

# SUCCESS FACTORS IN PROJECT MANAGEMENT ON THE EXAMPLE OF A SELECTED CONSTRUCTION INDUSTRY ENTERPRISE

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**Introduction/background:** The success of project management depends on a number of factors, and identifying and addressing them in the project management process increases the chance of success. New industrial, residential, or road construction projects are driving the growth of the construction industry. Construction projects are associated not only with the creation of new facilities and expansion of infrastructure, but also with the modernization of existing facilities, and their implementation takes place in a changing and turbulent environment. The above makes it important, especially in times of crisis and uncertainty, to identify factors associated with achieving success when managing these projects.

**Aim of the paper:** Identification and analysis of key success factors in project management in a selected construction company.

**Materials and methods:** To identify and analyse key success factors in construction industry project management, a diagnostic survey was conducted using a survey questionnaire. The survey was conducted among project team members working on construction industry projects in the selected entity.

**Results and conclusions:** Success factors do not represent a universal set that will contribute to the success of every implemented project. On the basis of the empirical research carried out, a list of key success factors in construction industry project management was created, i.e. those factors that contribute most to success in this type of project. Furthermore, on the basis of the empirical research carried out, recommendations were developed for the management of projects in the selected entity, with particular attention paid to identified factors.

**Keywords:** success factors, project management, construction industry.

**Category of the paper:** Research paper.

## 1. Introduction

Construction projects are undertakings commissioned by an external or internal investor. The environment of construction project implementation is turbulent and changeable (high level of risk, interaction of influential stakeholders, uncertainty of operating conditions) (Głodziński, 2017). The goal of the implementation of a construction project is the fulfilment of human interests, and the project product itself, i.e. the facility/building, is only a tool that helps to achieve the goal (Winiarski, 2019).

The growth of the construction industry is resulting in a number of new developments. Various types of road, industrial or residential developments are being realised and continue to be in great demand. Not only are new facilities being built and infrastructure being expanded, but existing facilities are also being modernised. Construction industry projects have a number of specific features, which include (Głodziński, 2017): (1) specific legal requirements (e.g. construction permit), (2) large variety and complexity of works, which results in the need for an appropriate schedule, proper coordination and clear documentation of already performed activities, (3) execution of works in a specific place, and thus the organisation of construction facilities and resources and the identification of the site looking at logistical or social aspects, (4) a large share of subcontractors in the total works, which is caused by the specificity of construction works and an attempt to streamline the execution of performed tasks, (5) financial settlements (investor - contractor) dependent on the level of progress of the construction works, (6) possibility of the emergence of risks, uncertainties as well as opportunities due to the long deadline for implementation and the high value of the project, (7) implementation of activities dependent on the prevailing weather conditions, (8) the need to have civil liability insurance for engineers with construction qualifications and the use of contract insurance.

Generally, projects are implemented to meet requirements, where, in relation to construction projects, these requirements relate to technical, economic, organisational and social aspects. Technical requirements are determined by the documentation and the needs of the client, economic ones relate to the costs of production and operation, organisational ones are related to the schedule, while social ones have to do with the reception of the investment among the community (Głodziński, 2017).

The above makes it important, especially in times of crisis and uncertainty, to identify the factors contributing to success when managing these projects, so the aim of this paper is to identify and analyse the key success factors in project management in a construction company. The research was conducted among project team members involved in the implementation of selected projects.

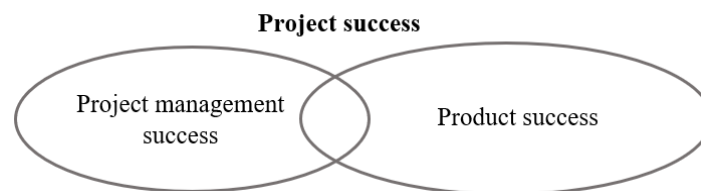
## 2. Theoretical background

Following Levy (2006), the management of construction projects can be divided into four parts: (1) construction engineering - the appropriate technique for the incorporation of materials, systems, etc., and the selection of appropriate technology for this purpose; (2) construction process management - establishing an efficient way of carrying out the construction process, including the appropriate preparation of the schedule and controlling the progress of the work, the flow of materials and equipment needed; (3) human resource management - exercising control over human resources so that the work can be carried out efficiently; (4) financial management - controlling the costs, cash flow and financing of the project. There are also principles that the project manager should implement. These include: completing the project on time, not exceeding the budget, achieving the planned quality, maintaining the contractor's professional relationship with designers and subcontractors, completing the project without unresolved problems, the contractor-client relationship not damaged. The aforementioned principles contribute to the successful completion of the project, i.e. its successful execution.

Success is an ambiguous and difficult concept to define. According to the simplest definition provided by the PWN Polish Language Dictionary, success is "the successful outcome of an undertaking, the achievement of an intended goal". When considering success in the context of project implementation, in turn, the literature often refers to the project budget and implementation time, but it is a construct that is very hard to define (Ika, 2009). Following Ika (2009), the definition of success is ambiguous, heterogeneous and multidimensional and context-dependent. Many authors refer to the following as synonyms for success: effectiveness - doing the right things (maximising efficiency with increased inputs) and efficiency - doing things the right way (achieving project goals), which according to Ika (2009) certainly corresponds to project success.

The literature, treating project success, most often cites the project triangle (iron triangle), which is composed of three parameters: cost, time, scope, supplemented interchangeably by quality or efficiency (Urbanelis, 2014). Most authors believe that the listed parameters cannot be exceeded for a project to be considered a success, and the indicated iron triangle according to Ika (2009) between 1960 and 1980 was valid as a criterion for achieving success in a project. In the following years, i.e. 1980-2000, benefits for the organisation, customer satisfaction, benefits for the stakeholders and the project team and end-user satisfaction were added to the iron triangle. Whereas in the 21st century, the above were supplemented by the organisation's strategic goals and business success and a symbolic success/failure assessment (Ika, 2009). According to the PMBOK Guide (2013), project success is defined by the quality of the product and project, completion on time, within budget and customer satisfaction.

In the literature, a distinction can be found between project success and project management success. According to Radujkovic and Sjekavic (2017), project management success is associated with the traditional approach to project success - time, cost, quality (short-term goal orientation), while project success is associated with the achievement of overall project goals (long-term goal orientation). This approach indicates that it is possible to achieve project success with inadequate project management and it is possible to achieve project management success without achieving project success (Radujkovic, Sjekavica, 2017). However, it is important to emphasise that due to the strong mutual relationship, it is difficult to completely differentiate the notion of project success and project management success. Correct project management can significantly increase the chance of project success. Project management success is one element of project success, and without it there is little chance of project success (Radujkovic, Sjekavica, 2017). Similarly, Kapusta (2013) argues, writing that project management aims to increase the probability of project success. Following Sudhakar (2016), project success occurs when there is project management success and project product success (Figure 1).



**Figure 1.** Project success.

Source: Sudhakar G.P. (2016). Understanding the Meaning of "Project Success". *Binus Business Review*, 7(2), p. 164.

The literature also contains items where the authors attempt to discern the project success factors of the construction industry. Research on these factors has been carried out in India, among others, and the aim of the study was to identify those factors that are most important for project management success in the construction industry. Aneesha and Haridharan (2017) distinguished the following factors: management support, skilled project team, problem-solving skills, realistic estimation of cost and duration of tasks, information and communication, competence of the project manager, technical skills of the project manager, commitment, sound leadership, experience in practising project management tools, use of appropriate technology.

Following Chan et al. (2004), the success of a construction project is made up of factors falling into five categories: project management activities, project procedures, external environment, project factors and human factors. Thus, project management factors include: development of an appropriate organisational structure, communication system, control, feedback, scheduling, control of subcontractor work, introduction of an effective safety programme, introduction of a quality assurance programme and general management activities (Chan et al., 2004). Factors belonging to the project procedures include the bidding rules and the tendering procedure. Factors belonging to the external environment include: economic

environment, social environment, political environment, physical environment, advanced technology. Design factors consist of the type, size, complexity and nature of the project (Chan et al., 2004). Human factors, which include: client's emphasis on low construction cost, on high quality, on rapid delivery; size of the organisation, source of client funds (private, public); client's ability to make decisions, set rules; client's participation in the design of the facility; project manager's possession of planning, organising, coordinating, motivating skills; project manager's experience; team's technical skills; project manager's early involvement; project manager's ability to deal with changes in the project plan, relationships with team members, project manager's drive to meet the design triangle; project unit's support and entrustment of resources (Chan et al., 2004).

Głodziński E. (2017), on the other hand, lists the factors that influence the efficiency of a construction project, adding that they are not different from the critical success factors of project management defined in the literature. These factors include, but are not limited to: the quality of risk management, i.e. the detection of opportunities and threats, and stimulus and preventive actions; favourable contractual provisions towards the contractor, which define the contractor's responsibilities, how changes in scope are to be communicated, or the resolution of disputes; the effectiveness of the project team, construction manager and contract in activities, i.e. adequate planning, coordination of implementation, etc.; meeting the deadlines in the schedule agreed with the client; the quality of the budget adopted from the bidding phase, i.e. no errors, sound assumptions, provision for risks; the quality of the supply and procurement process, i.e. contracts with such subcontractors and material suppliers who can meet them. In addition, complementing the key factors for the success of a construction project are: the contractual provisions between the client and the contractor; the quality of the budget set during the bidding and contract signing phase; and the quality of the procurement ordering process (Głodziński, 2017). Gunduz and Yahya (2018), based on a review of the literature as well as their research, attempted to define the most relevant success factors in construction project management, identifying five factors that should be given special attention to increase the chance of project success. These include: technical capabilities of the company - whether the technical skills belong to the client or the contractor, they lead to the success of the project; definition of the scope and type of work - unambiguous, clearly defined tasks to be performed by the different parties to the project, which will avoid disputes and inaccuracies, which could lead to delays in implementation or increased costs; control system - a better controlled project will lead to success; it is important to identify what is not going according to plan and assess what can be done to remedy this; effective site management - having the right people on site will be key to timely completion; they are essential to the project; the skills and dedication of the project manager – he/she controls all aspects of the project and through his/her experience and dedication this may lead to the success of the project.

Herath and Chong (2021) allocated success factors in construction industry project management to five categories: human resource management, construction project, project management effectiveness, project stakeholder management and project budget. Factors relating to human resource management include: commitment, motivation, communication and support from senior management, availability of technology, staff competence and existing experience and skills and familiarity with the project environment, staff skills development and training, clear definition of objectives (Herath, Chong, 2021). The second group of factors relates to the construction project. This is a very important group because if the construction design is unreliably done it takes a lot of changes in the execution phase to be able to do the building properly, which means a lot of delays and additional costs. Success factors include: effective communication and coordination, a skilled project preparation team paying attention to the environment and stakeholder requirements, and sufficient time to prepare a complete project (Herath, Chong, 2021). Effective project management involves control and coordination by the project team, especially the project manager, who should have appropriate skills and experience, including technical skills. It is said that it is the project manager who determines success. Among the tasks of the project manager are: participation in the preparation phase of the construction project, communication and stakeholder management, management and control of all project activities (Herath, Chong, 2021). The next group of factors relates to stakeholder management. Success factors associated with this group include: stakeholder attitude, needs, involvement, influence, interest and satisfaction, trust in the project manager and sound communication (Herath, Chong, 2021). In contrast, factors related to the project budget include: adequate cost estimation, consideration of contingencies (taking into account project parameters, environment, historical data), and managing, controlling and maintaining the budget as originally intended (Herath, Chong, 2021).

### **3. Methodology of research**

The subject chosen for the empirical research is a company that has been operating in the construction industry, nationwide, for more than 10 years. The company's activities are focused on the execution of industrial flooring and exterior paving, and the spectrum of its activities is wide. The investments located all over Poland, which consequently leads to constant change in the place of work of employed workers and supervision. The company carries out projects for leaders in the construction market, as well as working with smaller general contractors. In addition to working with general contractors, the company also carries out tasks directly for investors and private individuals.

In order to identify and analyse the key success factors in project management in a construction company, it was decided to carry out a diagnostic survey using a survey questionnaire. The respondents of the surveys carried out were twenty members of project teams who were involved in the implementation of already completed projects. The completed projects are:

Project 1, which concerned the implementation of industrial flooring in production and storage halls. This was a large-scale investment (with an area of more than 15,000 m<sup>2</sup>) located in the south of Poland, and the analysed company carried out work on this facility on behalf of a general contractor.

Project 2, which involved the realisation of floors in a shopping mall located in northern Poland. The project was commissioned by the project's general contractor. Floors in tertiary and retail facilities do not have specific requirements in terms of slab bearing capacity, and the focus is on the requirements of the individual tenants of the facility.

Project 3, which concerned the construction of an industrial floor in the warehouse and production halls and concrete paving with a total area of over 20,000 m<sup>2</sup>.

Project 4, which concerned the construction of an outdoor pavement in an area of special interest. The execution of projects of this type differs from the others, as these projects are characterised by particular thoroughness in the planning of the work, as well as the execution itself and the quality of the work carried out.

A group of twenty project team members were asked to provide answers regarding achieving success in the implementation of selected projects. It was assumed that project success in the construction industry is primarily about executing a project in such a way that basic parameters such as cost, time and scope are not exceeded and the intended project goals are achieved. The questionnaire, which was the tool in the empirical research conducted, consisted of nine questions. The survey was conducted anonymously in a face-to-face format. Twenty questionnaires were distributed to respondents, of which twenty completely and correctly completed questionnaires were returned. The respondents have extensive experience of projects in the company under analysis, as well as in other companies in the construction industry with which they have worked to date.

The purpose of the survey was to select from among the project influencing factors those that are key to success in construction industry project management. The success factors listed in the survey were prepared on the basis of the literature analysis. In order to organise them, they were divided into four groups, which were named: general, project manager, project team and technical. The general group included: factor 1 - well-defined project objective; factor 2 - clearly defined type of work and scope of tasks; factor 3 - knowledge and consideration of client requirements; factor 4 - detailed development and adherence to the schedule; factor 5 - realistic planning of the duration of the work; factor 6 - ensuring that deadlines are met; factor 7 - reliable cost estimation and budget execution; factor 8 - consideration of unforeseen expenses in the budget; factor 9 - financial security of the contract (e.g. by making use of insurance); factor 10

- ensuring that the project team is able to meet the deadlines. factor 10 - sound budget management; factor 11 - choosing the right collaborators (suppliers, subcontractors, etc.); factor 12 - appropriate terms and conditions; factor 12 - appropriate contractual conditions with the client; factor 13 - appropriate contractual conditions with subcontractors and suppliers, etc.; factor 14 - duly estimated resource requirements (materials, people, equipment); factor 15 - adequate allocation and availability of resources; factor 16 - coordination during project implementation; factor 17 - control during each phase of the project; factor 18 - stakeholder management (identification, communication, nurturing relationships); factor 19 - project risk management; factor 20 - use of IT tools to support project implementation; factor 21 - establishment of an adequate organisational structure; factor 22 - support of the project by top management. In the second group, the manager included the following factors: factor 1 - experience in project management; factor 2 - authority of the project manager; factor 3 - sound leadership; factor 4 - professionalism; factor 5 - ability to make decisions; factor 6 - ability to coordinate tasks; factor 7 - ability to manage change; factor 8 - ability to communicate; factor 9 - flexibility; factor 10 - ability to work as a team; factor 11 - ability to negotiate; factor 12 - technical expertise; factor 13 - exercising sound control; factor 14 - involvement of the manager at an early stage of the project; factor 15 - one manager for the duration of the whole project; factor 16 - good relations with the project team. The third group of questions related to the project team. This group included factors such as: factor 1 - experience possessed; factor 2 - technical knowledge possessed; factor 3 - adequate qualifications of the team; factor 4 - due selection of team members for particular tasks; factor 5 - ability to deal with changes in the project; factor 6 - division of responsibilities and tasks; factor 7 - productivity; factor 8 - constancy in the composition of the project team; factor 9 - working atmosphere; factor 10 - ability to work as a team, adequate cooperation; factor 11 - taking care of the project team (extending knowledge and skills, development); factor 12 - due motivation; factor 13 - communication within the team. The last group, relating to technical aspects, included the following factors: factor 1 - appropriate selection of the entity preparing the construction project; factor 2 - adequate time for the preparation of the construction project; factor 3 - effective communication and coordination in the preparation phase of the construction project; factor 4 - consideration of the requirements set in the construction project; factor 5 - participation of the client in the design phase; factor 6 - quality of the design documentation; factor 7 - knowledge of the technology; factor 8 - ability to select the appropriate technology for the specific project task; factor 9 - technical capabilities of the company; factor 10 - experience of the construction staff; factor 11 - adequate supervision on site; factor 12 - quality of the construction work; factor 13 - appropriate equipment.

The questions asked people to indicate to what extent a factor influences the success of a project. A 5-point Likert scale was used, where: 1 - very low impact, 2 - low impact, 3 - medium impact, 4 - high impact and 5 - key factor. Only those factors marked by respondents as having a high impact on the success of the project (rating 4) and, as key success factors (rating 5) were included in the survey results.

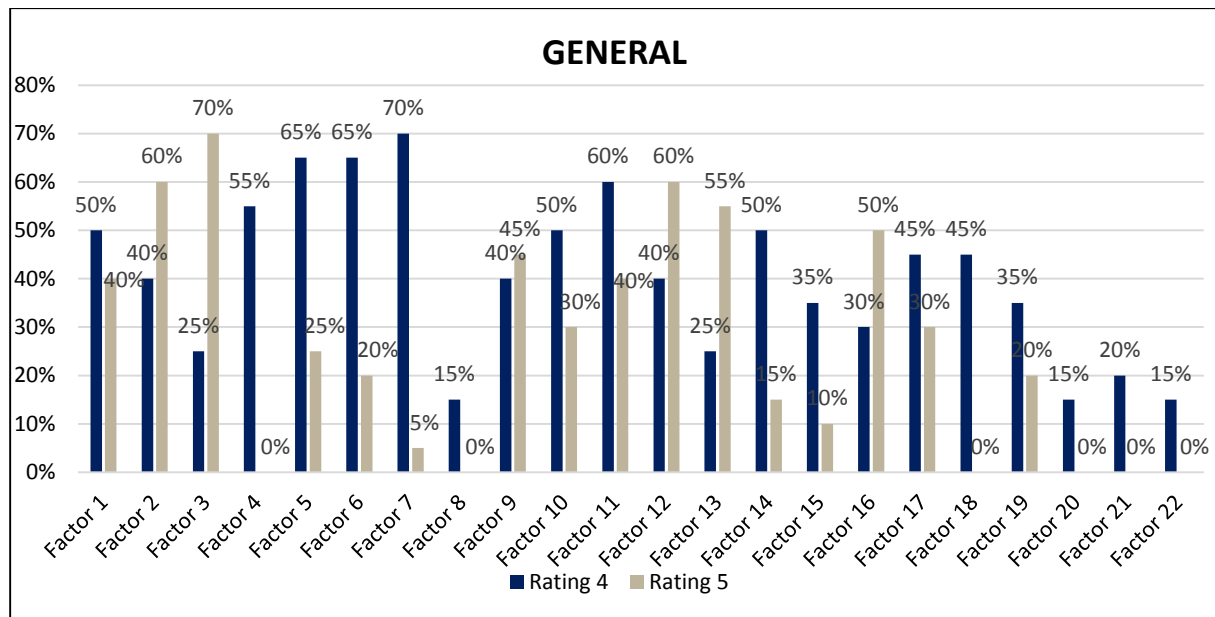


The survey included questions on gender, education, experience in the construction industry and length of service in the company under study in the metrics section. Thus, 60% of the respondents in the survey were men, while 40% were women. Although more and more women are involved in the construction industry, men are still the more numerous group employed in the company under study. Furthermore, among the respondents, 85% were over 30 years of age, of which 60% are between 30 and 40 years of age and 25% are over 45 years of age. Only 15% of the respondents were in the 18-29 age group. Among the respondents, 75% are tertiary educated. Respondents with secondary and intermediate technical education comprise a group of 25%, of which 20% have secondary technical education. Respondents were asked about their experience in the construction industry. The empirical results show that only 15% of the respondents have experience of less than 5 years. The largest group of respondents, comprising 55% of all respondents, are those working in the construction industry for between 6 and 10 years. Among the respondents there are also people (30%) who have experience in the construction industry of more than 10 years. Additionally, respondents were asked about their seniority in the entity under analysis. Less than 5 years of experience was reported by 15% of the respondents. The highest percentage of respondents (60%) have been working in the analysed company for 6-10 years. Members of the project team who have been working in the analysed entity for more than 10 years also took part in the survey.

#### **4. Results**

Success factors in construction industry projects were divided into four groups: general, project manager, project team and technical. Factors that were identified as those with very low impact, low impact and medium impact were omitted from the analysis of the results, as the aim of the research is to find the factors with the greatest impact on project management success.

The first group is the factors belonging to the 'General' group. The empirical results for this group are presented in figure 2.

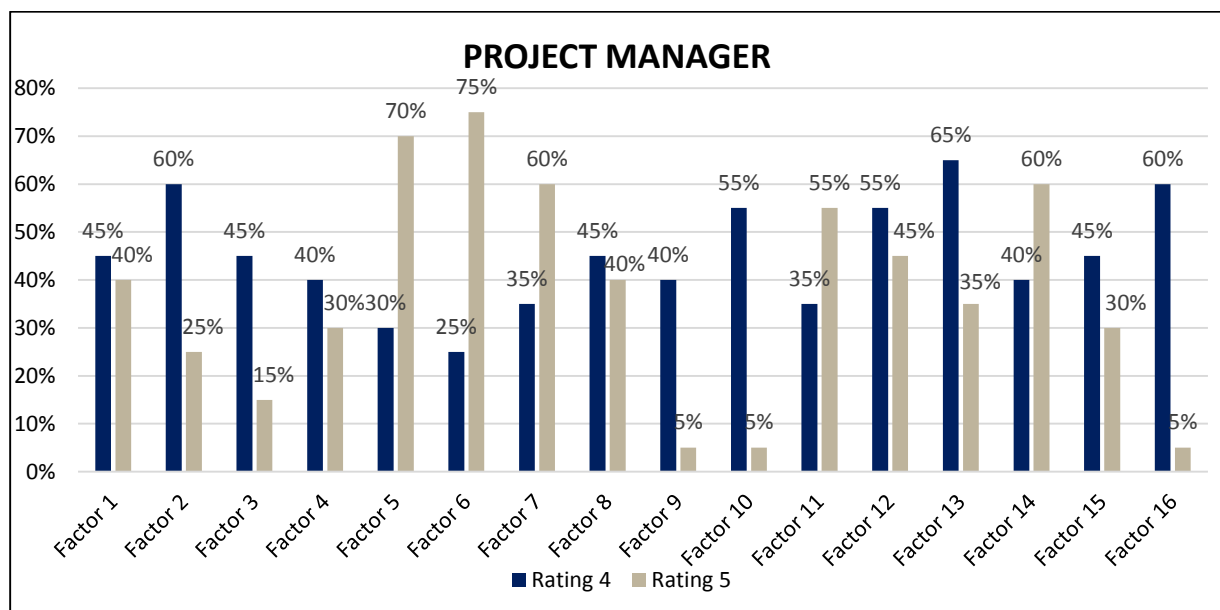


**Figure 2.** Success factors in the "general" group.

Source: own work.

When analysing the results, it can be concluded that the respondents consider the following factors to be key: factor 2 - clearly defined type of work and scope of tasks (60%), factor 3 - knowledge and consideration of the client's requirements (70%), factor 9 - financial security of the contract (45%), factor 12 - appropriate contractual conditions with the client (60%), factor 13 - appropriate contractual conditions with subcontractors and suppliers, etc. (55%), and factor 14 - coordination during project implementation (50%). (55%), factor 16 - coordination during project implementation (50%).

The second group of questions concerned the project manager. The empirical results for this group are presented in figure 3.



**Figure 3.** Success factors in the "project manager" group

Source: own work.

The results of the survey allow us to conclude that, according to the respondents, the key success factors for project management in this group are: factor 5 - ability to make decisions (70%), factor 6 - ability to coordinate tasks (75%), factor 7 - ability to manage change (60%), factor 11 - ability to negotiate (55%), factor 14 - involvement of the manager at an early stage of the project (60%).

The next question related to project team factors. The empirical results for this group are presented in figure 4.

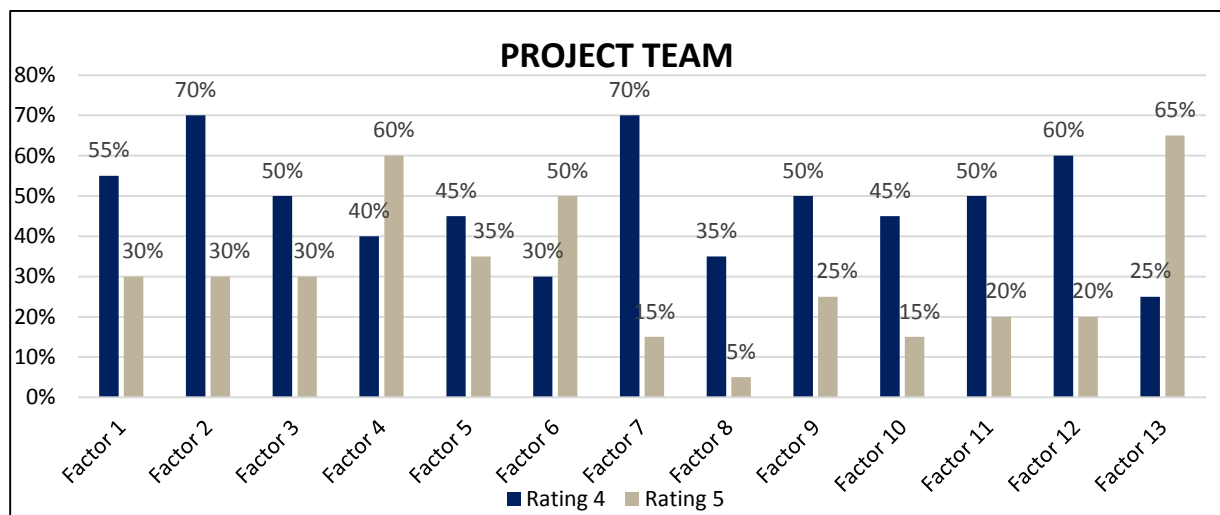


Figure 4. Success factors in the "project team" group.

Source: own work.

The respondents considered the following as key in this group: factor 4 - due selection of team members for particular tasks (60%), factor 6 - division of responsibilities and tasks (50%), factor 13 - communication in the team (65%).

The last group of factors analysed were technical factors. The empirical results for this group are presented in figure 5.

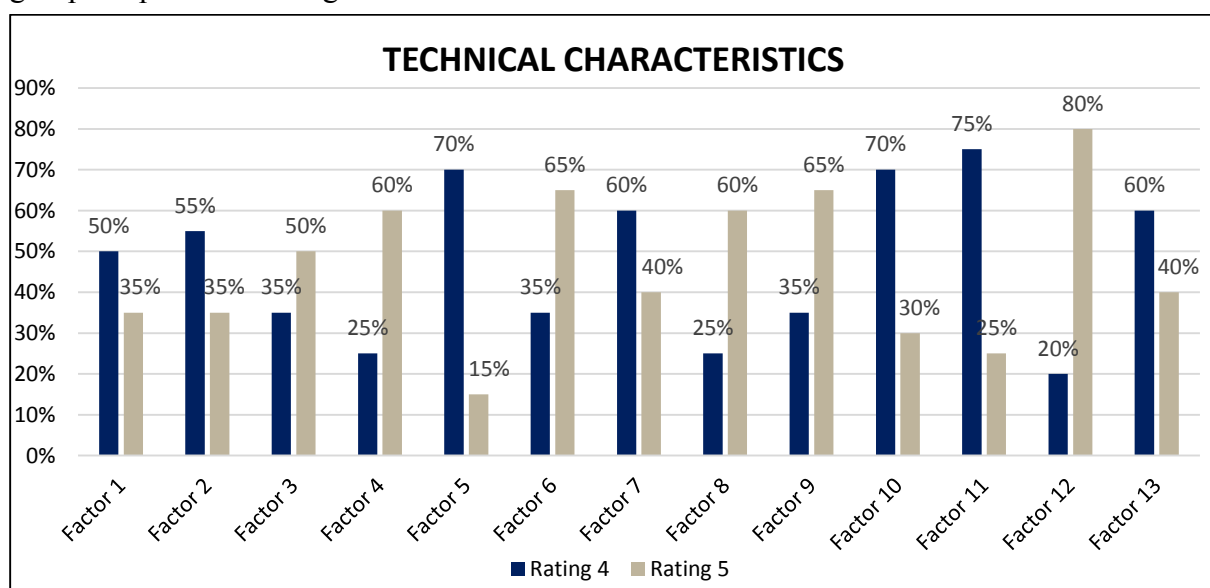


Figure 5. Success factors in the "technical" group.

Source: own work.

Analysing the respondents' answers to the question on technical factors (presented in Figure 5), it can be concluded that the key factors in this group include: factor 3 - effective communication and coordination in the preparation phase of the construction project (50%), factor 4 - consideration of the requirements set in the construction project (60%), factor 6 - quality of the design documentation (65%), factor 8 - ability to select the right technology for the specific design task (60%), factor 9 - technical capabilities of the company (65%), factor 12 - quality of the construction work (80%).

To summarise the empirical findings, the key success factors for project management in the construction industry include:

1. general factors: factor 2 - clearly defined type of work and scope of tasks (60%), factor 3 - knowledge of and consideration for the client's requirements (70%), factor 9 - financial security for the contract (45%), factor 12 - appropriate contractual conditions with the client (60%), factor 13 - appropriate contractual conditions with subcontractors and suppliers, etc. (55%), factor 14 - coordination during project implementation (50%), and factor 15 - coordination during project implementation (50%). (55%), factor 16 - coordination during project implementation (50%);
2. project manager factors: factor 5 - ability to make decisions (70%), factor 6 - ability to coordinate tasks (75%), factor 7 - ability to manage change (60%), factor 11 - ability to negotiate (55%), factor 14 - involvement of the manager at an early stage of the project (60%);
3. project team factors: factor 4 - due selection of team members for specific tasks (60%), factor 6 - division of responsibilities and tasks within the project team (50%), factor 13 - communication within the team (65%);
4. technical factors: factor 3 - effective communication and coordination in the preparation phase of the construction project (50%), factor 4 - incorporation of the requirements in the construction project (60%), factor 6 - quality of the design documentation (65%), factor 8 - ability to select the right technology for the specific design task (60%), factor 9 - technical capabilities of the company (65%), factor 12 - quality of the construction work (80%).

Analysing the results of the research, out of all the items selected for the developed questionnaire survey, out of all four groups of factors ("general", "project manager", "project team", "technical"), the factors having a very low impact, a low impact and a medium impact on the success of project management (marked by the respondents in the questionnaire on a 5-point scale with the digits 1, 2, 3, respectively) constitute only 14% of all the factors. The factors identified in the empirical research as having a high impact on project success (marked by the survey participants in the questionnaire on a 5-point scale with the number 4) account for as much as 55% of all factors. The remainder of the factors, i.e. the factors identified by respondents as key factors for project success, are a group of 31% of all factors.

Factors that were assessed by the respondents in the empirical research carried out as having a negligible relationship with achieving success in project management of the construction industry and were thus omitted from the presented research results were:

1. general factors: factor 8 - inclusion of contingencies in the budget, factor 15 - appropriate allocation and availability of resources, factor 18 - stakeholder management, factor 19 - project risk management, factor 20 - use of IT tools to support project implementation, factor 21 - setting up an appropriate organisational structure, factor 22 - support of the project by top management;
2. project manager factors: factor 9 - flexibility;
3. project team factors: factor 8 - constancy in the composition of the project team;
4. technical factors: none.

## **5. Discussion and conclusion**

The aim of this paper was to identify and analyse the key success factors for project management in a construction company. On the basis of the empirical research carried out, the following conclusions can be drawn:

1. Project success is a difficult concept to define, but many authors begin their consideration of success with an iron triangle comprising basic parameters such as cost, time, scope (interchangeably quality, efficiency).
2. The success of a project consists of many different factors, examples of which, described by many authors, have been mentioned in this paper and served as the basis for the development of the questionnaire, the tool used for the empirical research in the company analysed.
3. Due to the diversity of ongoing projects (e.g. by different players in different industries), there are different success factors. Success factors do not represent a universal set that will contribute to the success of every implemented project.
4. On the basis of the empirical research carried out, a list of key success factors in construction industry project management, i.e. those with the greatest impact on the success of this type of project, was created. These include:
  - clearly defined type of work and scope of tasks,
  - knowledge and consideration of customer requirements,
  - financial security of the contract,
  - relevant contractual terms and conditions with the employer,
  - appropriate contractual conditions with subcontractors and suppliers, etc.,
  - coordination during project implementation,
  - having decision-making skills by the project manager,

- having the ability to coordinate tasks by the project manager,
  - having the project manager's change management skills,
  - having the project manager's negotiating skills,
  - involvement of the manager at an early stage of the project,
  - due selection of team members for individual tasks,
  - division of responsibilities and tasks within the project team,
  - team communication,
  - effective communication and coordination during the construction project preparation phase,
  - inclusion of the requirements in the construction project,
  - quality of the project documentation,
  - ability to select the appropriate technology for a specific project task,
  - technical capacity of the company,
  - quality of construction work.
5. Key success factors in construction industry project management were identified and analysed with the aim of highlighting them during project activities and thus increasing the chances of success during construction projects.

Furthermore, on the basis of the empirical research carried out, when managing a construction industry project, it is proposed to:

1. Pay particular attention to defining in a clear and lucid manner the type and scope of work to be carried out.
2. Ensure appropriate contract provisions and terms, e.g. with the employer, suppliers, subcontractors, and provide adequate financial security for the contract.
3. Select a qualified, experienced project manager involved in the project at an early stage.
4. Know and take into account the client's requirements at every stage of the project (including during the creation of the construction, detailed design).
5. Properly coordinate work during project implementation.
6. Appropriately select project team members for individual tasks, together with the division of responsibility for each task and attention to communication within the team.
7. Ensure that the company has the right technical capacity and the ability to select the right technology for the specific project task.
8. Take care of the quality of the construction work performed and the quality of the project documentation (including effective communication and coordination during the preparation phase of the construction, detailed design).

In summary, the identification of key success factors in the management of construction industry projects is aimed at listing and highlighting certain issues, features or events that are very relevant and significant to the implementation of this type of project. The inclusion of these factors in the project management process is intended to increase the chance of success. As mentioned earlier, there is no universal list or set of success factors to fit every project

implementation. The developed and presented set of key success factors is dedicated to entities operating in the construction industry. On the basis of the analyses carried out, it is proposed to use the developed list of key success factors for a project or, on the basis of the experience and observations, to modify it to fit a given project set in specific conditions and specific realities.

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## References

1. Aneesha, K., Haridharan, M.K. (2017). *Ranking the Project Management Success Factors for Construction Project in South India*. Proceedings from IOP Conference Series: Earth and Environmental Science.
2. Chan, A.P.C., Scott, D., Chan, A.P.L. (2004). Factors Affecting the Success of a Construction Project. *Journal of Construction Engineering and Management*, January/February, pp. 153-155.
3. Głodziński, E. (2017). *Efektywność w zarządzaniu projektami budowlanymi. Perspektywa wykonawcy*. Warszawa: Oficyna Wydawnicza Politechniki Warszawskiej, pp. 12-14.
4. Gunduz, M, Yahya, A.M.A. (2018). Analysis of project success factors in construction industry. *Technological and Economic Development of Economy*, 24(1), pp. 76-77.
5. Herath, S., Chong, S.C. (2021). Key Components and Critical Success Factors for Project Management Success: A Literature Review. *Operations and supply chain management*, 14(4), pp. 431-443.
6. Ika, L. (2009). Project Success as a Topic in Project Management Journals. *Project Management Journal*, Vol. 40(4), December.
7. Kapusta, M. (2013). *Zarządzanie projektami krok po kroku. Seria: samo sedno*. Edgard.
8. Levy, S.M. (2006). *Project Management in Construction*. McGraw-Hill.
9. Project Management Institute (2013). *A Guide to the Project Management Body of Knowledge (PMBOK Guide)*. USA: PMI.
10. Radujković, M., Sjekavica, M. (2017). *Project management Success Factors*. Creative Construction Conference 2017, CCC 2017, Chorwacja.

11. Słownik Języka Polskiego PWN, <https://sjp.pwn.pl/sjp/sukces;2576536>, 1.02.2022.
12. Sudhakar, G.P. (2016). Understanding the Meaning of “Project Success”. *Binus Business Review*, 7(2).
13. Urbanelis, R. (2014). Sukces projektu: kryteria pomiaru, definicje. *Gospodarka Materialowa i Logistyka, nr 1*. PWE, pp. 18-26.
14. Winiarski, M. (2019). Zarządzanie projektem w branży budowlanej. *Zeszyty Naukowe Politechniki Częstochowskiej, Zarządzanie, Nr 33*, p. 348.