

## Perceptions of Construction Industry to Managerial Competences in Construction: Lithuanian Case

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**Abstract.** The article presents the results of study conducted during the MBAIC project. The main task of the project was to deepen Directive's 89/48/EEG ideas, which will lead to creation of proper European system of comparison, certification and mutual recognition of managerial qualifications in construction. During the project, the survey on managerial competences in construction was conducted. The project resulted with new postgraduate studies for construction managers were created forming common platform of managerial knowledge. The scope of knowledge included in didactic material was agreed with representatives of European construction industry. This base of knowledge will extend the foundations of recognition and certification of managerial qualifications in construction, in EU.

**Keywords:** managerial competences in construction; managerial knowledge; construction industry; recognition and certification of managerial qualifications.

**JEL Classification:** I21, L74, M53, J24, J80.

**Conference topic:** Modern Business Management Problems and Perspectives.

### Introduction

Knowledge on construction project management is a key issue in today's construction industry across Europe. Decision situations in construction projects are usually complex. The decisions can be related to the whole project, a specific task, a stakeholder, etc. (Taillander *et al.* 2015). The consequences of decision can have a major impact on the project success or failure, and on its environment. For every project manager it is very important to know, that risks can change along the different phases of the project. Fink (2014) noted that achieving the final goal depends on project manager skills. More over, every project manager needs help from all the team, stakeholders, partners, their business relationships and their handovers. Many studies give the examples how important nowadays, when markets are strongly changing and innovation is moving every process forward, is to ensure that project managers' qualification is up to date. For example, Merschbrock and Munkvold (2015) point out that networking technology such as BIM could be a challenging for construction company as construction firms exist along a spectrum ranging from highly computer literate organizations to those hardly using computers in their work. In their study, they refer to the personal characteristics of an individual working with the technology, such as IT skills, capability to learn, and previous experience with IT. Basu (2014) summarised the best practices of managing quality in large infrastructure projects and concluded that there should be evidence of regular self-assessment to identify and follow up areas of continuous improvement. Moreover, continuous education, training and communication tools need to occur in order to share and enhance the skills, process and systems knowledge of project team members.

The construction industry is one of those areas where there is a large flow of human resources between countries. Therefore, EU citizens with the professional qualifications recognized in one Member State should be able to move and work in other EU countries. The European Commission Directive 2005/36/EC provides a basis for the recognition of professional activity not only on the basis of previously required "profession" or "title" but it also states that the activities may also be pursued by other professionals who work in the profession and passed appropriate training in this area of activity. Many countries in Europe have developed substantial knowledge in topic of project management through academic courses, professional training and experience of practitioners. The need to prepare professionals to work in the open European market is impelling efforts for convergence in this matter (Nowak *et al.* 2015).

The project “MBA in Construction – Postgraduate European Common Studies in Construction Project Management (MBAIC)” within the Leonardo da Vinci programme deepens the ideas of Directive 89/48/EEG, which will lead to the creation of a proper European system of comparison, certification and mutual recognition of managerial qualifications in construction. The project aims to create common postgraduate studies at the Master of Science level among several European universities (Warsaw University of Technology, Vilnius Gediminas Technical University, Technical University of Valencia, Poznan University of Technology, and the University of Minho). Professional associations (the Chartered Institute of Building and the Polish Association of Building Managers) supervised and supported the project. The project is based on several successfully finished projects, which enabled the creation of a set of construction managers’ manuals (Nowak *et al.* 2015). This project will create a common platform for managerial knowledge in form of postgraduate studies for construction managers.

### Competency survey

Whereas the professional development foresees the development of only specific skills and competences excluding the basic ones, the representatives of construction industry were asked for opinion on the importance of exact skills and competences to the construction project.

At the first stage in a number of discussions, the experts selected the specific sets of social, personal and managerial skills as well professional competences. Those sets were included in survey and distributed to construction companies in every community participated in project. This paper presents the results received from the survey of Lithuanian construction industry. The results of survey revealed that the top three *social* skills according to importance to the construction industry are teamwork, negotiation and personal culture. The top three *personal* skills according to importance to the construction industry are striving for results, troubleshooting and decision-making. The top three *managerial* skills according to importance to the construction industry are organising, scheduling and strategic thinking. The top three areas of *professional competence* according to importance to the construction industry are willingness to learn, professional knowledge in the field of construction (materials, technologies) and IT skills. The ranks of criteria provided in Appendix 1.

The respondents were also asked to express their opinion of the appropriate period of training courses related to expansion of knowledge in the management. The majority of respondents pointed the duration of trainings of maximum 1 year. One fourth of respondents marked the period of 2 years and one fourth have the opinion that specific training courses for construction professionals are not necessary (Table 1). However, the majority consider that the training courses is an essential component of professional development in the field of management. The 89.19% of respondents indicated that most appropriate type of training is apprenticeship or internship, that take place directly at construction site or company office, the 78.38% indicated that “face to face” direct training is more effective than self-improvement on “Moodle” type platforms (Table 2). About a half of respondents noticed that language courses could be useful taking into account the high level of mobility of construction professionals. They also mentioned the case studies scenarios as most effective education technique (Table 3).

Table 1. The distribution of responses to the question “Q14. What period is attributable for training/courses/postgraduate courses related to the expansion of knowledge in the management?” (Source: Author’s calculations)

Training period	%	q	rank	
up to 1 week	8.11	0.0811	4	up to 1 week 8.11
up to 2 weeks	2.70	0.0270	6	up to 2 weeks 2.70
up to 1 month	0.00	0.0000	8	up to 1 month 0.00
up to 3 month	5.41	0.0541	5	up to 3 month 5.41
up to 6 month	0.00	0.0000	8	up to 6 month 0.00
up to 1 year	37.84	0.3784	1	up to 1 year 37.84
up to 1,5 year	0.00	0.0000	8	up to 1,5 year 0.00
up to 2 years	24.32	0.2432	2	up to 2 years 24.32
unnecessary	21.62	0.2162	3	unnecessary 21.62
Sum	100	1		

Table 2. The distribution of responses to the question “Q15. If you consider that the courses/training is an essential component of knowledge in the field of management, please indicate how should be a course/training composed?” (Source: Author’s calculations)

The type of training	Yes (%)	No (%)		
“Face to face” direct training	78.38	21.62	“Face to face” direct training	78.38 21.62
Self-improvement on “Moodle” type platform	37.84	62.16	Self-improvement on “Moodle”...	37.84 62.16
Apprenticeship or internship	89.19	10.81	Apprenticeship or internship	89.19 10.81
Managerial games	54.05	45.95	Managerial games	54.05 45.95
Language courses	48.65	51.35	Language courses	48.65 51.35

■ Yes ■ No

Table 3. The distribution of responses to the question “Q17. If you consider that postgraduate studies are an essential component of knowledge in the field of management, please indicate which education techniques are more effective?” (Source: Author’s calculations)

No	Education techniques	(%)	
A	Presentations	21.62	A 21.62
B	Case study scenarios	48.65	B 48.65
C	Small group discussions	29.73	C 29.73

### Virtual study environment

Based on reflection from industry representatives the studies methodology for professional development of construction managers was created. The training techniques include presentations conducted by the trainer/tutor or a resource specialist, analysis of case studies or real-life situations and discussions, simulations of real-life situations and small group discussions to share experiences and ideas or problem solutions. Studies methodology foresee to use MOODLE platform for distance and blended learning (see Fig. 1).



Fig. 1. MOODLE platform for distance and blended learning in MBAIC postgraduate studies (Source: MBAIC project MOODLE platform for distance and blended learning 2015)

The teaching and learning methodology created assuming that study programme fills an immediate need and is therefore highly participatory. Adult learning principles include self-directed, experiential learning to ensure that participants and the trainer will learn from each other. The reflection and corrective feedback create comfortable and mutually respectful environment between trainer/tutor and participants.

The MBAIC postgraduate studies based on the Construction Managers' Library created within the Leonardo da Vinci (LdV) projects entitled: "COMMON LEARNING OUTCOME FOR EUROPEAN MANAGERS IN CONSTRUCTION, CLOEMC)" and TTC Project titled "Strengthening of European Union funds absorption capacity for infrastructure construction projects" (Minasowicz 2005; Minasowicz *et al.* 2013; Nowak 2014). The didactic material for new MBAIC study program consists of the following modules: IT support for construction projects; Cost and time management in construction; Site Management; Risk and Value Management; Management of Infrastructure Projects; Human Resources Management in Construction; Chosen issues of Construction Project Management; H&S, Environmental and Quality Management; Procurement and Marketing; Legal Aspects in Construction.

### **Postgraduate studies in construction project management**

Working in construction, in accordance with Directive 89/48/EEG, requires direct or indirect (by virtue of the laws, regulations and administrative provisions of the Member State) possession of evidence of education and training or/and specified attestation of competence. The attestation may be in the form of a certificate confirming the level of competency. Such certificate would be issued by a professional association in one EU country and would be recognized by associations in other Member States.

As the main task of the project was to deepen Directive's 89/48/EEG ideas, which will lead to creation of proper European system of comparison, certification and mutual recognition of managerial qualifications in construction, the project consortium created new postgraduate studies for construction managers forming common platform of managerial knowledge. The cooperation with Polish Association of Building Managers (PSMB), The Chartered Institute of Building (CIOB) and The Association of European Building Surveyors and Construction Experts (AEEBC, creator of EURBE Card – European Building Expert) assure the European dimension of the project. The results of project will allow promotion, certification, comparison and recognition of construction engineers and manager competence at the European level. The postgraduate studies will allow the process of standardization (in all 12 countries associated in AEEBC, and other also) of certification the process of engineers applying for the title of EurBE.

In Lithuanian case, was decided that the most appropriate status of study programme is non-formal adult education program conducted jointly with other EU countries. Such training programs will not provide qualification and need not pass the accreditation. A certificate marks completion of such program. University according to University Statute will create and issue the form of certificate. The supplement enclosed to the certificate shows the subjects, hours and credits. For better promotion the created training program will be registered in KTPRR (The training programs and events register), that is connected with AIKOS – the register of all formal and informal training programs. KTPRR is intended to record the objects (ie, training programs and events) to collect, store, process, organize, store their data and to provide information about the registry objects. The purpose of data processed in register – to meet information needs of people who want to improve their qualifications, and to provide reliable and timely information on training opportunities for employers, educational institutions, public administration bodies and others. Those who wish to improve their qualifications or retraining may carry out the search in the register of registered training programs or events and retraining programs.

Selection of the students accepted to the studies will be done through a transparent and auditable way. Students with at least a Bachelors' degree, or its equivalent, in construction or related fields (depending on national regulations) can apply for admission. Every Consortium University hosting students enrol them according to its' own regulations. Consortium will be responsible for development and maintenance the quality development schemes to be implemented for the continuous development of the studies programme and procedures to guarantee the sustainability of the studies and promote employability of the students.

### **Conclusions**

The main effect of the project presented in this paper is the recognition of needs for qualifications of construction management personnel, recognition of applied systems of education, certification of the personnel and accreditation of studies and courses (formal and informal) in EU, formulation of complex structure of managerial knowledge in construction, creating a set of textbooks, as well as the development of a curricula of studies and courses in the EU. Project aims to develop a European system, which would assure standardization of levels and transparency of construction managers' qualifications. The postgraduate studies created during the project will allow process of standardization (in all 15 countries associated in AEEBC – The Association of European Building Surveyors and Construction Experts, and other also) of certification process of engineers applying for the title of EurBE.

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## Appendix 1

### Some results of competency survey (Source: Author's calculations)

<i>Q10 The importance of social skills in your position</i>															
	Criteria	Points											Average	q	rank
		0	1	2	3	4	5	6	7	8	9	10			
C1	Relationship building	0	2	3	1	1	5	2	0	9	4	10	7.03	0.0997	8
C2	Sharing knowledge and experience	1	1	2	2	0	0	3	3	14	3	8	7.27	0.1031	6
C3	Written communication	0	2	1	6	5	3	3	7	6	4	0	5.62	0.0798	9
C4	Communicativeness	0	0	0	2	2	4	6	4	6	6	7	7.30	0.1035	5
C5	Personal culture	0	0	1	0	4	3	3	4	5	10	7	7.54	0.1070	3
C6	Negotiation	0	0	0	1	1	5	3	2	4	10	11	8.00	0.1135	2
C7	Customer service	0	2	3	1	0	4	3	2	7	6	9	7.11	0.1008	7
C8	Support the sales process	0	3	2	0	5	3	4	5	2	2	5	5.00	0.0709	10
C9	Teamwork	0	0	2	0	0	2	2	4	8	7	12	8.14	0.1154	1
C10	Conflict resolution	0	2	1	2	3	1	0	3	8	5	12	7.49	0.1062	4
Sum												70.49	1.00		

*Q11 The validity of personal skills on your workplace*

	Criteria	Points											Ave- rage	q	rank
		0	1	2	3	4	5	6	7	8	9	10			
C1	Striving for results	0	0	0	0	0	1	3	4	3	5	21	8.92	0.1293	1
C2	The flexibility	0	1	1	0	3	2	11	1	4	9	5	7.05	0.1023	6
C3	Work ethics	0	0	2	1	3	4	3	7	7	6	4	6.92	0.1003	7
C4	Decision-making	0	0	0	0	0	0	1	4	10	11	11	8.73	0.1266	3
C5	Entrepreneurship	1	0	2	3	2	2	9	3	9	4	2	6.32	0.0917	9
C6	Coping with stress	0	0	2	1	3	3	3	6	9	4	6	7.08	0.1027	5
C7	Troubleshooting	0	0	0	0	0	0	2	3	7	12	13	8.84	0.1281	2
C8	Conscientiousness / reliability	0	0	0	1	1	1	2	3	10	6	13	8.35	0.1211	4
C9	Independence	0	0	2	2	5	2	3	6	9	2	6	6.76	0.0980	8
Sum												68.97	1.00		

*Q12 The importance of managerial skills on your workplace*

	Criteria	Points											Ave- rage	q	rank
		0	1	2	3	4	5	6	7	8	9	10			
C1	Building an effective organization	3	1	1	1	1	0	1	4	6	4	15	7.51	0.0868	4.5
C2	Team building	1	0	1	0	3	1	5	4	6	7	9	7.51	0.0868	4.5
C3	Coaching	3	4	1	1	3	2	4	1	8	4	6	6.00	0.0693	11
C4	Delegating	3	3	2	1	1	5	2	4	8	5	3	5.89	0.0681	12
C5	Management control	2	0	1	2	1	4	4	7	7	4	5	6.68	0.0771	9
C6	Motivating	3	0	1	0	0	4	5	6	8	6	4	6.81	0.0787	8
C7	Strategic thinking	1	0	0	1	2	0	2	3	6	7	15	8.24	0.0952	3
C8	Courage management	4	1	1	1	2	4	2	3	7	7	5	6.38	0.0737	10
C9	Change management	1	2	4	0	0	2	1	5	9	7	6	6.92	0.0799	7
C10	Organising	0	0	0	0	2	0	1	2	7	11	14	8.73	0.1008	1
C11	Scheduling	0	0	0	1	0	1	2	3	7	8	15	8.62	0.0996	2
C12	Leadership	1	0	2	2	2	2	2	2	9	7	8	7.27	0.0840	6
Sum												86.57	1.00		

*Q13 The importance of professional competence on your workplace*

	Criteria	Points											Ave- rage	q	rank
		0	1	2	3	4	5	6	7	8	9	10			
C1	Professional knowledge in construction	4	0	0	0	0	0	3	2	7	5	16	7.92	0.1553	2
C2	IT skills	1	0	1	1	2	5	3	7	9	7	1	6.76	0.1325	3
C3	Willingness to learn	0	0	0	0	1	1	4	5	9	9	8	8.14	0.1595	1
C4	Project management according to FIDIC	5	2	3	1	4	4	4	3	5	3	3	5.11	0.1002	7
C5	Process Management by PMBoK	12	1	2	2	0	5	3	5	3	2	2	4.08	0.0800	8
C6	Quality, health, safety and environment management	2	1	0	1	0	2	10	5	10	2	4	6.68	0.1309	4
C7	Real Estate Management	7	1	0	4	1	6	3	3	6	3	3	5.16	0.1012	6
C8	Knowledge of terminology in foreign languages	3	0	0	0	6	5	1	8	8	4	2	6.24	0.1224	5
C9	Other .....	33	0	0	0	0	0	1	0	1	0	2	0.92	0.0180	9
Sum												51.00	1.00		