2008; Latham 1994). Other authors analyse the very process of partnering and undertake to distinguish its characteristics on the basis of examination of particular construction projects or particular enterprises, e.g. (Yeung et al. 2007, 2008; Eriksson and Pesämaa 2007). Some researchers have proposed systems of partnering co-operation assessment; among such works are (Cheung et al. 2003a, b; Bayliss et al. 2004; Nyström 2008; Cheng and Li 2004). Success factors in partnering have been analysed by e.g. (Chan et al. 2004; Chen and Chen 2007; Tang et al. 2006). According to Bubshait (2001), partnering is a method of cost reduction and minimization of conflicts between the participants of a given construction project. Trust as the vital factor of successful partnering is discussed by e.g. (Cheung et al. 2003a, b; Cheung 2007; Kumaraswamy et al. 2005). Among the analyses of partnering co-operation which apply game theory and the “prisoner’s dilemma” are (Sacks
Other works make use of social network analysis, e.g. (Pryke 2004). Information exchange in a partnering project is dealt with by such works as (Drejer and Vinding 2006; Chan et al. 2005; Lipshitz et al. 2002). In conclusion, despite the fact that partnering co-operation is relatively new as a strategy implemented in construction industry, it has already become popular in many different parts of the world. Although some difficulties are encountered during its implementation, analysts predict its further development in the future, seeing its various advantages.

Few works have been published on partnering relations in European construction industry. On the other hand, there already is a new trend in publications on marketing. Among these works is one by Virvilaitė (2008), which focuses on a new concept of relation marketing. A new trend noticed e.g. in Lithuania is based on trust and client satisfaction in the long-term relations between an enterprise and a client. It is the assessment of client satisfaction that is distinguished as a basic method of examining the client-enterprise relation. An article by Vitkauskaitė and Gatautis (2008) concerns the methodology of elaborating a new e-business platform for small and medium construction enterprises. This new approach to the construction of the e-Procurement process, focused on B2B interactions, analysis of the relation between transactors on the market and their offers, is to help construction enterprises assess and choose the most appropriate suppliers and investors. The works by Kapliński et al. (2002) propose relations between a construction enterprise and its microenvironment as one of three subjects of research on the organization and management of construction enterprises. Kapliński (2008) reports that during a Lithuanian-German-Polish colloquium in Kolobrzeg concerning the planning instruments in construction management the topics discussed included: the construction market, the financial state of a construction company, modern techniques of the management of a construction enterprise and a construction project with the use of, among others, methods of multicriterion optimisation. Ginevičius and Podvezko (2008) propose multicriteria graphical-analytical evaluation of the financial state of construction enterprises to be used for complex assessment of the effectiveness of construction enterprises' financial activity. In another article, Ginevičius (2009) discusses quantitative evaluation of unrelated diversification of enterprise activities, using a construction enterprise as an example. What needs mentioning are also the present Author's own works on the subject. The publication (Radziszewska-Zielina 2008c) is a review of those models where partnering relations play a crucial part and a presentation of her own model of partnering relations in construction industry. Advantages of and barriers to the creation of partnering relations by Polish enterprises are analysed in (Radziszewska-Zielina 2008b). In (Radziszewska-Zielina 2008a) she describes the characteristics of the functioning of a construction enterprise.

2. The research model of the partnering relations of construction enterprises

Partnering co-operation on the institutional (business-to-business) market is based on partnering relations between enterprises. The concept of partnering relations is not described in literature in the form of numerical data. It is commonly used in an intuitive way. The 3 basic features which are characteristic of partnering relations, emphasized in the definition of partnering and in all publications on the subject, are: the fact that these are long-term
relations, that the partners have common goals and that there is mutual trust. The present Author investigated the criteria which show whether the relations of an enterprise on the institutional market are partnering or traditional and she described these relations by means of a set of 14 parameters (Table 1). This allowed for creating a graphic model of the partnering relations of construction enterprises with four main transactors on the institutional (business-to-business) market (Fig. 1).

Table 1. The adopted symbol and name of a relation parameter and its characteristics in the traditional and the partnering approach

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Traditional relations</th>
<th>Partnership relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>A The basis of ordering</td>
<td>Choice based on the lowest price</td>
<td>Price is not the most important. Holistic approach and choice of partner based on, among others, partner’s high quality of services and relations, ability to solve problems, credibility and loyalty</td>
</tr>
<tr>
<td>B Number of suppliers</td>
<td>Large, suppliers compete with one another</td>
<td>Limited to best partners</td>
</tr>
<tr>
<td>C Approach to service quality control</td>
<td>Buyer performs inspection every time when goods are received</td>
<td>Quality control performed by supplier. Buyer trusts a proven partner</td>
</tr>
<tr>
<td>D Cost division</td>
<td>Buyer keeps cost savings so supplier hides them. Win-lose strategy</td>
<td>Precise definition of share in costs, profit and risk related to contract execution. Win-win strategy</td>
</tr>
<tr>
<td>E Adaptation to market changes</td>
<td>It is the buyer who determines response to changing market conditions</td>
<td>Buyer and supplier together plan their actions and elaborate their plan of adaptation to market changes</td>
</tr>
<tr>
<td>F Participation in enterprise’s new offer</td>
<td>None</td>
<td>Active, common effort towards constant improvement of services</td>
</tr>
<tr>
<td>G Mutual relations</td>
<td>Purely formal, commercial, based on contracts</td>
<td>Often informal, based on trust. Cooperation of partners</td>
</tr>
<tr>
<td>H Way of communication</td>
<td>Communication: minimal, limited to orders and complaints</td>
<td>Communication: open, frequent, initiated by both parties</td>
</tr>
<tr>
<td>I Information sharing</td>
<td>Limited information flow</td>
<td>Information exchange. Open, quick information flow</td>
</tr>
<tr>
<td>J Conflict solving</td>
<td>It is the buyer who solves conflicts</td>
<td>Solving conflicts together. There is a mechanism of conflict solving</td>
</tr>
<tr>
<td>K Standards, rules of behaviour</td>
<td>No common rules. Different aims. Lack of flexibility</td>
<td>Common values and aims. Partners’ flexibility concerning procedures, standards and habits</td>
</tr>
<tr>
<td>L Frequency of contact</td>
<td>Single contacts</td>
<td>Frequent, permanent contact and permanent relations</td>
</tr>
<tr>
<td>M Approach to issues concerning quality</td>
<td>Focus exclusively on technical quality of product</td>
<td>Complex approach to quality issues. Quality of relations is important</td>
</tr>
<tr>
<td>N Trust</td>
<td>Lack of trust in business</td>
<td>Visible trust</td>
</tr>
</tbody>
</table>
It is common to describe these relations as a gradable phenomenon. For example Otto (1999: 100) after Kotler (1994) distinguishes 5 relation levels: basic “bare bones”, reactive, accountable, proactive, partnership. Webster (1992) presents the evolution of relations between a supplier and a receiver starting from single transactions, to repeated transactions, long-term relations and partnering relations, and finally to strategic alliances. Similarly, Hutt and Speh (1998) describe different levels of relations between sellers and buyers on the institutional market, starting from a single exchange, to repeated transactions, long-term relations, partnering, to exchange based on tight co-operation supported with a contract, i.e. a strategic alliance. The present Author assumes that the relations may be divided according to a five-point scale from 1 – traditional relations to 5 – partnering relations. She describes the extremes of the scale qualitatively (Table 1) and proposes 14 parameters for the purpose of assessment of partnering construction enterprises. By means of these fourteen parameters, experts from construction enterprises assessed the relations with four transactors in the microenvironment. This was done on the five-point scale. Thanks to the application of an interview and statistics in the questionnaire in order to elaborate the results of empirical research, the Author has successfully presented quantitatively the research results and the final outcome showing the level of the partnering relations of construction enterprises.
3. The organization of the Author’s own research

In 2008, the Author conducted research on partnering co-operation in construction industry. The method chosen was the standardized questionnaire based on the interview questionnaire. The methods of questionnaire research and the possibilities of their application in construction industry are presented by the Author in her handbook (Radziszewska-Zielina 2006). Although research performed with the use of the method chosen is very time-consuming and laborious, it turns out to be the best in practice for the type of research issues like the ones analysed in the present paper. During a direct interview, it is easier to enquire an expert in an enterprise, motivate the expert to take part in the research and answer all questions than when another method, such as a questionnaire, is used. Thanks to the method chosen the research sample is large. Other methods, such as the questionnaire, involve problems with its completion or returning. The only drawback of the method chosen is the very effort of performing it. It was a major venture to plan, organize and conduct the present research in three countries. The organization and course of the present research was as follows. Three countries were selected: Poland, Slovakia and Ukraine. A certain research area was chosen in each country. Due to possibilities of organization and financing, małopolskie province was selected in Poland, Košicky and Prešovský regions in Slovakia and Transcarpathian region in Ukraine. The scope of the research, i.e. its area in particular countries, was comparable: approximately 13–15 thousand km². The number of registered construction enterprises in these areas is different; with the largest number registered in małopolskie region in Poland. While in the case of Poland and Slovakia one might undertake to prove that the research conducted in the selected regions (these provinces are typical, average, neither very rich not very poor, not containing the country’s capital), is representative of the entire country, one may not state the same for Ukraine. Transcarpathian region is definitely poorer in every aspect, also that of the activity of construction enterprises, than e.g. the area of Kiev, and is specific due to its geographical location (borders with three countries). For the sake of clarity, whenever the results of the research done in the above-mentioned regions are referred to, the Author will refer to the enterprises in those regions as Polish, Slovak or Ukrainian enterprises without mentioning their regions. The Author intended to examine mainly medium and large enterprises. For this, the commonly adopted classification was used, according to which microenterprises have up to 9 employees, small enterprises have from 10 to 49 employees, medium ones have from 50 to 249 employees and large ones have over 249 employees. The present research excluded microenterprises in all three countries; their number was therefore not included in Table 2. Very small construction enterprises employing only a few workers are often set up only because there currently is a boom on the construction market so it is worth trying. However, some of the owners do not have appropriate knowledge and technical skills; some of these enterprises will be closed within a few months or will change their profile to the next currently attractive branch. In these cases, there is no question of applying the partnering approach. Moreover, there are many more microenterprises than medium and large ones, so their examination would considerably increase the cost and time of the research. It is therefore advisable to disregard this group of enterprises.
Table 2. Statistical data concerning research done in 2008. The Author’s own study based on data obtained from statistical offices in particular countries and on information from construction industry experts.

<table>
<thead>
<tr>
<th>Country name</th>
<th>Area in km²</th>
<th>Number of inhabitants</th>
<th>Number of construction enterprises</th>
<th>Small ones</th>
<th>Medium ones</th>
<th>Large ones</th>
<th>Analysed ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poland</td>
<td></td>
<td></td>
<td>Malopolskie province (Cracow + surroundings)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15 200</td>
<td>3 282 000</td>
<td>888</td>
<td>148</td>
<td>19</td>
<td>19</td>
<td>147</td>
</tr>
<tr>
<td></td>
<td>Kończyk region (Kośice + surroundings)</td>
<td>6 753</td>
<td>770 000</td>
<td>282</td>
<td>37</td>
<td>3</td>
<td>81</td>
</tr>
<tr>
<td>Slovakia</td>
<td></td>
<td></td>
<td>Prešov region (Prešov + surroundings)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 998</td>
<td>803 000</td>
<td>328</td>
<td>38</td>
<td>0</td>
<td>3</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>altogether (Kończyk and Prešov region)</td>
<td>14 751</td>
<td>1 573 000</td>
<td>610</td>
<td>75</td>
<td>3</td>
<td>168</td>
</tr>
<tr>
<td>Ukraine</td>
<td></td>
<td></td>
<td>Transcarpathian region (Uzhhorod + surroundings)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 777</td>
<td>1 258 264</td>
<td>350</td>
<td>35</td>
<td>2</td>
<td>2</td>
<td>112</td>
</tr>
</tbody>
</table>

As in the selected regions of Slovakia and Ukraine there are over twice fewer medium and large construction enterprises than in Malopolskie province in Poland, the present research also included the largest enterprises of the group of the small ones (Table 2). The respondents were the selected experts employed in the construction enterprises, who were capable of answering the research questions, i.e. enterprise owners and managers as well as construction site managers. Data in Table 2 concerning the number of enterprises in Ukraine are approximate as there are no respective publications. The only information the Author obtained from the Ukrainian statistical office is the total number of 1036 construction enterprises in Transcarpathian region. The obtained sample may be regarded as large.

4. Assessment of the relation parameters, determined by means of statistical methods

For the purpose of diagnosis of the relations of construction enterprises and determination to what degree these relations are partnering or traditional, statistical analysis was performed on the collected data. The assessments of particular parameters of relations with four selected transactors, obtained by means of questionnaires, had their mean values determined according to the following formula (1):

\[
\bar{x}^{(k)}_j = \frac{1}{n} \sum_{i=1}^{n} x_{i,j}^{(k)},
\]

where \(x_{i,j}^{(k)} \in \{1, 2, 3, 4, 5\}\) – the reply of the expert from the \(i\)-th construction enterprise to the question about the \(j\)-th parameter of a relation with the \(k\)-th transactor, assessment on the 5-point scale, \(n\) – the number of analysed construction enterprises in particular countries (e.g. in Poland \(n = 147\)), \(\bar{x}^{(k)}_j\) – the mean of the experts’ replies to the question about the \(j\)-th parameter of the relation with \(k\)-th transactor.
The mean values of the assessments of the relation parameters for particular transactors and countries are presented on the profile diagrams (Figs. 2, 3, 4). The letters which stand for the relation parameters from A to N are the same as in Table 1. The parameters were assessed by experts from construction enterprises in the selected regions of three countries, on the scale of points from 1 to 5. Assessment 1 stands for the traditional approach; 5 symbolizes the partnering approach. The assessments in between symbolize intermediate states. The higher the assessment within a given scope, the more pronounced the partnering relations are. A similar interpretation ought to be adopted as concerns the values of the mean assessments. Analysis of the diagrams of assessment profiles allows for a preliminary observation stating with which transactor the relations are more partnering (the diagram more to the right) as well as how many and which parameters make this co-operation a partnering one. The importance of particular parameters is disregarded here.

Analysis, on the basis of Fig. 2, of the relations of Polish construction enterprises in the selected regions in the aspect of partnering co-operation with four selected transactors shows that these relations are more partnering in the case of co-operation with subcontractors and general contractors than with the other transactors. Only regarding two parameters, namely the basis of order placement and cost division, the relations are more partnering with investors.

![Figure 2: The assessment profiles of the parameters of relations between Polish construction enterprises and four transactors](image-url)
than with subcontractors and general contractors. Assessment profiles for the parameters of the relations of construction enterprises with building material suppliers and investors are assessed similarly. However, with regard to 6 parameters, the partnering relations are slightly better between construction enterprises and building material suppliers while with regard to 8 parameters the partnering relations are better between construction enterprises and investors. It is the relations of construction enterprises with equipment suppliers that are the worst in the aspect of partnering co-operation, particularly as regards the parameter of mutual relations.

Generally, the relations of Slovak construction enterprises in the selected regions with building material suppliers, investors, subcontractors and main contractors are assessed in a similar way (the diagrams “intertwine” at places and almost entirely overlap, more than in the case of Polish construction enterprises). It is the relations of construction enterprises with equipment suppliers that are the worst in the aspect of partnering co-operation, particularly as regards the parameter of participation in the enterprise’s new offer (Fig. 3).

The partnering co-operation of construction enterprises with all analysed transactors was assessed lower in Ukraine than in Poland and Slovakia. The relations of the enterprises in the selected regions in Ukraine are more partnering as regards co-operation with sub-

![Fig. 3. The assessment profiles of the parameters of relations between Slovak construction enterprises and four transactors](image)
contractors, main contractors and investors than with the other transactors. The assessment profiles for the parameters of the relations of construction enterprises with subcontractors, main contractors and investors are assessed similarly. However, with regard to 8 parameters, the partnering relations are slightly better with investors and, with regard to 6 parameters, the partnering relations are better with subcontractors and main contractors. It is the relations of construction enterprises with equipment suppliers that are the worst in the aspect of partnering co-operation, particularly as regards the parameter of participation in the enterprise’s new offer (Fig. 4).

A formula analogous to (1) was used to determine the mean assessments of importance of particular parameters. Then the scatter diagrams of the parameters of relations were elaborated for particular transactors and countries. The way to create them was to mark on the vertical axis the assessment of the importance of a relation parameter (weight) and to mark the assessment of this parameter on the horizontal axis. The mean assessment of the parameters in all cases is above the average. The mean importance is also above the average. Such a situation implies the division of the diagram into 4 areas by drawing a vertical straight line with the $x$ coordinate, which is the mean value of the assessment of the parameters for a given transactor and country, and a horizontal axis with the $y$ coordinate, which is the mean

![Fig. 4. The assessment profiles of the parameters of relations between Ukrainian construction enterprises and four transactors](image-url)
value of the assessment of the importance of the parameters (the mean of the mean assessments). The assessment of the relation parameters and the assessment of their importance is now analysed with regard to the average reply of the experts. On each scatter diagram (Figs. 5–16), there are four areas. Their interpretation and the resulting recommendations for construction enterprises are as follows.

The parameters in the upper right area are regarded by experts in construction enterprises as more important than other parameters, their weight assessment is above the mean value; they are also assessed above the mean on the assessment scale which shows the level of partnering relations. These relation parameters have the largest impact on the development of partnering co-operation. In the case of a construction enterprise, these are the parameters that must be focused on, in the relations with particular transactors, so that they are not made worse.

The parameters in the upper left area are also regarded as more important than others; their weight assessment is above the average. However, these parameters are assessed below the mean value on the assessment scale showing the level of partnering relations. These are important relation parameters but construction enterprises do not maintain them on the level which may be described as definitely partnering. It is then worth raising their level towards the partnering approach.

The parameters in the bottom right area are assessed as less important than other parameters; their weight assessment is below the average but they are assessed above the mean value on the assessment scale showing the level of partnering relations. These parameters are therefore not the most important but nevertheless fulfilled on the partnering level. They ought to be maintained on their present level.

The parameters in the bottom left area are assessed as less important than others; their weight assessment is below the average and they are assessed below the mean value on the assessment scale showing the level of partnering relations. These relation parameters should be improved to be more partnering in the second place.

The reason why such a way of data presentation was applied is that the scatter diagrams allow for qualitative assessment of the issue, which was the goal to be achieved at that stage of analysis. One might also try applying other statistical methods, such as analysis of variance, correlation or regression. However, they are not the focus of the present work.

Analysis of the diagrams 5–16 shows that the parameter considered in most of the cases in all analysed countries, in the upper right area, is the approach to quality issues. It is important and assessed as high (above the average). This relation parameter has the largest impact on the development of the partnering approach. It needs much attention in the relations with particular transactors so as not to make it worse. A parameter found in most cases in all of the analysed countries (in the upper left area) is the approach to service quality control (important but assessed lower, i.e. below the average). It is therefore important to improve the level of this parameter so that it is more partnering.

On the scatter diagrams (Fig. 5–16), on the vertical axis, assessment of the importance of relation parameters; on the horizontal axis, assessment of the parameters of relations with a given transactor.

Symbols and description of relation parameters in Table 1.
Fig. 5. The scatter diagram of parameters of relations of Polish enterprises with the material supplier

Fig. 6. The scatter diagram of parameters of relations of Polish enterprises with the equipment supplier
Fig. 7. The scatter diagram of parameters of relations of Polish enterprises with the subcontractor/main contractor

Fig. 8. The scatter diagram of parameters of relations of Polish enterprises with the investor/investor’s representative
Fig. 9. The scatter diagram of parameters of relations of Slovak enterprises with the material supplier

Fig. 10. The scatter diagram of parameters of relations of Slovak enterprises with the equipment supplier
Fig. 11. The scatter diagram of parameters of relations of Slovak enterprises with the subcontractor/main contractor

Fig. 12. The scatter diagram of parameters of relations of Slovak enterprises with the investor/investor's representative
Fig. 13. The scatter diagram of parameters of relations of Ukrainian enterprises with the material supplier

Fig. 14. The scatter diagram of parameters of relations of Ukrainian enterprises with the equipment supplier
Fig. 15. The scatter diagram of parameters of relations of Ukrainian enterprises with the subcontractor/main contractor

Fig. 16. The scatter diagram of parameters of relations of Ukrainian enterprises with the investor/investor’s representative
The final assessment of the relations (partnering relation level) of construction enterprises with particular transactors was done for a given region as a weighed mean out of three assessments of particular parameters, on the basis of the following formula (2) (MacCrimmon 1968):

\[
\bar{x}^{(k)} = \frac{1}{m} \sum_{j=1}^{m} x_j^{(k)} \cdot w_j,
\]

where: \( w_j \) – average assessment of the weight of the \( j \)-th parameter, \( x_j^{(k)} \) – average assessment of the \( j \)-th parameter with the \( k \)-th transactor.

The results, the level of partnering relations of construction enterprises with four transactors, are presented in Table 3. The strongest partnering relations are between construction enterprises and other construction enterprises and the weakest with equipment suppliers, which is probably due to the fact that some construction enterprises have their own set of equipment.

<table>
<thead>
<tr>
<th>Transactor</th>
<th>Poland</th>
<th>Slovakia</th>
<th>Ukraine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material suppliers</td>
<td>3.43</td>
<td>3.52</td>
<td>2.88</td>
</tr>
<tr>
<td>Equipment suppliers</td>
<td>3.13</td>
<td>3.35</td>
<td>2.77</td>
</tr>
<tr>
<td>Main contractors/subcontractors</td>
<td>3.58</td>
<td>3.5</td>
<td>3.01</td>
</tr>
<tr>
<td>Investors/investors’ representatives</td>
<td>3.46</td>
<td>3.51</td>
<td>3.08</td>
</tr>
</tbody>
</table>

After obtaining the data on the level of the partnering relations of construction enterprises with particular transactors in particular regions as well as after calculating the mean weights of particular transactors on the basis of information from experts employed in the examined construction enterprises and applying the weighted mean formula analogously, the level of partnering relations was determined for particular regions (Fig. 17). The final assessment of the partnering relations of Polish and Slovak construction enterprises in selected regions is similar and slightly higher than in the case of Ukrainian construction enterprises.

![Fig. 17. The level of partnering relations of construction enterprises in the selected regions of three countries](image-url)
5. Conclusions

The relation parameter: approach to quality issues has the strongest impact on the development of partnering co-operation in construction industry. It is important and receives high assessment in all of the examined regions of the three countries. It must be taken most care of in the relations with particular transactors in order not to make it worse. On the other hand, the parameter: approach to service quality control is important but assessed lower. It is therefore worth raising its level towards the partnering approach.

The final assessment of the partnering relations of Polish and Slovak construction enterprises is similar (3.40 and 3.47 respectively). This means that partnering co-operation in construction industry is already noticeable, though still to a small degree. Assessment of the partnering relations in Ukrainian construction enterprises (2.94) is lower than in Polish and Slovak ones. It may be concluded that this assessment is the neutral one on the 1–5 scale: from 1 – traditional relations to 5 – partnering relations. This in turn means that Ukrainian construction enterprises do not undertake any visible partnering co-operation and that the typically traditional relations are not very noticeable either.

References


LENKIJOS, SLOVAKIJOS IR UKRAINOS STATYBOS ĮMONIŲ PARTNERYSTĖS SANTYKIŲ ANALIZĖ

E. Radziszewska-Zielina


Reikšminiai žodžiai: partnerystė, partnerystės santykių lygis, anketinės apklausos metodas, statybos įmonės.
Elżbieta RADZISZEWSKA-ZIELINA. PhD is educated as an construction engineer and a sociologist. Nowadays, she works as Assistant Professor at the Department of Civil Engineering in Cracow University of Technology in Division of Construction Technology and Organization. She is interested in Building Marketing and Management. She is author of two books and about 60 articles. She is a member of the group EURO Working Group OR in Sustainable Development and Civil Engineering (EWG-ORSDE).