

A REVIEW ON PURPOSES OF PROJECT MANAGER'S LEADERSHIP SKILLS IN PRE-CONSTRUCTION PHASE OF SUSTAINABLE CONSTRUCTION PROJECTS

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Abstract

Project manager has an important role as a leader in sustainable construction project by implementing sustainability concept into practices. Considering the responsibilities of project manager, their role is noticeable in achieving sustainability objectives in a project. However, a failure to manage a project especially at pre-construction phase in sustainable construction can cause conflicts that can lead to project delay. The ability of project manager as a leader is crucial to manage a project in the early phase. Yet, this requires project manager as a project leader to have effective leadership skills to manage pre-construction phase of sustainable construction projects due to the management commitment towards sustainability. Thus, the aim this paper is to identify the purposes of project manager's leadership skills in pre-construction phase of sustainable construction projects. The overall intent of this paper is to highlight the purposes and identify project manager's leadership skills in pre-construction phase of sustainable construction projects so it can be adapted in current practices, hence, to effectively manage the sustainable construction projects strategically.

Keywords:

Leadership skills, Project manager, Pre-construction phase, Sustainable construction projects

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BACKGROUND OF STUDY

The sustainable construction is technically complex, which involve the multi-disciplinary (designers, engineers, and specialist in sustainable construction) and multi-cultural (languages, nationality, and religion) project teams from several different levels. In addition, every stakeholder (architects, engineers, quantity surveyor, and project manager) involved in a construction process have their own role in developing the construction industry. Among the others, the key role of project manager is emphasised in supporting the long-term vision in the construction industry (Hills et al., 2008). This is because, project managers are in an important position to handle and manage the construction industry basically in a project level. However, one of the problems of the unsuccessful construction project is because of poor leadership skills as a project manager (Zakaria et al., 2015; Sunindijo, 2015; Mouchi et al., 2011; Anantatmula, 2010). The issue on leadership skills of project manager is continuously occurred in conventional projects and it also arisen in sustainable construction projects. For instance, a case in Taiwan public projects, manager's leadership skills is the second highest critical factors in leadership for sustainable project management (Wang et al., 2015). The success of sustainable construction project is a result of the effective leadership skills of project manager should have.

Sustainable construction projects are naturally different from conventional projects due to the requirement of green materials and green building practices, as well as the management commitment to sustainability. Sustainable construction projects require extra considerations in many aspects more than the conventional project. Project managers may be unclear about the new design, complicated construction methods and lack of green materials (Kibert, 2008). Particularly, through project planning, project manager needs to think through the project and remain focused on the end goal. Project planning process in pre-construction phase, require the longest time of process in project management of the project manager's time over the life of the project. Besides that, planning process during pre-construction phase is the first step to achieve sustainability goals (Wu and Low, 2010; Alias et al., 2014; Isa et al., 2014). Therefore, project managers can be sustainability drivers of change alongside with their traditional role such as controlling time, quality, cost, safety and environmental issues (Hills et al., 2008).

In addition to that, there is still a lack of sufficient evidence in leadership competence of project managers and success criteria in sustainable construction projects (Tabassi et al., 2016). This is because, less attention has been given to the capability of leadership particularly towards the

delivery of sustainable construction projects (Tabassi et al., 2016; Opoku et al., 2015; Opoku and Fortune, 2011). The alignment between the aspects of leadership and sustainability is still rare and there is almost less attention for the integration of leadership skills in sustainable construction projects. Therefore, this paper intends to review the purposes of project manager's leadership skills in pre-construction phase of sustainable construction projects.

METHODOLOGY

This paper is designed with a literature review of several sources such as journal articles, books, conference proceedings, thesis and materials available on the internet. According to Creswell (2014), literature review completes several goals. It shares with readers the results of previous studies that are closely related to what is in the on-going study. It links the study to larger and more continuous dialogue in literature, filling the gap and pursuing previous studies (Marshall and Rossman, 2011; Cooper, 2010). The literature search was carried out by matching the keywords: leadership skills, project manager, pre-construction phase and sustainable construction projects. The keywords were used to fine the suitable literature by searching through wide range of data bases such as Web of Science, Science Direct, Wiley, Google Scholar, and Research Gate. Then, the collected articles were screened and scrutinised to identify which materials are more suitable and related to this study.

LITERATURE REVIEW

Leadership in Construction Project

The need for leadership in the construction industry is mainly because the success or failure of construction projects is highly dependent on who is leading and coordinating them. However, 80% of project failures are due to poor leadership, including inadequate leadership skills, lack of teamwork, inefficiency in problem-solving, and weaknesses in communication (Almansour, 2012). Added to that, most of the leadership challenges, particularly in the construction industry, relate to its workforce, including a shortage of good-quality workers, an aging workforce, teamwork, communication, training, and education (Toor and Ogunlana, 2008). Besides, some failures in the construction industry have become the subject of constant criticism especially its fragmentation and poor record on quality, waste, financial claims, safety, and efficiency (Pryke and Smyth, 2006). For all of these failures, one of the causes is ineffective leadership.

Undoubtedly, the construction industry is vast and technically complex and involves a combination of specific skills (Ofori, 2012). Managing projects successfully requires a mixture of skills including interpersonal ability, technical competencies and cognitive aptitude, along with the capability to understand the situation and people and then dynamically integrate appropriate leadership behaviours (Pant and Baroudi, 2008). Added to that, it is essential that project managers are competent in all four areas which include technical skills, project management skills, project leadership skills and project entrepreneurial skills to make the project a success (Burke and Barron, 2007). The leadership will be shared through teamwork, and the position of the leader in teams will rotate. Thus, the construction teams are not only large but also involve various disciplines and this makes leadership significant in the construction industry.

Project Manager's Leadership Skills in Sustainable Construction Projects

The literature includes several discussions of leadership skill, thus, this soft skill continues to draw the attention of scholars investigating its contributions to the success of a project. Table 1 shows the leadership skills identified by the previous researchers between conventional projects and sustainable construction projects.

Table 1: Leadership skills between conventional projects and sustainable construction projects (Zulkifli and Ahmad Latiffi, 2019)

		<i>Communication skills</i>	<i>Motivation skill</i>	<i>Decision making and Problem solving skills</i>	<i>Conflict management skill</i>	<i>Delegation skill</i>	<i>Planning and Goal setting skills</i>	<i>Team building skill</i>	<i>Negotiation skill</i>
Conventional projects	Kumar (2009)	√	√					√	√

Sustainable construction projects	Enhassi et al., (2009)	√		√		√		
	Bhangale and Devalkar (2013)	√		√	√			√
	Zulch (2014)	√	√	√	√		√	√
	Zakaria et al., (2015)	√		√	√		√	√
	Al Kazaz and Shibani (2016)	√	√	√			√	√
	Wang et al., (2015)	√						
	Li et al., (2013)	√		√				
	Hwang and Ng (2013)	√		√		√		√
	Robichaud and Anantatmula (2011)	√					√	√

Based on the table, eight (8) leadership skills have been identified commonly in conventional projects and sustainable construction projects. Most of the authors highlighted that communication skills, decision making and problem solving as well as team building skill as the most important skill in both types of projects. Sustainable construction projects can be more complicated than traditional projects thereby increasing the need for project team communication and teamwork. To be successful particularly in sustainable construction projects, communication is important in green projects to deliver sustainable practices across multidisciplinary project teams due to complexity in green projects than the conventional one (Robichaud and Anantatmula, 2011; Hwang and Ng, 2013). In the context of the construction industry, the quality of communication plays a significant role in the success of construction projects (Nielsen and Erdogan, 2007). This is supported by the fact that poor communication in construction can cause lower performance and a higher turnover of staff (Dainty et al., 2006).

Moreover, according to Robichaud and Anantatmula (2011), it is vital to set sustainable priority during the project feasibility to establish a framework for all future decision making. Consequently, the chance for significant changes or wrong decision making that lead to cost inefficiency can be reduced. Added to that, effective decision making also implies making the right choice within the shortest time to prevent delays (Hwang and Ng, 2013). Other than that, problem solving can be called troubleshooting. Therefore, effective and efficient troubleshooting is very important to successfully implement green building projects (Lokman et al., 2017). However, based on Table 1, motivation skill and conflict management skill are not being highlighted in sustainable construction projects. Compared to conventional projects, sustainable construction projects encounter more complicated problems and project manager face additional challenges. Project managers may be confused with new designs, sophisticated construction methods, and lack of green materials (Kibert, 2008). Thus, project manager need motivation skill and conflict management skill to motivate project team and to avoid any conflict that might be occurred in sustainable construction projects.

The comparison between leadership skills in conventional projects and sustainable construction projects revealed that there are specific leadership skills that should be strengthened to manage sustainable construction projects effectively. This may be because more emphasis is placed on particular aspects and phases of green building construction projects. Therefore, the next section will be discussed on the role of project manager as a leader in pre-construction phase of sustainable construction projects.

Roles of Project Manager as a Leader in Pre-construction Phase

In the pre-construction phase, the roles and responsibilities of the project manager are noticeable in ultimately attaining sustainability objectives. According to Jha (2013), planning is the key task for

project manager where else the main role of project manager is in pre-construction phase. Figure 1 shows the roles of the project manager in the pre-construction phase of a sustainable construction project.

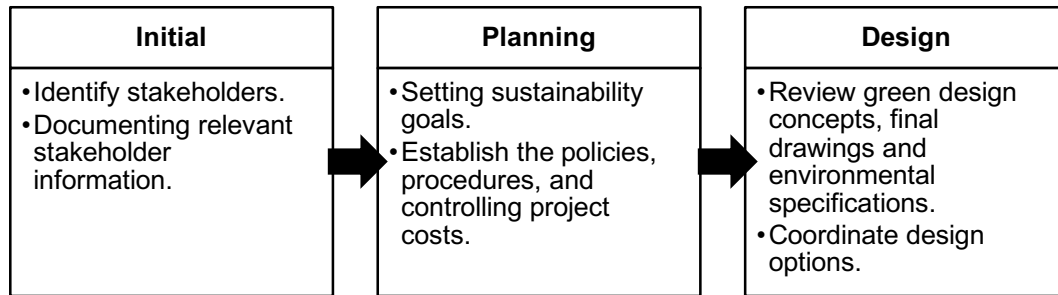


Figure 1: Roles of the project manager in pre-construction phase activities of sustainable construction project.

Based on Figure 1, the role of a project manager in the pre-construction phase involves the initial, planning, and design stages. In the initial stage, the necessity to identify the needs and interests of stakeholders is essential since their understanding is more significant in sustainable construction because the goal is long-term and the benefits can seem vague (Delnavaz, 2012). The willingness to meet the client's needs, can increase the chances of meeting the project goals even if the stakeholders fail to be convinced about the benefits of green building and do not feel the need to implement it (Hwang and Tan, 2012). The interest of the stakeholders can improve their understanding of different aspects of a sustainable construction project. Thus, a project manager has to convince the stakeholders about the concept of sustainability and the value of green building.

Moreover, in the planning stage, setting sustainability goals and controlling project costs within project periods is essential for sustainable construction projects. According to Hakinen and Belloni (2011), lack of sufficient knowledge to develop a project concisely with clear goals is a barrier to sustainable construction. However, Wu et al. (2016) indicate that controlling project costs is one of the most important factors affecting a project manager's decisions in a green project. Therefore, the project manager needs to set clear sustainability goals during the planning stage to prevent any hindrance in other phases. Robichaud and Anantatmula (2011) suggest that setting sustainability goals during the planning stage can establish a framework for all future decision making. Consequently, any changes or wrong decisions leading to cost inefficiency can be reduced.

Furthermore, at the design stage, the project manager is responsible as a coordinator to review the final design drawings in line with sustainability and stakeholder requirements. According to Jaworski and Samanta (2006), the project manager should ensure that project goal are achieved and carefully monitored during the design stage to meet the project requirements. This design stage involves a multi-disciplinary project team, making the role of the project manager even more vital. Besides that, the involvement of all the project team in the design process will avoid redesign problems (Hwang and Tan, 2012).

Project managers are responsible for the daily management of the various activities in the sustainable construction process, including the management, technical, and legal aspects of the work. Typical construction project activities with multiple tasks without project manager can make construction organisation to undertake those tasks to complete the task (Bubshait and Al-Atiq, 2011). Thus, the roles of the project manager in the pre-construction phase have a specific function in the implementation of a sustainable construction project.

RESULTS AND DISCUSSION

Project Manager's Leadership Skills in Pre-construction Phase of Sustainable Construction Projects

Most of the challenges faced by project managers in implementing green building arise in the pre-construction phase (Robichaud and Anantatmula, 2011; Hwang and Ng, 2013). This is due to the need for a more detailed such as green featured in planning process as well as the involvement of different project team members, such as green specialists, which may slow-down the pre-construction phase (Hwang and Ng, 2013). Thus, the purpose of project manager as a leader in pre-construction phase is important to maintain the progress throughout the construction process. Besides that, the competencies, skills, and sustainability knowledge of the project manager will ensure the success of

sustainable construction projects (Khang and Moe, 2008; Abu Hassan et al., 2010; Hwang and Ng, 2013; Esa and Alias, 2014; Serhan, 2016). Appropriate literature on the roles and leadership skills of project managers in conventional projects and sustainable construction projects has identified the appropriate leadership skills for a project manager in managing pre-construction phase. Therefore, based on the literature, eight (8) appropriate leadership skills for project managers in pre-construction phase of sustainable construction project are identified as follows:

Communication skills

Communication skills involve an ability to exchange information with a person or group. Otherwise, communication is especially important for project managers in green projects to deliver the sustainable practices that are expected from the project team (Hwang and Tan, 2012). For instance, in the initial stage, a project manager needs to successfully communicate with stakeholders about achieving the sustainability goals (Serhan, 2016). Added to that, project manager is also responsible for holding the initial meetings which benefit the communication between the project teams (Robichaud and Anantamula, 2011). As the number of project teams and participants increases, the circle of communication between project manager and others will continue to grow. Hence, the purpose of project manager's communication skills may accommodate the different perceptions of sustainability among project team and the stakeholders to ensure a successful outcome for the project.

Motivation skill

The skill of motivation is an ability to enable a person to achieve their goals. Yet, motivation is a skill that a project manager can apply to ensure that the project team meets the project's goals in time and on budget (Schmid and Adams, 2008). In the early phase of a sustainable construction project, a project manager needs to motivate the project team to achieve sustainability goals. Added to that, motivation is the key to ensure that the stakeholders, such as the project owner and the developers, continuously engage with green building practices (Olanipekun et al., 2017). However, the lack of such motivation often leads to conflict, strikes, low productivity, stress, and the failure of the project (Zulch, 2014). Project teams have lower levels of motivation when they are not fully aware of the green project process (Robichaud and Anantamula, 2011). Thus, the purpose of motivation skill is to maintain the progress of project activities, teamwork among project team and stakeholder's engagement towards sustainable construction projects to avoid any complex conflict.

Decision-making and problem-solving skills

Decision-making and problem-solving skills involve the ability to define and solve problems. Decision making is a process of obtaining a team commitment to, and mutual support for, sustainability (Zulch, 2014). For example, in the planning and design stage, there is a need for the project manager to decide the best possible selection of technologies, systems, and subcontractors required for green projects (Hwang and Ng, 2013). Tools and practices are necessary for the project manager to support decision making for managing sustainability criteria in a project. However, problem solving is different from decision making as it is a process of analysing the sustainability criteria and identifying the possible solutions (Pryke and Smyth, 2006). However, both decision-making and problem-solving skills are closely linked and each requires creativity and innovative in identifying and developing other option. Therefore, the purpose of decision-making and problem solving skills is to guide project manager to identify problems and developing the appropriate solution for sustainable construction projects as it differs from conventional projects.

Conflict management skill

Conflict management skill is the ability to resolve conflict in a positive way. Conflict management has also been identified as one of the important soft skills that influence the achievement of project success by the project managers (Giotis, 2010). Effective conflict management by the project manager can deal with the details of stakeholder relationships thereby preventing the project experiencing delays in addressing issues and restricting the expense of resolving disputes. For example, conflict within the project team may be unavoidable and project managers must be equipped to manage conflict effectively without affecting project progress (Hwang and Ng, 2013). Rather than avoiding the disagreement, the purpose of conflict management skill is to resolve conflict and project manager need to learn to deal with it in a healthy way.

Delegation skill

Delegation skill involves working with subordinates to establish direction, authority, and responsibility. Without this skill, the ability of a project manager to manage the team and deliver results will be limited (Bruce, 2014). Also, delegation skill is important in making the best use of the project team and the project manager provides the ability to focus on the real situation (Farooqui, 2008). Delegation skill is essential for the project manager in the pre-construction phase, particularly in the planning and design stage, in order to distribute tasks among a qualified project team. Added to that, the purpose of delegation skill is to boost teamwork, improve efficiency and productivity of the project team so that it can increase project team responsibility to achieve project objectives.

Planning and goal-setting skills

Planning and goal setting skills involve an ability to plan a process and to achieve the desired goals. During the planning and scheduling process, a project manager should consider the impact of green criteria on the overall schedule for the construction works (Glavinich, 2008). The plan of work should be explained to all parties (stakeholders and the project team) such as in the pre-start meeting where all parties need to work together to establish project feasibility so that the project manager can implement a smooth construction schedule (Robichaud and Anantamula, 2011). Besides that, setting feasible and sustainable priorities during planning stage will help to establish a framework for all future decision making (Farooqui, 2008). Thus, the purpose of planning and goal-setting skills in pre-construction phase is to give project manager a long-term vision to help them to organise time, cost and resources in each activity involve in sustainable construction projects.

Team building skill

Teams are defined as groups of people who have skills that are committed to a common purpose and who hold themselves mutually responsible for their achievement (Foley and Macmillan, 2005). Ideally, teamwork is when a group of people works together in a way that is coordinated and mutually supportive of achieving goals. Project managers should also be engaged in team building skills for the success of their project. The results of a survey from Singapore revealed that project managers who are equipped with excellent team building skills could improve project team cohesiveness as well as enhancing the overall project team performance (Hwang and Ng, 2013). Other than that, the purpose of project manager with an excellent team building skill in pre-construction phase can improve bonding among project team to be a capable team so that they can avoid any conflict, increase productivity and motivation as well as to encourage creativity to complete their task in a project.

Negotiation skills

Negotiation skills involve an ability to discover common ground and reach an agreement to settle a matter. Project managers need to apply negotiation skills throughout the project life cycle (APM, 2018). For example, a project manager should negotiate among stakeholders and the project team about various aspects in pre-construction phase such as the scope of the project, deadlines, resources, the team structure that is required to deliver the project, targeted achievements and other things that occur during the project (Foley and Macmillan, 2005). Added to that, the purpose of negotiation skills in pre-construction phase can help project manager to reach agreements, achieve sustainability goals and can avoid conflict and improve relations among project team as well as with the stakeholders.

CONCLUSIONS

The capability of leadership skills is an essential skill of project manager that can clearly contribute towards project manager performance in sustainable construction project. It is the project manager roles as a leader to improve leadership skills so that they can manage sustainable construction project strategically. Moreover, practically, the project manager spends the longest time in pre-construction phase. Yet, the project will be faced problem such as delay and cost overrun if project manager tends to mismanage the project in the early stage of project life-cycle. Therefore, this paper is expected to expose the purposes to improve leadership skills of project manager in managing the pre-construction phase of sustainable construction projects. This is important to smooth the progress of sustainable construction projects as well as to encourage project manager to improve their leadership skills when managing such projects.

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