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Sustainable Construction Projects: The Level of Understanding on Leadership Skills among Project Managers

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Abstract

A project manager is a crucial factor of a project's success, especially in sustainable construction projects. Their role as a leader is also observable with regard to achieving sustainability objectives in sustainable construction projects. In contrast to conventional projects, sustainable construction projects face more nuanced issues. The influence of leadership skills of project manager is therefore becoming essential for the success of sustainable construction projects. This study examines the level of understanding of leadership skills among project managers in sustainable construction projects and determines the correlation between their experience and understanding of leadership skills. A questionnaire survey was carried out among 153 project managers with experience in the management of sustainable construction projects in Malaysia. The IBM SPSS software version 24 was used to perform a descriptive statistic, a normality test and a Spearman's correlation test on the data collected. The results indicate a very high level of understanding among project managers regarding leadership skills in sustainable construction projects. Apart from that, there is a positive correlation between years of experience in sustainable construction projects and the level of understanding of leadership skills among project managers in sustainable construction projects. The findings of this research will serve as an avenue for future researchers to identify the necessary leadership skills for project managers to manage sustainable construction projects effectively.

Keywords: Leadership skills, project manager, sustainable construction projects, understanding, experience

■1.0 INTRODUCTION

Leadership is considered as one of the most critical factors in the sustainability project management (Hwang & Ng, 2013; Opoku & Fortune, 2011; Opoku et al., 2015; Tabassi et al., 2016; Wang et al., 2015). This is mainly because every decision made by the project manager is vital towards achieving sustainability goals. Therefore, project managers must have experience handling sustainable construction projects in order to be eligible for these positions. As a project leader, the project manager is predominantly responsible for monitoring the project and leading the project team. As a matter of fact, the project manager's lack of leadership skills contributes to the failure of construction projects (Anantatmula, 2010; Mouchi et al., 2011; Sunindijo, 2015; Zakaria et al., 2015). Leadership skills are seen as one of the most necessary skills required for a successful project (Yang et al., 2015). Although leadership skill is known as a major factor in successful management, the subject is still not compelling (Nixon et al., 2012), and further study is needed to thoroughly understand this human conduct. In contrast to other industry, the construction industry requires more leadership approach. It is also apparent that the construction industry needs more leadership compared to other industries (Limsila & Ogunlana, 2008; Liphadzi et al., 2015).

The issue of project manager leadership skills has consistently been raised in conventional projects and is even emerging in sustainable construction projects. For example, the first step to form an integrated team for a sustainable construction project is to select an experienced project manager during the feasibility phase (Robichaud & Anantatmula, 2011). A project manager who is knowledgeable and experienced in handling a sustainable building process is able to avoid risks (Delnavaz, 2012). An integrated team consists of multi-disciplinary members; therefore, the project manager must be experienced in managing a diverse team and sustainable construction practices so that the sustainability goals can be understood by others. The project manager must also be able to provide solutions to any problem that might arise. In view of these points, this study aims to examine the level of understanding of the leadership skills among project managers in sustainable construction projects and the correlation between their level of understanding and experience in sustainable construction projects.

This study is structured into five (5) sections. Following this introduction, Section 2 presents a literature review consisting of the project manager as a leader, the project manager's skills in sustainable construction projects as well as the leadership skills in the construction industry. In addition, the methodology is discussed in Section 3, followed by the findings and discussion in Section 4 and finally, the conclusions and recommendations in Section 5.

■2.0 LITERATURE REVIEW

2.1 Leadership in the Context of Construction Industry

Leadership requires the ability to encourage or empower a project team and the ability to develop individuals in the righteous path to accomplish the goals of a project. A project manager is the leader who drives the entire project team towards the goals and objectives of a project despite limited resources (Toor & Ogunlana, 2008). Leadership is perhaps more significant for the construction industry compared to any other industry. This, however, requires technical complexity and particular expertise in the construction industry. As a matter of fact, various points of view, including skills, characteristics, theories and behaviours, have been considered in order to understand the characteristics of leadership. Therefore, this section elucidates the concept of leadership within the context of the construction industry. Table 1 enlists the definitions of leadership from the construction industry perspective.

Table 1 Definition of leadership

Authors	Definition of Leadership
CIOB (2010)	A process in which one influence other to meet goals.
PMBOK (2008)	An ability to lead the project teams to achieve the goals of the project and to meet the project requirements.
Archer et al. (2010)	A complex process in which one influences others to execute a mission, task or goal and guides the organisation to make it more coherent and rational.
Ofori and Toor (2012)	A significant success factors for any cooperative effort involving groups (or groups) of individuals.
Zulch (2014)	An interpersonal style designed in achievement of certain goals with both integrate with organisational and personal preferences.
Opoku et al. (2015)	A mechanism that influence a set of people to reach a shared purpose instead of a managerial role.
Tabassi et al. (2016)	The complex acts and position of leaders vary with diverse circumstances and characteristics in respect of the required form.
Muda et al. (2017)	A combination of capability and actions of leaders that influences other principles aligned with the purpose and goal of the organisation.
Liphadzi et al. (2018)	A process by which one person influences other individual thoughts, beliefs and action.
Oyetunji et al. (2019)	A complex process in which individual influences others to attain an assigned job.

As shown in Table 1, leadership is characterised not only by the ability to lead, but also by the ability to influence others to achieve goals. According to Liphadzi et al. (2018), leadership is seen as the way to influence people to reach the desired results. Other than that, leadership is when an outstanding leader influences his subordinates and exchanges objectives within the organisation (Muda, 2013). Both statements express the same understanding of leadership support as the ability to lead and influence other individuals or groups to achieve targeted objectives. However, Archer et al. (2010) argue that the main flaw in leadership is when the leader is unable to make the team focus on the goals of the project. This is because, if the desired objectives are vague, the member of the team will be uncertain of the leader's abilities. In the context of the construction industry, as project managers, construction professionals understand that their focus should be on finishing tasks. They strive to achieve the goal of completing their activities on schedule and within the budget (Liphadzi et al., 2018; Muda et al., 2017).

Furthermore, leadership can be described as the ability to change an organization's management and the people involved. For example, the project manager will monitor the project team's performance and ensure that improvements in their actions are implemented successfully and that project goals are met. According to Abbas and Asghar (2010), the main factor in the success of transformation and organisational accomplishment is effective leadership. Leadership must take into account both organisational and personal interests in the pursuit of certain goals (Zulch, 2014). Hence, the role of the project manager as a leader is to consider changes in the management of the organisation in parallel with the objectives of the project.

Despite leading and influencing others, leadership also requires teamwork. The aim of teamwork is to bring the team together, inspire them, develop trust in the project team and delegate the assigned task. Leadership is an important factor in the success of any activity involving cooperation between people (Ofori & Toor, 2012). It is the project leader's obligation to stimulate cooperation and communication among project team members. In addition, empowering the project team will inspire them as well as improving efficiency and productivity. Besides, empowering not only motivates the project manager, but also establishes trust and delegates the project team throughout the right direction (Zulkiffli & Latiffi, 2019).

Regardless of the universal acceptance of leadership, the term in leadership literature nevertheless lacks certainty and correspondence (Jing & Avery, 2008). The significant amount of literature on leadership skills fascinates researchers about the need to attain success in the project. Leadership skills are one of the most critical qualities needed for a successful project (Prabhakar, 2005; Yang et al., 2015). Hence,

it is vital for the construction industry to have greater leadership because of its nature as a broad and complex industry, involving an interdisciplinary team of different sectors.

The need for leadership skills in construction projects depends, in particular, on the person responsible for management and coordination. A study conducted by Zhang and Faerman (2007) reported that 80% of construction projects failed due to poor leadership, including lack of leadership skills, lack of teamwork, poor communication and inefficiency in problem-solving. Nevertheless, nearly all of the leadership obstacles in the construction industry were associated with workers such as lack of quality workers, communication, workforce maturity, teamwork, training, and education (Toor & Ofori, 2008). In addition, many deficiencies have consistently been criticised for fragmentation and poor quality, waste, financial claims, protection and productivity in the construction industry (Ofori, 2012). Thus, it could be said that ineffective leadership is part of the root cause of such unfavourable outcomes.

The construction industry is undoubtedly broad and technically complicated, and the workforce requires a merger of unique skills (Liphadzi et al., 2015). The project teams are not only having different expertise but also constituted by members from various fields which make leadership vital in the construction industry. The project leaders may boost the sustainability performance in sustainability projects by influencing and reorganise their teams (Oyetunji et al., 2019). As stated by Ofori and Toor (2012), leadership is important in a project, organisation management, and the development of the construction industry. Hence, aside from their traditional role to achieve the golden triangle (scope, cost, time), project managers have special roles as the sustainability driver to successful deliver in sustainable construction project.

2.2 The Identification of Project Manager's Leadership Skills in Sustainable Construction Projects

A skilled project manager is crucial to the success of sustainable construction projects. Such success is linked to the skills of the project manager to manage such projects. Project managers develop and improve their technical and management skills through experience in developing and implementing their top-notch skills in the construction project (Khamaksorn, 2016). The Project Management Body of Knowledge (PMBOK) outlines eight (8) management skills and interpersonal skills that are necessary for the project manager to manage successful projects such as leadership skills, motivation skills, ability to influence skills, communication skills, team building skills, decision making skills, political and cultural awareness skills as well as negotiating skills (Rose, 2013). However, in this study, skills are designated as leadership skills. According to Project Management Institutes (PMI), motivational skills, inspirational skills, team building skills, communication skills, negotiating skills, listening skills and influencing skills are necessary leadership skills for the project manager (Kumar, 2009). In contrast to conventional projects, sustainable construction projects are technically complicated and therefore the project managers involved need to improve their skills in order to manage such projects effectively. Table 2 reveals the skills needed to manage a sustainable construction project.

Table 2 Identification of necessary skills by sustainable construction project managers

Author	Skills
Zulkiffli and Latiffi (2019)	• Communication • Planning and Goal-setting • Team building • Motivation • Decision-making and Problem-solving • Conflict management • Negotiation • Delegation
Wang et al. (2015)	• Leadership • Communication • Evaluation • Result of the project • Innovation
Hwang and Ng (2013)	• Communication • Leadership • Decision making • Analytical • Team working • Problem-solving • Negotiation • Human behaviour • Chairing meeting • Presentation
Li et al. (2013)	• Leadership • Communication • Problem-solving
Robichaud and Anantatmula (2011)	• Communication • Planning and strategy • Teamwork

Based on Table 2, five (5) authors have addressed the skills of project managers in sustainable construction. The most important skill was identified as communication skill (Hwang & Ng, 2013; Li et al., 2013; Robichaud & Anantatmula, 2011; Wang et al., 2015; Zulkiffli & Latiffi, 2019). As previously reported, project managers are the project's leader and are responsible for working with, communicating with and handling a multi-disciplinary and multi-cultural project team. They must also ensure that all information is provided in a transparent and efficient manner among all stakeholders. A strong communication mechanism with suppliers and supervisors to resolve disputes effectively should also be established by the project manager, which is dependent on project management and organisational leadership (Sang et al., 2018).

Decision-making and problem-solving are two other skills expected of a project manager working on sustainable construction projects (Li et al., 2013; Hwang & Ng, 2013; Zulkiffli & Latiffi, 2019). This skill is vital as it enables the project manager to solve problems throughout the life cycle of the project (Shibani & Sukumar, 2015). In sustainable construction projects, project managers are likely to face various challenges, such as complicated design, green materials, advanced technology, inexperienced project teams and unsatisfied clients. Project managers are also expected to coordinate a wide group of experts in a project team and provide an opportunity for fair solutions to problems (Hills et al., 2008). Ponniah et al. (2015) suggested that project managers should visit green construction sites on a regular basis to solve sustainability issues. Experience in similar projects might become useful in solving problems in current and future projects. Therefore, a problem-solving skill is necessary to enable project managers to solve various problems, thus avoiding additional costs, delaying the project and inability to meet sustainability goals.

Moreover, team building skill is also essential in sustainable construction project (Hwang & Ng, 2013; Robichaud & Anantatmula, 2011; Zulkiffli & Latiffi, 2019). Mainly, sustainable construction projects are broad and full of diverse areas of expertise. The need to reinforce the team is therefore important for the project to be carried out. Project managers could improve team building skills by serving as a charismatic role model for project teams. Project managers who are qualified and have strong team-building skills will be able to enhance team interconnection and performance.

Ideally, all skills are vital for project managers to manage sustainable construction projects. However, some of the previous researchers have identified project manager skills according to the purpose of their study. Notwithstanding, in this study, the skills are identified as leadership skills. Therefore, in order for project managers to effectively achieve and accomplish sustainability goals in sustainable construction projects, the need for leadership skills is required.

■3.0 METHODOLOGY

This study adopted a quantitative method through a questionnaire survey. Non-probability sampling which are purposive and snowballing techniques were used to select the respondents. Purposive sampling is frequently used for very small samples, often in case study research and in selecting particularly informative cases (Neuman, 2006). Used in both qualitative and quantitative studies, purposive sampling is a non-random technique without the basic theories or numbers of respondents (Etikan et al., 2016). In other words, to select respondents via the purposive sampling method, the researchers need to know what should be known and identify the respondents who are willing to provide information based on their knowledge and experience (Bernard, 2002).

Snowballing sampling, on the other hand, is used to collect data that cannot be easily identified or are difficult to obtain (Zulch, 2012). In this sampling method, the researcher asks the respondents to suggest other potential respondents (Fellows & Liu, 2008). The snowball sampling is useful for identifying respondents who are difficult to locate and access, as in the case of this study. There is no specific reference or list documenting project managers with experience in sustainable construction projects. Therefore, the use of snowball sampling could enhance the sampling size and facilitate access to other potential respondents. Both methods have been used because of the limitation of respondents in Malaysia and there is no specific population for project managers who are experienced in sustainable construction projects.

Due to geographical constraints, only project managers from Peninsular Malaysia were selected. A list of certified green building projects was obtained from the Green Building Index (GBI) website from January 2018 to December 2018. The questionnaire was distributed either face-to-face to the respondents or via an online survey (Google Docs) method. The questionnaire was distributed to 200 project managers who had experience with sustainable construction projects. A total of 153 completed questionnaires were received, resulting in a 76.5% response rate. A response rate between 35% and 55% is considered realistic (Baruch & Holtom, 2008). Given these points, the response rate in this study can be considered able to render credible findings (Fellows & Liu, 2008).

Furthermore, the data were analysed using IBM SPSS software version 24. Firstly, the data were analysed using the normality test for determining the data normal distribution (Ahmad, 2016). Generally, the statistical and graphical methods assess the normality of the variables (Tabachnick & Fidell, 2013). Most previous researchers used the normality test to test the normality of the items in their questionnaire. The purpose of this test is to facilitate the selection of an appropriate analysis by the researcher. Moreover, the descriptive statistics was used to determine the level of understanding among the project manager in sustainable construction projects. A mean score value is based on the number of scale responses used in a survey (Dawes, 2008). This method was also used by previous researchers (Abidin, 2010; Samari et al., 2013; Sichali & Banda, 2017). Finally, the Spearman correlation test was conducted to examine the significant relationship between the level of understanding of leadership skills and years of experience in sustainable construction projects. This test measured the strength of the relationship between two (2) variables (Ahmad, 2016; Saunders et al., 2009). The Spearman correlation test is designed for non-normal data distribution and is therefore appropriate for use in this research. The following section presents the findings of the survey.

■4.0 RESULTS AND DISCUSSIONS

4.1 Respondents' Profiles

The results and discussions on the respondents' profiles are presented as follows. Figure 1 depicts the respondents' level of education.

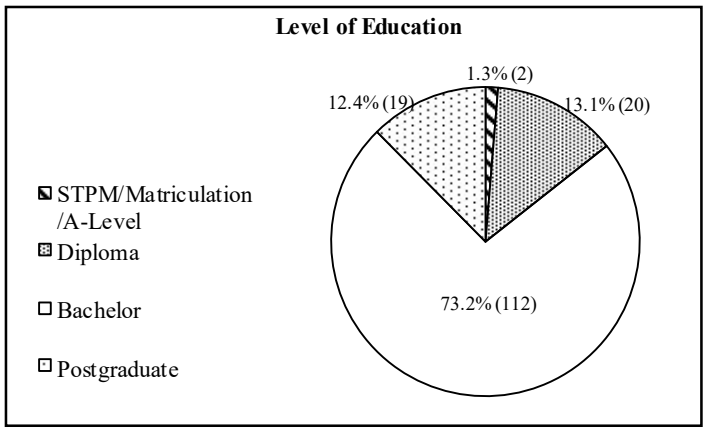

Figure 1 Level of education

The highest level of education for the project managers is a bachelor degree (73%), followed by a diploma (13.1%), postgraduate (12.4%) and STPM/Matriculation/A-Level holder (1.3%). The interest of the construction organisation in green building will grow by increasing the level of education among construction experts (Samari et al., 2013). In addition, education is an attribute factor that contributes to the success of a green building projects (Lop et al., 2017). This finding indicates that education is necessary for project managers to increase their understanding on how to effectively manage sustainable construction projects. Next, Figure 2 presents the project managers' years of experience in the construction industry.

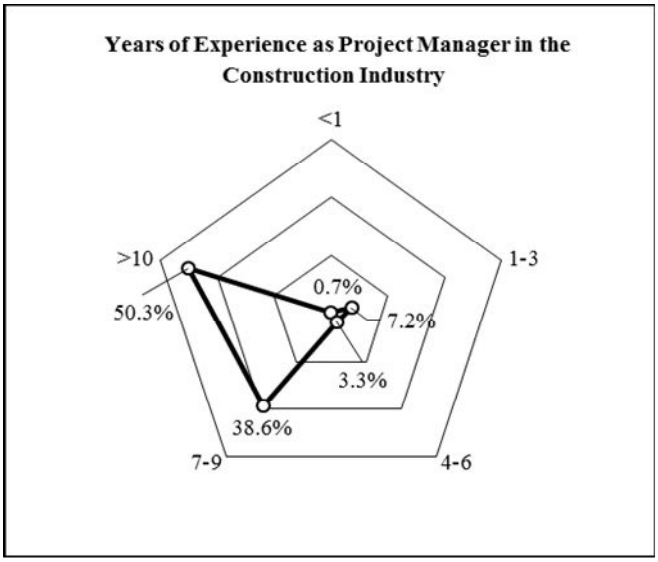

Figure 2 Years of experience in the construction industry

Based on Figure 2, the respondents have over ten (10) years of experience (50.3%), followed by 7–9 years of experience (38.6%), 1–3 years of experience (7.2%), 4–6 years of experience (3.3%), and 1 year of experience (0.7%). Half of the respondents have experience managing conventional projects for more than ten (10) years. An experienced project manager can adopt different viewpoints related to their task and deal with it differently compared to an inexperienced project manager (Atout, 2014). Hence, having long experience in conventional projects is very useful for a project manager to adapt to the discipline of sustainable construction projects. Figure 3 illustrates the years of experience of project managers in sustainable construction projects and the number of sustainable construction projects they have participated in.

Figure 3 Numbers of sustainable construction projects and years of experience in sustainable construction projects

Based on Figure 3, 35.3% of respondents have 4–6 years of experience in sustainable construction projects, and 34.6% have 7–9 years of experience in such projects. A total of 24.8% of the respondents have 1–3 years of experience in sustainable construction projects. Only 5.2% of the respondents have less than 1 year of experience in sustainable construction projects. These findings indicate that the numbers of project are significant with the years of experience of the respondents. Project managers with better experience are more likely to lead to sustainable construction projects. Project managers may obtain experience by being involved in a number of sustainable construction projects. Their experience is valuable because the knowledge gained could be used to mitigate any future hazards over the project life cycle (Delnavaz, 2012).

Surprisingly, none of the project managers have more than ten (10) years of experience in sustainable construction projects. A study conducted by Rahim et al. (2019) found that the number of certified green project managers is still relatively small. Although Malaysia has introduced its first National Green Project Managers (GPM) Awards in 2015, there has been no improvement in the number of certified GPMs. Such a shortfall indicates that Malaysian project managers still lack of experience in managing sustainable construction projects.

Furthermore, years of experience in sustainable construction projects and the number of sustainable construction projects involved, have a significant relationship with leadership skills. As stated by Serhan and Draganov (2016), experienced project managers who have developed their skills over time would know how to lead their team. They would have broad exposure to different phases of the project, experience and number of projects through extensive years of experience (Ma et al., 2014). Hence, it can be concluded that years of experience in sustainable construction projects and numbers of sustainable construction projects involved can influence the leadership skills of the project manager.

4.2 Cronbach's Alpha

Cronbach's Alpha is commonly used to calculate the reliability of an instrument. Table 3 displays the value of Cronbach's Alpha obtained in this study.

Table 3 Results of Cronbach's Alpha

Cronbach's Alpha	N of Items
0.970	10

Based on Table 3, the value of Cronbach's Alpha is 0.970, which is above the threshold of 0.70. This finding indicates that all the variables have internal consistency and achieved high reliability (Clark & Creswell, 2015). Further details on the results are provided in Sections 4.3, 4.4, and 4.5.

4.3 Level of Understanding of Leadership Skills among Project Manager in Sustainable Construction Projects

The level of understanding of the project manager's leadership skills was determined by the mean score interpretation method used by Moidunny (2009). The findings are shown in Table 4.

Table 4 Level of understanding of leadership skills

No	Item	Mean Score	Interpretation
1	Ability to lead people.	4.50	Very High
2	Ability of an individual or a group of people to accomplish organisational goals.	4.48	Very High
3	Ability to change the management in organisation and people involved in it.	4.46	Very High
4	Ability to allocate and distribute equitable team member's responsibilities and accountability.	4.45	Very High
5	Ability to plan the process and to achieve the goals desired.	4.44	Very High
6	Ability to bring a team together, regardless of the personalities involved and the dynamics of the workgroup.	4.43	Very High
7	Ability to exchange information from one entity or group.	4.43	Very High
8	Ability to foster respect, trust, inclusiveness, and openness.	4.39	Very High
9	Ability to enable a person to be motivated toward achieving goals.	4.37	Very High
10	Ability to establish direction, authority, and responsibility toward subordinates.	4.35	Very High

Table 4 shows that the ability to lead people has received the highest mean score (4.50). Basically, the project manager acts as a liaison between a number of agents (Formoso et al., 2002); they either influence, motivate or empower a person. The leader is expected to lead his/her subordinate towards targeted goals. Likewise, in Malaysia, a project manager with a project team is a key driver for the achievement of a green building project (Sharif et al., 2014). Thus, coordination between the leader and his/her subordinates is essential for the achievement of both project and organisational goals.

The ability of an individual or a group of people to accomplish organisational goals and compromise and reach to agreement received the mean score (4.48). A project leader is responsible for ensuring that all members of the project team are aware of the project's goals, which can be achieved through planning and strategy meetings (Robichaud & Anantatmula, 2011). Additional considerations, such as environmental objectives and green initiatives, are deemed necessary for sustainable construction projects. Hence, setting specific sustainability targets is critical when managing sustainable building projects.

The following items received a mean score of 4.46, 4.45, and 4.44, respectively: ability to change the management in organisation and people involved in it; ability to allocate and distribute equitable team member's responsibilities and accountability and the ability to plan a process and achieve the goals desired. As argued by Delnavaz (2012), despite the need for a competent project team, project managers may take certain decisions without first setting and considering sustainability goals during the design phase. The project manager's job is to explain the project goals during the early stages of construction projects. This notion is in line with Robichaud and Anantatmula (2011), who stress the need to establish sustainability goals during the feasibility phase as a basis for future decision-making.

The following items each received a mean value of 4.43: (i) the ability to bring a team together, regardless of the personalities involved and the dynamics of the workgroup; (ii) the ability to exchange information from one entity or group respectively. Since a few members of the project team are unfamiliar with the concept of sustainable building projects, they should be assigned to the required role based on their knowledge and skills to prevent any problems. Eventually, delegation skills must be exercised for two (2) reasons: (i) assigning a precise task to the project team and (ii) enabling the project manager to pay attention to the main idea (Zulkiffli & Latiffi, 2019). Hence, with an accomplished project manager, project team members can be more efficiently assigned with relevant tasks.

Other skills required for project managers are the ability to foster respect, trust, inclusiveness, and openness (4.39); the ability to enable a person to be motivated toward achieving goals (4.37); and the ability to establish direction, authority and responsibility toward subordinates (4.35). The absence of sustainable motivation occasionally contributes to conflict, strikes, reduce efficiency, fatigue and project failure (Steyn, 2008). A project team would be less motivated if they were not aware of the sustainable project process (Hwang & Ng, 2013). The project manager, as a project leader, is authorised to empower the project team. A project team that is motivated has the potential to not only inspire the project team, but also to boost their efficiency and productivity (Zulkiffli & Latiffi, 2019).

Therefore, the findings indicate that the project managers have a very good understanding of the credential of leadership skills (see Table 4). Their level of understanding of leadership skills in sustainable construction projects is considered to be very high, as the average score of all items is 4.44. It can be concluded that, with a better understanding of leadership skills, project managers are aware of their responsibility as project leaders to manage successful sustainable construction projects.

4.4 Normality Test

The purpose of the normality test is to see whether data set is normally distributed. In this study, the Kolmogorov-Smirnov as well as skewness and kurtosis methods were used to test the normality of the data. Table 5 shows the results of the normality test.

Table 5 Results of normality test

	Kolmogorov-Smirnov		Skewness	Kurtosis
Item	Statistic	Sig.	Statistic	Statistic
Understanding of leadership skills among project manager in sustainable construction projects.	0.268	0.000	-0.301	-1.195

Based on the table, the normality assessment was driven by two (2) types of tests conducted for all constructs. From the data obtained, the Kolmogorov-Smirnov test indicates that all constructs have significant values of 0.000. Normally, when the *p* value exceeds 0.05, the data is normally distributed (Field, 2009; Mishra et al., 2019). However, in this study, this value reveals that the data are not normally distributed. Hence, another analysis for skewness and kurtosis of the data was conducted. The results show that some of the distribution of data is not normal because the values exceed the recommended threshold of -1 to 1. Fundamentally, the propose threshold should be between -1 to 1 (Awang, 2015; Dawes, 2008; Hair et al., 2014). Therefore, the Spearman correlation test was used as the test is suitable for a non-parametric test.

4.5 Correlation between Level of Understanding of Leadership Skills and Experience in Sustainable Construction Projects

The results of correlation coefficient are based on the value between -1 to 1 (Saunders et al., 2009). Table 6 displays the results of the correlation between level of understanding and years of experience in sustainable construction projects.

Table 6 Correlation between level of understanding and years of experience in sustainable construction projects

			Level of Understanding of Leadership Skills among Project Manager in Sustainable Construction Projects	**Years of experience in the sustainable construction project**
Spearman's rho	**Level of Understanding of Leadership Skills among Project Managers in Sustainable Construction Projects**	Correlation Coefficient	1.000	0.318**
		Sig. (2-tailed)	.	0.000
		N	153	153
	Years of experience in the sustainable construction project	Correlation Coefficient	0.318**	1.000
		Sig. (2-tailed)	0.000	.
		N	153	153
**. Correlation is significant at the 0.01 level (2-tailed)				

Table 6 above exposes a significant correlation between a project manager's level of understanding on leadership skills in sustainable construction projects and years of experience as a project manager in sustainable construction projects ($r = 0.318$, ρ-value is 0.000 [<0.05]). This result indicates that as project managers' experience in sustainable construction projects grows, their knowledge of leadership skills grows as well. This finding corresponds to the work of Delnavaz's (2012), who found that project managers could have an adjustable role based on his or her experience. Besides, an effective leader needs to experience and understand the culture of the construction industry in order to successfully navigate it (Al Kazaz & Shibani, 2016). In other words, by increasing experience in sustainable construction projects, project managers could improve their understanding of their holistic role as leaders in a diverse team, particularly in sustainable construction projects.

■5.0 CONCLUSION AND RECOMMENDATIONS

Successful project managers need a vast array of skills and experience in managing project teams and supervising various activities in sustainable construction projects. They need to be effective and skilled leaders to lead the project towards success. This study explored the understanding of leadership skills among project managers in sustainable construction projects. The findings indicate that project managers have a very high level of understanding of leadership skills in sustainable construction projects. Such an understanding will enable them to manage sustainable construction projects effectively.

Apart from that, working experience is another significant attribute in gaining leadership skills. The years of experience of project manager in sustainable construction projects have a significant correlation with their level of understanding on leadership skills. Simply put, the more sustainable construction project experience they have, the more leadership skills they can develop and strengthen.

The level of understanding of leadership skills in sustainable construction projects has shown that the project manager's responsibility as a project leader could have an impact on the success and failure of the projects. Hence, recommendations on improving the leadership skills of the project manager in sustainable construction projects and improving the career path of the new project manager in sustainable construction projects should therefore be highlighted. Furthermore, in order to assist project managers in improving their leadership skills, a proper framework must be developed, explicitly for the enhancement of the project manager's leadership skills in managing sustainable construction projects. For further study, it will be interesting to look at the proposed framework and how it could be used by project managers to improve leadership skills in sustainable construction projects.

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