The Impacts of Project Communication Skills on the Effectiveness of Construction Project Teams in Sarawak, Malaysia

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Abstract

Team effectiveness is one of the factors in ensuring a project's success in the construction industry. Many previous researchers reported that effective communication between team members can help enhancing the effectiveness of a project team and that poor communication is one of the causes of poor project performance in the construction industry. There are numerous research being conducted by previous researchers related to the impacts of project communication skills on the effectiveness of construction project team. However, there are insufficient similar research being conducted in Sarawak, Malaysia. Similar research should be conducted in Sarawak to enhance the performance of project teams. Therefore, the present research aims to study the impacts of project communication skills on the effectiveness of construction project team in Sarawak. The objectives of the research are (i) to identify the most important communication related skills which lead to project team effectives & characteristics of effective project teams and (ii) to assess the correlation between the communication related skills and characteristics of effective project team. The present research adopted a quantitative research approach. The sampling methods adopted were non-probability convenience sampling method and snowball sampling method. Structured questionnaires that use a 5-point Likert scale were sent to approximately 350 companies consisting of construction companies, developers, and consultant firms in Sarawak to collect primary data. The 200 valid responses received were analyzed using SPSS descriptive statistics in order to achieve objective 1. The result shows that the top 3 communication related skills are persuasion, able to ask effective questions during conversation, and explaining while the top 3 characteristics of effective project team are free flow communication, team flexibility to change, and seamless operation with no organizational boundaries. In order to achieve objective 2, Spearman Rank Order Correlation analysis was subsequently conducted to assess the correlations between all the communication related skills and the characteristics of effective project team. The result

reveals that 6 out of 8 communication related skills have either medium or strong positive correlations with 9 characteristics. The present research indicates that communication skills can influence the effectiveness of a project team. Therefore, construction practitioners in Sarawak can put in efforts in maintaining good communication between project members so as to ensure smoother delivery of construction projects. For future research, it is suggested that similar research can be done in other states of Malaysia so that the results can be compared with the present research to give a bigger picture of the communication issues in Malaysia.

Keywords: Communication Skills; Effectiveness Of Construction Project Team; Correlation

Introduction
Effective communication is an important factors in ensuring projects' success (Tahir, 2019). Taleb et al (2017) found that project managers typically spent 90% of their time in communicating with different project participants. Besides, many research have revealed that poor communication is one of the causes of poor project performance in the construction industry (Gamil, et al, 2019; Lubis, 2021; Rahman and Gamil, 2019; Subramaniam et al., 2020). Poor communication between project members may lead to project delay, poor project quality, disputes between the members, member's frustration, and poor morale (Olanrewaju et al., 2017). Rahman and Gamil (2019) also found that the top three effects of poor communication in construction industry is high stress in workplace, cost overrun, and information overlapping. Therefore, the project manager needs to enhance the communication between project team members as well as project stakeholders to ensure a project's success (Malik et al., 2021; Ekwuno, 2022). There are numerous research being conducted by previous research to study the relationships between communication and project performance. However, there is lack of research studies related to the correlation between the communication skills and effective project team. Therefore, the present paper aims to study the impacts of project communication skills on the effectiveness of construction project team in Sarawak. The objectives of the research are (i) to identify the most important communication related skills which lead to project team effectives & the most important characteristics of effective project teams and (ii) to assess the correlation between the communication related skills and characteristics of effective project team. The research process and findings are explained in this paper.

Literature Review
Communication related skills
"Listening" is an important communication skills (Bodie, 2019; Duwadi, 2014; Ekwuno, 2022; Ogunsanmi, 2016; Usanase & Nkechi, 2022). Through attentive listening, one can understand the message from the speaker and meaning behind the message. Galli (2021) stated that effective communication requires active listening so that the project team will be able to receive accurate project information. Besides, active listening also allows a project manager to collect new ideas from his team members (Galli, 2021).
"Able to ask effective questions during conversation" is also an important communication skills (Ekwuno, 2022; Stapleton, 2019). By asking questions, one can obtain information, diagnose problems, initiate interaction, and control the content of communication (Stapleton, 2019). When working as a team, the experienced team members can assist less experienced members and enhance team communication by asking questions (Zulch, 2016).

"Persuasion" is another important skill in communication (O'Keefe, 2019). Zulch (2016) had defined "persuasion" as "the art of guiding, convincing and directing team members towards a form of preferred behavior, attitude or belief." A project manager can adopt this skill to guide and direct team members in order to ensure a project's success.

The authors had also identified other communication related skills including explaining (communicating clear information), self-disclosure (revealing information such as personality and skills to reduce uncertainty and enhance understanding between team members), reinforcement (reacting to information using expressions and gestures to appreciate the inputs), motivating, and conflict resolving. These communication skills were included in the survey questionnaire of the present study.

Characteristics of effective project team

One of the important characteristics of an effective project team is "focusing on goals and objectives". To ensure a project's success, a project manager needs to set attainable project's goals, define the roles of team members, and direct the team towards goal achievement (Henkel & Marion, 2019, Rezende et al., 2019). With clear goals, all team members are able to understand how they can contribute to achieving the goals (Gautam, 2018). The whole team will be more effective since they can work towards the common goals (Moradi et al., 2020).

The other characteristic is "team trust". When there is trust in a team, the team members would cooperate with each other in completing their tasks. A survey conducted by Morrissette and Kisamore (2020) also revealed that trust within a team may foster high level of team performance. Similarly, Ishak et al. (2019) also found that mutual trust is an important element to improve team effectiveness. A team with trust tends to "exhibit intense loyalty and dedication to each other" (Iorhen, 2019).

"Free flow communication" is also an important characteristic of an effective project team. Miscommunication may lead to conflicts and hinder a project's success. Therefore, the project manager must develop a suitable communication mechanism to ensure healthy communication among the team members (Malik et al., 2021). When the team members are allow to share their ideas and feeling freely, misunderstandings may be reduced (Iorhen, 2019). According to Ishaq et al (2019), good communication is a crucial element of a project team and it is necessary to ensure the successful delivery of a project.

Other characteristics of an effective project team include no blame culture, commitment from the top management, team flexibility to change, collective understanding, seamless operation with no organizational boundaries, good information sharing, and encouraging initiative.

Research Methodology

A quantitative research approach had been adopted for the present research. This is because the authors wanted to collect responses from a large number of sources (Queirós et al., 2017), thereby increasing the generalizability of the research findings (Daniel, 2016). Figure 1 shows the research process of the present research.
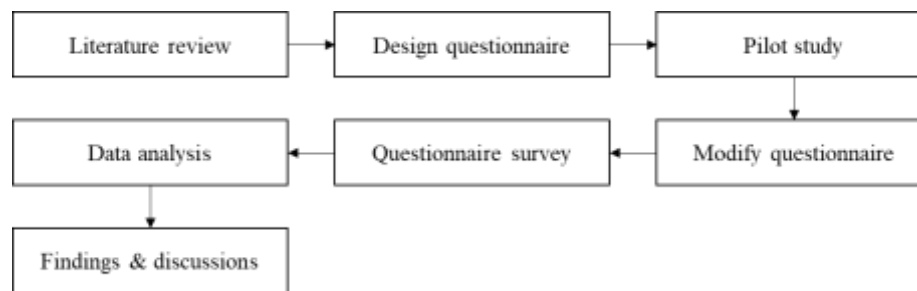
Figure 1: The research process of the present research

A non-probability convenience sampling method was adopted to collect primary data. Questionnaires were sent to approximately 350 companies consisting of construction companies, developers, and consultant firms in Sarawak via email and Google Forms as well as sent by the authors in person. Apart from that, a snowball sampling method was also adopted. The person in charge of each company was requested to distribute the questionnaire forms to other project team members in his/her companies. This sampling method had helped increasing the number of responses.

The questionnaire used for the present research consisted of 3 sections. Section 1 was to collect the general information of the respondents including type of company, designation in the company, and years of working experience. Section 2 was designed for objective 1 in order to find out (i) whether or not the respondents agree that the 8 project communication skills on the list are crucial in enhancing team effectiveness and (ii) whether or not the respondents agree that the 10 characteristics on the list are important characteristics of an effective construction project team. The rating was based on a 5-point Likert scale, where 1 = Strongly agree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly agree.

Section 3 was designed for objective 2. Under this section, the respondents were required to answer two questions based on an on-going project. For Question 1, the respondents have to rate how often their project team adopt the 8 communication skills in the selected project based on a 5-point Likert scale, where 1= Never, 2 = Rarely, 3 = Sometimes, 4= Often, and 5 = Always. As for Question 2, the respondents have to rate whether or not their project team possess the 10 characteristics of a good project team based on a 5-point Likert scale, where 1= Not at all, 2 = Very little, 3 = Somewhat, 4 = Very much, 5 = To a great extent.

In order to achieve objective 1, the collected data were analyzed using SPSS descriptive statistics. Through this method, the mean values and standard deviations of all communication related skills and characteristics of effective project teams were calculated for the researcher to identify the important skills and characteristics. In order to achieve objective 2, Spearman Rank Order Correlation analysis was subsequently conducted to assess the correlations between the communication related skills and the characteristics of effective project teams. The correlation values are interpreted following the guidelines suggested by Cohen (1988) as follows:

Small	r = .10 to .29
Medium	r = .30 to .49
Large	r = .50 to 1.0

Findings and Discussions
In total, 200 valid responses were received and analyzed. The general information of the respondents is presented in Figure 2 to 4. The responses were received from contractors (100), developers (60), and consultants (40). There are 104 male and 96 female respondents.

The majority of respondents are quantity surveyors (32%), engineers (20%) and site supervisors (19%). There are 78.5% of respondents who have more than 5 years working experience.

Figure 2: Current company of respondents

Figure 3: Designation of respondents

Figure 4: Working experience of respondents

In order to achieve objective 1, the 200 valid responses were analyzed using SPSS descriptive statistics (mean and standard deviation). The results are presented in Table 1 and 2.

Table 1:

Rankings of The Project Communication Skills

	Project communication skill	Mean value	Standard deviation	Ranking
1.	Persuasion (guiding, convincing and directing team members)	3.790	0.933	1
2.	Able to ask effective questions during conversation	3.530	0.672	2
3.	Explaining (communicating clear information)	3.500	0.680	3
4.	Reinforcement (reacting to information using expressions and gestures to appreciate the inputs)	3.305	0.636	4
5.	Listening	3.300	0.657	5
6.	Conflict resolving	3.285	0.637	6
7.	Motivating	3.275	0.641	7
8.	Self-disclosure (revealing information such as personality and skills to reduce uncertainty and enhance understanding between team members)	3.275	0.679	7

Table 2:

Rankings of The Characteristics of Effective Project Teams

Characteristic of effective project teams		Mean value	Standard deviation	Ranking
1.	Free flow communication	3.810	0.705	1
2.	Team flexibility to change	3.770	0.939	2
3.	Seamless operation with no organizational boundaries	3.720	0.993	3
4.	No blame culture	3.525	0.743	4
5.	Team trust	3.360	0.815	5
6.	Focusing on goals & objectives	3.340	0.805	6
7.	Good information sharing	3.225	0.661	7
8.	Commitment from the top management	3.195	0.670	8
9.	Collective understanding	3.195	0.735	8
10.	Encouraging initiative	3.185	0.610	10

As shown in Table 1, "persuasion" is ranked 1st with a mean value of 3.79. With persuasion skill, the leader can direct and convince team member towards the goals (Zulch, 2016). "Able to ask effective questions during conversation" is ranked 2nd with a mean value of 3.53. By asking questions, one can obtain more accurate information and control the content of communication (Stapleton, 2019). "Explaining" is ranked 3rd with a mean value of 3.50. It is an important skill because it provides an avenue for the stakeholders for discussion. Proper communication through explanation could potentially reduce the conflict within project team yet ensuring good information sharing (Assaf et al., 2014).

As shown in Table 2, "free flow communication" is ranked 1st (mean value 3.81). It is an important characteristic because it can prevent miscommunication (Malik et al., 2021). Besides, conducive environment for communication also allows team members to share ideas and feeling freely, thereby improving project success rate (Iorhen, 2019; Isahq et al., 2019). "Team flexibility to change" is ranked 2nd (mean value 3.77). Many respondents agreed that it is an important characteristic of an effective team. A research conducted by Sohi, Bosch-Rekveldt and Hertogh (2019) revealed that open and proactive attitudes (which contribute to flexibility in project management) have positive significant impact on project performance. "Seamless operation with no organizational boundaries" is ranked 3rd (mean value 3.72). This could be due to flat/boundary-less organization "promise higher levels of efficiency or efficacy" (Alexey, 2022).

In order to achieve objective 2, Spearman Rank Order Correlation analysis was subsequently conducted to assess the correlations between all the communication related skills and the characteristics of effective project teams. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. Table 3 shows the medium and large correlations generated through the correlation analysis. In this research, only positive correlations are analyzed and discussed. The result reveals that 6 out of 8 communication related skills have either medium or strong positive correlations with 9 characteristics.

Table 3: Correlations of project communication skills and the characteristics of effective project teams

Correlation		Free flow communication	Team flexibility to change	Seamless operation with no organizational boundaries	No blame culture	Team trust	Focusing on goals & objectives	Good information sharing	Commitment from the top management	Collective understanding
		Mean: 4.19	Mean: 3.60	Mean: 3.79	Mean: 3.61	Mean: 4.60	Mean: 4.49	Mean: 4.60	Mean: 3.80	Mean: 4.10
Able to ask effective question (Mean: 4.29)	Correlation Sig. (2-tailed) N	.552** .000 200	.671** .000 200					.471* .000 200	.472** .000 200	.646** .000 200
Explaining (Mean: 4.31)	Correlation Sig. (2-tailed) N				.386** .000 200			.347** .000 200	.335** .001 200	
Reinforcement (Mean: 3.90)	Correlation Sig. (2-tailed) N			.322** .001 200	.505** .000 200					.380** .000 200
Listening (Mean: 4.41)	Correlation Sig. (2-tailed) N					.484** .000 200				.442** .000 200
Conflict resolving (Mean: 3.60)	Correlation Sig. (2-tailed) N						.516** .000 200	.335** .001 200	.596** .000 200	
Motivating (Mean: 3.41)	Correlation Sig. (2-tailed) N									.711** .000 200

**Correlation is significant at the 0.01 level (2-tailed)
*Correlation is significant at the 0.05 level (2-tailed)

"Able to ask effective question" have medium correlation with "good information sharing" (0.471) and "commitment from the top management" (0.472) while strong correlation with "free flow communication" (0.552), "team flexibility to change" (0.671), and "collective understanding" (0.646). This seems to imply that the increased ability in asking effective questions could assist with developing the other three project team characteristics. Information sharing and flowing could occur through asking questions and generating ideas, and possibly reducing asymmetric information among the project stakeholders. Ibrahim et al. (2013) supported information sharing as one of the key competencies for operative construction team collaboration. However, the ability in asking effective question comes along with the commitment from management in creating a conducive environment. The management of project team could ask inspiring questions for assisting with the project's goals (Englund and Graham, 2019, p.159). Moreover, information sharing assists proper communication in ensuring cooperation between contractors and clients (Ishaq et al., 2019). Such finding is in line with Wu et al. (2017) that proper communication reduces conflict in achieving collective understanding among stakeholders.

"Explaining" has medium correlation with "no blame culture" (.386), "good information sharing" (.347) and "commitment from the top management" (.335). Involvement of various stakeholders in a project could potentially create blaming culture. Ibrahim et al. (2013) stated that 'blaming culture' could be a norm within a project as one of the risk transfer strategies. Explaining, as one of the project communication skill, could assist project stakeholder in clarifying the reason(s) of certain decisions and providing an avenue for the stakeholders for discussion. As such, 'no blame culture' could potentially be created. Information sharing is essential especially with the evolvement of big data and construction revolution 4.0. However, uncertainties occurred through information sharing as issues such as copyright and risks appear (Demirkesen and Tezel, 2021; Lau et al., 2019). Proper communication through explanation could potentially reduce the conflict within project team yet ensuring good information sharing (Assaf et al., 2014). Moreover, support from top management seems essential in creating a cultural change towards an organization (Ibrahim et al., 2013) and this could possibly affect project communication among stakeholders. Kwofie et al. (2015) accentuated that support from top management in providing training for communication skill could enhance the team efficiency.

"Reinforcement" has medium correlation with "seamless operation with no organizational boundaries" (.322) and "collective understanding" (.380) while strong correlation with "no blame culture" (.505). The complex construction project nature involve multiple stakeholders and organizations. Ideal situation would be sharing knowledge, skills and experience without boundaries for project effectiveness (Ibrahim et al., 2013). This shall come hand-in-hand with the reinforcement of the project goals and clear contractual obligations and ownership among the construction stakeholders. As such, 'collective understanding' among stakeholders could be assured on the decision making of different tasks. Moreover, acknowledging and reinforcing the responsibilities of stakeholders could assist with breaking the blaming culture within the industry (Gai et al., 2020).

"Listening" has strong correlation with "team trust" (.484) and "collective understanding" (.442). This seems to indicate that good listening skill is one of the important factors for shaping team trust and collective understanding within a team. Attentive listening could ensure accurate information being received as all stakeholders could be on the same page on the collectively agreed decisions (Ejohwomu et al., 2017; Ibrahim et al., 2013). Listening, as part of the essential element in communication skills, undeniably contributing towards project effectiveness and succeed (Ejoywomu et al., 2017). Additionally, trust and rationale influence for the successful collaboration among stakeholders and communication is unavoidable in construction project due to the involvement of multiple stakeholders (Coleman and Stern, 2018; Ishaq et al., 2019).

"Conflict resolving" has medium correlation with "good information sharing" (.335) while strong correlation with "focusing on goals & objectives" (.516) and "commitment from the top management" (.596). Kwofie et al. (2015) accentuated that free-flow of communication among project team members could assist with conflict resolving. This seems to indicate that conflict resolving is positively correlated with good information sharing. Focusing on goals and objectives allows project team in moving towards the same direction. However, common understanding shall be achieved prior to goal development (Bryson et al., 2016) as clear goal allows team members to understand their roles and contributions. This indirectly could reduce conflict among team members. Scholars argued that conflict among diversify stakeholders is one of the project risk factors (Hussein and Klakegg, 2014). Top management

support and humble leadership seems essential in reducing conflict and contributing towards project success (Ali et al., 2021).

Based on the result generated (refer to Table 3), the strongest correlation (.711) is between "motivating skills" and "collective understanding". This strong correlation points out that motivated team members could assist with forming collective understanding among the members. Motivating skill undoubtedly requires substantial input which further leads to effective project team (Kwofie at al., 2015; Obot et al., 2014). Question arose if motivating skills positively or negatively affecting the collective understanding of the project team. One could argue that motivating skill may not work for the passive team members and hence deprive the goal for collective understanding as the team members may feel pushy through the so-called "motivational or encouragement" talk. Arguably, Mayfield et al. (2015) proposed that motivating language encourages feedback in both internal and external stakeholders of an organization. This seems to imply on the essentiality of collaborative leadership in achieving mutual and collective understanding among stakeholders.

Limitation of study

Firstly, this research was only conducted within Sarawak, Malaysia. Therefore, the results should not be generalized beyond Sarawak. Secondly, only positive correlations between the communication related skills and characteristics of effective project team were analyzed and discussed in this research. The negative correlations shall be interpreted in future research.

Conclusion

The results show that the top 3 communication related skills are persuasion, able to ask effective questions during conversation, and explaining while the top 3 characteristics of effective project team are free flow communication, team flexibility, and seamless operation with no organizational boundaries. In order to achieve the objective 2, Spearman Rank Order Correlation analysis was subsequently conducted to assess the correlations between all the communication related skills and the characteristics of effective project teams. The result reveals that there are 6 communication related skills that have either medium or strong correlations with certain characteristics. The strongest correlation (.711) identified is between "motivating" and "collective understanding". This is followed by correlation of (.671) between "able to ask effective question" and "team flexibility to change" and correlation of (.646) between "able to ask effective question" and "collective understanding". The present research indicates that communication skills are important in ensuring the effectiveness of a project team. Therefore, construction practitioners in Sarawak can put in efforts in maintaining good communication between project members so as to ensure smoother delivery of construction projects.

Acknowledgement

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