

Core Competencies Required for Construction Project Success: The Project Management Angle

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ABSTRACT

Projects are designed to accomplish a specific goal within a predetermined amount of time, but not every project meets its goals within the allotted time frame. In order for a construction project to be executed successfully, a competent team has to work closely together and implement project goals, and a project manager usually leads the team. For any project to succeed, every stakeholder, including the sponsor and implementation team, is responsible for its completion. However, the project manager has a vital role to play. This study, therefore, seeks to investigate the core competencies necessary for successfully completing a construction project. The study, conducted in Gauteng Province, South Africa, surveyed construction professionals. Survey results were used to develop a relative importance index. Findings from the survey revealed that innovative thinking, problem-solving skills, dependability, emotional maturity and control, confidence are vital traits required from project stakeholders to successfully complete projects. The study classified the identified competencies into two categories relating to personality traits and managerial traits. It was, therefore, concluded specific competencies must be inherent in project team members and management for a project to reach successful completion.

Keywords: Project success competencies, Critical success factors, Construction process, Project team competencies, Project team selection

STUDY BACKGROUND

Each phase of a project is distinct and requires different skills and competencies to be successfully completed (Anderson et al., 2006). As Havila, Medlin and Salmi (2013) rightly pointed out, project managers are the backbone of every project. It further highlighted that not all projects are completed on time or accomplish the predetermined objectives. Project managers have a standard procedure that was decided on during the initiation stage that the project should take. However, irrespective of the kind of project, or the predetermined procedure, they require specific managerial skills and competencies to complete the project successfully. The project management team must complete a number of predetermined processes in the course of a project

(Akinshipe, et al., 2019). This study, therefore, seeks to investigate the core competencies necessary for successfully completing a construction project.

COMPETENCY DIMENSIONS FOR EFFECTIVE CONSTRUCTION PROJECT MANAGEMENT

Vincent (2008) describes competence as the degree to which a person is adequate or possesses specific abilities and traits. A person's competence is a measure of how much they know and how well they can apply it. A way to determine whether an individual has the necessary knowledge, skills, and experience is to conduct an interview. Construction industry competencies are not solely dependent on management; other personal and behavioural traits make part of these competencies, according to the Pye Tait firm (2014).

Figure 1 displays the components of competencies as depicted by Pye Tait firm (2014). Individual components expressed consist of skills related to an individual's job, knowledge and behaviours such as risk awareness, personal attributes and communication skills. As depicted in the chart, certain competency components are related to management, such as policies implementation and effective communication, although they can be relevant to everyone in an organisation.

In delivering their essential services within the construction industry, Managers must master the specialised two facets of Project Management. These facets are described by Dinsmore and Cabanis-Brewin (2006) as the 'art' and 'science' of 'project management. Only by combining the two areas of competence can efficient and effective management be delivered for construction projects. The art of project management includes trust, values, integrity, effective communication, sound decision making, staff development, sound business judgements, problem-solving, conflict management, flexibility, training, mentoring, consultations, good business judgements, and managing change and expectations. While the science of project management includes risk management, proper planning, resource estimation and management, status reporting, financial planning, and quality control (Dinsmore and Cabanis-Brewin, 2006). Hence competence in construction project management can be demonstrated in four dimensions knowledge, skills, personal traits, and experience (Anderson et al., 2006).

Pathirage, Amaratunga and Haigh (2008) explain that knowledge can be divided into personal knowledge, knowledge shared with others, practical, experiential, and theoretical knowledge. For all project managers, knowledge does not just entail planning and monitoring projects; they have to be knowledgeable in their specific field, engineering, construction, or marketing. They must put their legal, financial, strategic resources and technological expertise, as well as business acumen in their specific field, to good use. Project Management, especially in construction, requires specific analytic, accounting, and quality control knowledge to successfully complete projects (Gustafsson and Yadav, 2013).

As a professional practice of project managers, communication requires appropriate rules and tools to ensure that the information being conveyed is as useful as possible. Effective communication skills are important

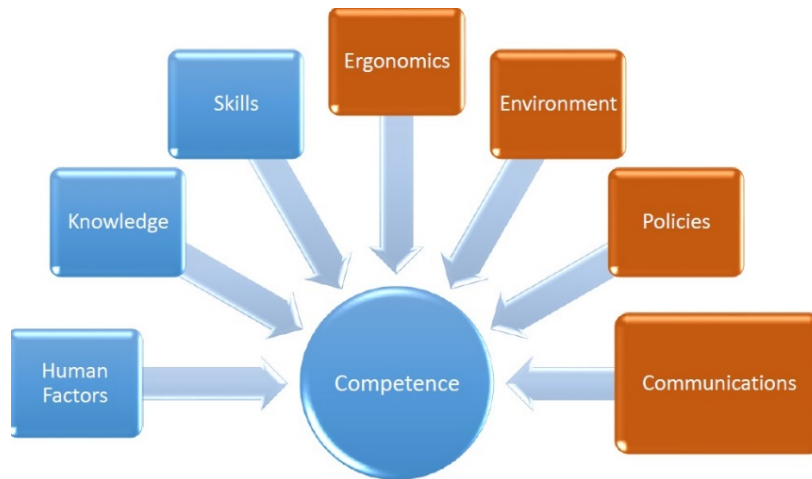


Figure 1: Components of competencies (adapted from Pye Tait firm, 2014).

because information flow is an important activity that leads to project success (Anyanwu, 2013). All stakeholders must understand all information and instructions about the project. Human interaction can make or break a construction project if communication is ineffective (Goldsmith and Newton, 2011). Misunderstandings of conveyed information may often lead to quality issues which is usually a strong part of project objectives. Hence lack of or even inadequacy in communication flow can lead to project failure (Schultz, 2012).

Furthermore, frequent miscommunication and inadequate knowledge can be huge sources of conflicts and problems in construction projects. The ability to solve problems is an essential aspect of project management (Anderson et al., 2006). However, When a problem cannot be solved, project stakeholders may have to engage in negotiations to reach an amicable agreement. Hence negotiation is another vital component of project management (Chebet, Rotich and Kurgat, 2015). Since an individual cannot complete a construction project, there is bound to be conflict. Teams of people from different backgrounds, beliefs, and skillsets must work together to meet the project's quality standards while adhering to budget and schedule constraints. However, conflicts will inevitably arise, jeopardising the projects' success (Ogunbayo, 2013). Conflict resolution is a crucial function in project management.

Education and experience are well regarded in every industry for project managers, and the construction industry is no exception. Nkomo and Thwala (2016) described the construction industry as extremely busy with a complicated scope of works. Due to its complexity, project managers need to have the proper education and experience necessary to successfully manage a construction project to completion and fulfil all its objectives (Buvik and Rolfsen, 2015).

Similarly, many personality traits are essential characteristics for project management personnel. Professionalism, enthusiasm, commitment and

determination are characteristics that project managers should possess as they are supposed to be role models. Project managers are supposed to lead the whole project team. Ambitious and confident individuals are most likely to lead projects successfully as they can see decisions through and control arising circumstances (Gustaffson and Yadav, 2013).

According to Poskey (2006), success in a work environment depends highly on the capabilities of the human resources and their interpersonal relationships. Team members are not just chosen based on their qualifications and experience; their “soft” skills, or “transversal competencies,” are also considered. Emotional intelligence and social management skills are also essential components of project management, especially in the construction industry. Construction projects’ complexity and multidisciplinary nature necessitate a high level of emotional intelligence and social skills for a project manager. Managing and satisfying all stakeholders expectations is not an easy task; hence a project manager needs the utmost emotional maturity (Anyanwu, 2013).

In all industries, one characteristic of professionals is to always act with professionalism. Campbell and Taylor (2008) see professionals as trustworthy, competent, respectful, considerate, dependable and committed. Furthermore, professionalism often describes the workplace’s behaviour style, which is influenced by values and professional roles. Sirbegovic (2009) believes that practising professionalism involves punctuality, dressing appropriately, careful consideration of words uttered, offering assistance when required, refraining from gossip, staying positive, acknowledging mistakes, and always being fair to colleagues. Professionalism does not necessarily mean a project manager can successfully get the job done; however, it influences the ability to effectively and efficiently do the work, thereby enhancing project success.

When knowledge has been applied to practice over time, thereby enhancing an individual’s skills, experience is gained. Consequently, experience also increases knowledge and skill (Dinsmore and Cabanis-Brewin, 2006). The more valid experience a project manager possesses, the more efficiency is applied to managing the project.

RESEARCH DESIGN

This study’s theoretical review has extensively discussed how a project manager’s knowledge, skills, experience and personal traits can be beneficial or detrimental to the success of a construction project. This study investigates the core competencies necessary for successfully completing a construction project. This research was streamlined into a descriptive study, and thus, the survey method was deemed appropriate for collecting the primary data. The research adopted a quantitative model, and a five-point Likert scale structured questionnaire was designed and used as the medium of collecting primary data with the sole purpose of achieving the aim of the study. This research was conducted in the Gauteng Province of South Africa through a survey of construction professionals. Data collected and collated from the survey were deemed usable and formed the basis of data analysis for the study. To determine the level of importance of each rated factor, the five-point scale from the

Table 1. Management competencies required for construction project success.

Project management competencies	RII	Std. Deviation	Rank
Innovative thinking	82.20%	0.754	1
Problem-solving skills	81.20%	0.775	2
Dependability	81.20%	0.775	2
Emotional maturity and control	81.00%	0.888	4
Confidence	80.80%	0.793	5
Effective teamwork management	80.80%	0.808	5
Quality control	80.40%	0.753	7
Professionalism	80.40%	0.816	7
Organizational skills	80.20%	0.762	9
Effective mentoring skills	80.20%	0.762	9
Creative thinking	79.80%	0.745	11
Time management skills	79.80%	0.793	11
Adaptability to changes	79.60%	0.769	13
Effective communication	79.20%	0.728	14
Flexibility	79.20%	0.823	14
Strong emotional intelligence	79.00%	0.784	16
Self-motivation	79.00%	0.815	16
Sound decision making	78.80%	0.759	18
Ability to manage stakeholders expectations	78.60%	0.766	19
Diplomacy	75.60%	0.832	20
Negotiation skills	75.40%	0.708	21
Conflict management	74.60%	0.832	22

questionnaire was converted into a Relative Importance Index (RII) for each of the rated factors. The collated data were tested to check its reliability with the aid of Cronbach's alpha test. They returned a value of 0.980, indicating that the collected data set is very reliable and fit for use for this study.

FINDINGS AND DISCUSSION

Background data collected for this study revealed that all participants are professionals within the construction industry, with most of them being project managers. Other participants are built environment professionals that have been engaged as project managers in the construction industry. Most of the participants possess between two and ten years of experience in the industry, while a few had above ten years of experience. The engagement sector amongst participants is evenly distributed between the public and private sectors, with a significant number of them working in both sectors. The slightly even distribution of the respondents speaks to the reliability of this research.

The extracted factors share a common link to effective and efficient project management. Although all projects are unique and all have challenges, effective management competencies can serve as a means to navigate through those inherent challenges. Results revealed that all the 22 core competencies addressed in this study are critical. The core competencies can be classified into two categories in a different vein. The first relates to personal

traits and includes innovative thinking, problem-solving skills, dependability, emotional maturity and control, confidence, creative thinking, effective communication, flexibility, strong emotional intelligence, self-motivation, diplomacy, and time management skills. At the same time, the second category relates to managerial traits. It includes effective teamwork management, quality control, professionalism, effective mentoring skills, organisational skills, adaptability to changes, ability to manage stakeholders expectations, negotiation skills, conflict management, and sound decision making. Finally, the empirical and theoretical findings agree that effective project management skills are essential for all construction professionals and managerial competence is vital to project success.

CONCLUSION

Projects are characterised by four features: a group of people, an objective, limited time, finances, and uncertainty regarding whether the goals will be achieved. Effective project management skills are essential for all construction professionals. Hence the need to understand the basic project management competencies. Survey results were used to develop a relative importance index. Findings from the study revealed that innovative thinking, problem-solving skills, dependability, emotional maturity and control, confidence are vital traits required from project stakeholders to ensure successful completion of projects. The study classified the identified competencies into two categories relating to personality traits and managerial traits. It was, therefore, concluded specific competencies must be inherent in project team members and management for a project to reach successful completion.

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