Impact of Communication on Work Productivity in Construction Industry

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Abstract

The need for effective delivery in language has always been given emphasis among speakers. The process of transferring accurate and concise information has proven to be closely related to work performance and progress for any field. Furthermore, the presence of technology in today's communication has made daily life routines much more straightforward. However, some forms of communication require face-to-face interaction in order to prevent miscommunication and misunderstanding. This study was carried out to determine effective language delivery among site engineers working in construction sectors from selected states in Malaysia. The study created an overview of how communication affects productivity in completing tasks on time. An online survey was conducted through social media on construction site supervisors around Malaysia in getting their feedback related to the medium used to communicate with their co-workers and the importance of the English language for communication in the construction industry. Results indicated that language barriers had affected workers'

productivity. The lack of effective delivery of information and delivery of instruction caused delays in project delivery in the sector of construction in Malaysia.

Keywords: language barriers; communication; construction industry; productivity

1. Introduction

Communication is an essential tool in socializing and also communicating. The process of delivering messages from sender to receiver can be carried out verbally or non-verbally. In its genuine meaning, communication involves expressing oneself (an idea, an impression, of feelings) and other reporting relationship with the World (Tomescu-Dumitrescu, 2016). In the construction industry, accurate and concise information in communication is critical in ensuring that a project runs undisturbed. It is especially essential in construction sites where most processes depend on communication quality (Renault & Agumba, 2016).

Communication is a strategic consideration where most construction disputes are due to breaches or inadequate communication among the team members (Olanrewaju et al., 2017). The presence of poor communication of design information often leads to design problems, leading to delays and poor quality (Olanrewaju et al., 2017). In delivering, confirming, and exchanging essential information regarding a project, proper attention is required from authoritative engineers on site. Communication is a process of exchanging information, news, knowledge, and instructions between two or more people (Radosavljevic & Bennett, 2012).

Site engineers play a crucial role in the construction industry in distributing instructions to local and foreign workers or delivering reports to the management. Harikrishnan and Manoharan (2016) mentioned that project reports, formal communication, and team meeting discussions were among the significant communication channels related to problems in the construction industry. Furthermore, ineffective reporting and lack of communication systems and platforms (Dainty et al., 2006) are also among other problems in the construction industry. Besides the job scope as an engineer, personal attributes like poor communication skills also affect the progress of a project (Emuze & James, 2013).

Aside from the problems encountered in communication, it could also alter others effects which could lead to other significant problems and eventually affect the success rate of construction. According to Laihonen et al. (2014), the lack of effective communication between construction parties could result in a negative experience, and

eventually, this could affect the timeframe of a project. Rahman et al. (2013) later supported this, where poor communication results in time overrun for projects. Moreover, due to problems faced in communication, it could also lead to changes in cost overrun, which could be less beneficial to all parties (Mydin et al., 2014).

2. Literature review

2.1 Communication in the Construction Industry

Communication is undoubtedly unmistakably important in executing project tasks in any field, which is beyond any doubt, applies to the construction industry. It is very pivotal that effective information exchange is accomplished throughout the whole course of the project. According to Zulch (2014), communication is the transmission of meaning from one to another, whether verbally or non-verbally. Therefore, practical communication skills are essential skills that a site engineer must possess to ensure that a project runs smoothly. Another critical view of communication shows that it can carry different meanings, contexts, and types depending on the specific discipline (Gamil & Rahman, 2017). Based on the projection on the number of articles on poor communication in the construction industry (Gamil & Rahman, 2017), it is evident that there is a gradual increase in the past 20 years regarding the study of communication in the construction industry, and more is yet to come based on the expansion of projects worldwide.

In this line of work, communication is regarded as the mutual exchange of information when a sender sends a message (project information), and the receiver decodes the message. Hence, this is carried out in order to achieve an understandable platform among both parties. A project manager must develop interpersonal skills in understanding and disseminating information in the most appropriate manner Zulch (2014).

Construction projects are multimillion businesses, and many stakeholders involved in these projects require proper analysis and transmission of information on every project. Well-communicated project information would help improve the project's performance in cost, time, quality, sustainability, and comfort (Subramaniam et al., 2020). However, communication effectiveness in the construction industry is somewhat affected by insufficient channels and unreliable data transfer. Therefore, it is crucial to constitute effective communication channels to maximize and improve the communication process.

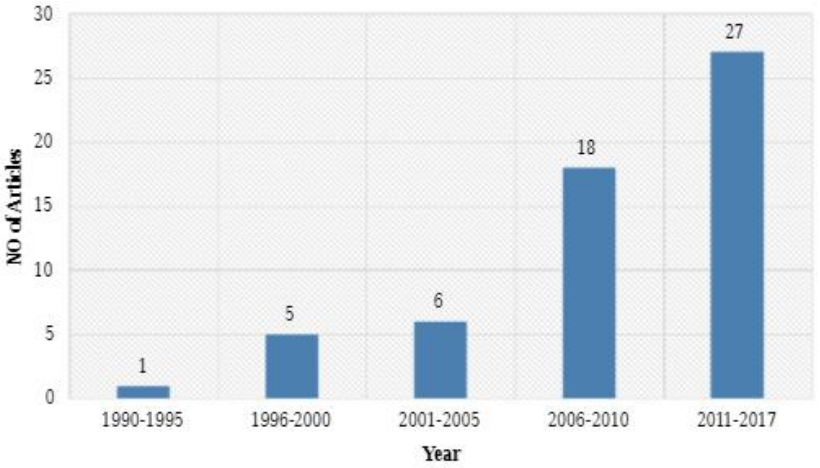

Figure 1. No of Articles on Poor Communication in Construction Industry (Gamil & Rahman, 2017)

2.2 Communication

Communication is essential in every aspect of life, where one uses different ways and mediums to get our messages across to the other party. According to Othman et al. (2018), communication is a unique process that continues and runs throughout the project life cycle. In another study, Perumal and Bakar (2011) stated it is a process where the information provided to the first party was then encoded and imparted by a sender to receiver via a channel or medium. It was then further explained that there are three categories: written, verbal, and non-verbal. For written communication, messages are delivered via letters, emails, memos, reports, and formal documentation, while the delivery of verbal communication is done through chat, presentations, and voicemails. The third category, non-verbal communication, makes full use of signals and body language to communicate. The different types of communication have something in common. This includes auditory means of speaking, singing, tone of voice, non-verbal or physical means of body language, sign language, eye contact, and written communication (Perumal & Bakar, 2011).

In an organization in a Malaysian setting, communication, particularly in the English language, is essential as it also serves as the medium of internal and external communication (Moshleifar & Ibrahim, 2012). In various situations, communicating in

English effectively and confidently would allow for active communication to take place and give way for a common understanding between parties. Valitherm (2014) also mentioned that for productivity and work efficiency to be increased, communication needs to be improved, which shows that communication has a great significance in our lives. The inability to communicate appropriately will affect opportunities for career advancement because one would likely be overlooked or given assignments below one's level of capability and understanding (Valitherm, 2014).

2.3 Communication System

In construction, the communication system is complicated and divided into several sections due to the industry's nature. According to Ballan and El-Diraby (2011), even in a simple project, different people are responsible for the project's communication, including contractors (general contractor, design-builder, and construction manager), developer subcontractor, and finally, owner or client. Similarly, Gamil and Rahman (2017) also stated how channels in all organizations manage communication. Each department or section in the organization is responsible for distributing the relevant information to formulate a complete communication system. The distribution of information is delivered via verbal or written instruction or through Whatsapp messages or video calls.

According to Perumal and Bakar (2011), it is essential for everyone involved in the project at all stages, from inception to completion, to have proper and good communication skills in verbal, written, and contractual terms. It was also further stated that it is vital for an organization to have communication planning, flow, structure, and document standardization to enhance their project. Tipili et al. (2014) also mentioned that unclear channels of communication frequently cause project delays. Therefore, it is pertinent that communication channels in the construction industry should be standardized to make the communication process much easier for relevant stakeholders.

3. Research Method

For the research design of this study, survey research was used in determining construction site supervisors' feedback related to the medium used to communicate with their co-workers and the importance of the English language for communication in the construction industry. The questionnaire was constructed based on inquiries to 30 site engineers (civil) and reviews from literature. The questionnaire was distributed via Google Forms through the use of social media. The use of online survey tools has

become standard data collection instruments in the network environment today (Raju & Harinarayana, 2016). Invitations to complete the survey were sent to respondents to retrieve their feedback regarding language delivery among site engineers at construction sites. The data collected was analyzed using Statistical Package for the Social Sciences (SPSS) software in calculating the mean scores and standard deviation for questions in the survey. The results of the survey were presented in the form of tables according to specific sections.

4. Findings

4.1 Project Background

From Figure 2 below, the location and types of the project are presented as follows. The number of states involved in the study is totaled seven. The majority of the respondents were from Selangor, which was 15 (46.875%). Terengganu follows this with four respondents (12.5). Two states had 3 (9.375%) respondents, respectively, Kuala Lumpur and Pulau Pinang. Meanwhile, three other states also had the same number of respondents, 2 (6.25%) at Pahang, Kelantan, and Johor. Melaka was the last state with one respondent (3.125%).

Besides the location of the respondents, Figure 3 displayed the types of projects in which the respondents are currently involved. From the data analyzed, 24 (75%) respondents are in large construction projects and are primarily from Selangor. Meanwhile, 4 (12.5%) respondents are involved in housing projects. In the oil and gas industry related to construction, 2 (6.25%) respondents were involved, and the remaining projects were automation and track work, with one respondent each (3.125%).

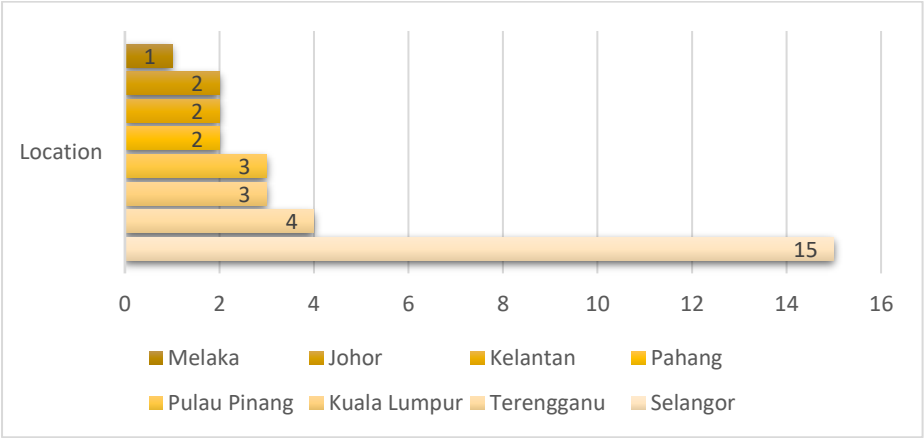

Figure 2. Location

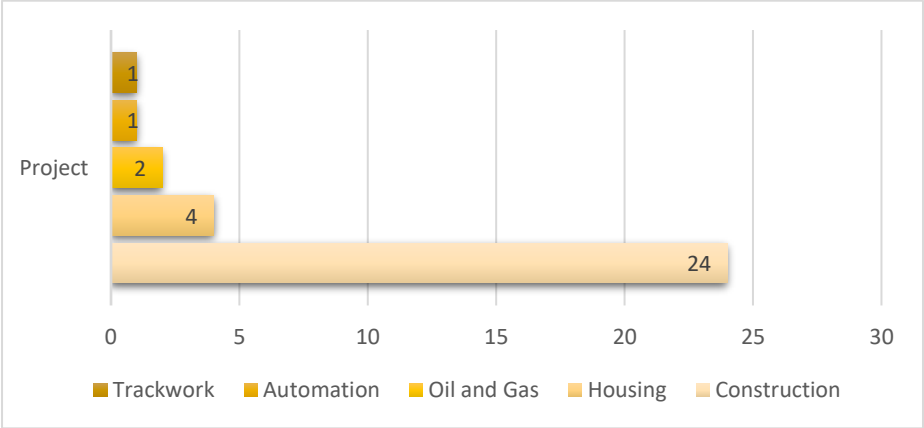

Figure 3. Types of Project

Based on the data from Figure 3, most of the projects in this survey were large construction projects and primarily located in Selangor. This is due to the fact that Selangor is the centre of the nation's economic hub, and many stakeholders are investing in this particular state. Seeing the involvement and benefit from these projects towards the nation's socio-economic, the researcher must investigate the language used in this field and how it affects the progress of a project.

4.2 Medium of Communication

Figure 4 shows the communication medium used in communicating with general foreign workers in the construction industry. From the data presented, a total of 36.7% identified respondents stated 'Most Frequent' in using 'Face-to-face meetings' to communicate with their general foreign workers. The use of communication medium in communication recorded 16.7% of respondents who used 'Telephone' and 23.3% who used 'Whatsapp/Telegram' respectively.

**Out of 100 times that you communicate with other general foreign workers, how many times is with:*

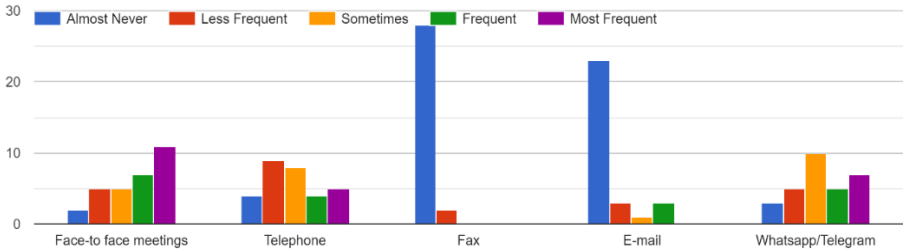

Figure 4. Medium of Communication

In contrast, a large number of respondents, with 93.3%, stated 'Almost Never' in using 'Fax' or 76.7% stated 'Almost Never' to use 'Email' to communicate with their foreign co-workers in the construction industry. This has proven that telecommunication medium is as important as face-to-face communication when communicating with general foreign workers in getting the job done.

4.3 Language Barriers in Communication and Instructions at Construction Site

Barriers in language, especially at the construction site, have been seen as factors that affect the project quality. Hence, Table 1 below, it showed the results of language barriers in communication and site instructions (English) among civil engineers at selected states in Malaysia. The questions are varied in overall effect on the project, progress of project delivery, quality of work, and requirement of English training.

Table 1: Language Barriers in Communication and Site Instructions (English) Among Civil Engineers

Items	Mean	Std. Deviation
English efficiency when communicating with foreign general workers	3.25	1.16
Briefings carried out in English to foreign general workers	2.84	1.13
Efficiency of instructions given to foreign general workers in English	2.65	1.09
Effectiveness in presenting/delivering reports to management in English	3.84	.807
Repetition of instructions in English to foreign general workers	3.12	1.26
English level in terms of usage and understanding	4.96	1.12
The use of a translator when giving site instructions	2.65	1.33

As seen in table 1, feedback from the respondents regarding 'English efficiency when communicating with foreign general workers' showed a Mean score of 3.15 (SD:1.16). The majority of the respondents answered 'neutral' followed by 'Efficient' and 'Most Efficient'. The finding indicates that not all 32 respondents are efficient in using English as the medium to foreign workers. Next, 'Briefings carried out in English to foreign general workers' displayed a Mean score of 2.84 (SD: 1.13). Here, 15 respondents (majority) answered 'Neutral', which shows that briefings are not entirely conducted in English.

As for 'Efficiency of instructions given to foreign general workers in English', the Mean score was 2.65 (SD:1.09). Eighteen respondents selected neutral, and this displayed that respondents are aware of ineffectiveness in the instructions. For 'Effectiveness in presenting/delivering reports to manage in English', the Mean was scored at 3.84 (SD:0.807). 13 respondents answer 'neutral' and 11 answered 'effective'. However, only eight respondents selected 'Most Effective', which meant that there could be a deficiency in delivering information to the management.

In response to 'Repetition of instructions in English to foreign general workers', the Mean is scored at 3.12 (SD:1.26). Many respondents agreed that instruction was constantly repeated in the delivery process due to concerns of misunderstanding. Regarding the 'English level in terms of usage and understanding', the Mean score was 4.96 (SD:1.12), where 17 respondents answered 'Good', which displayed that not all respondents were proficient. Afterward, the question on 'The use of a translator when giving instructions' scored a Mean of 2.65 (SD:1.33). This showed that some respondents used translators as their second medium of instruction to foreign general workers.

4.4 Language Barriers among Foreign Workers

Language deficiency has also been identified as one of the elements that disturb the progress project timeline. Thus, Table 2 below showed the analysis of language barriers towards the quality and progress of construction projects at selected states in Malaysia.

As seen from Table 2, 'Differences in language effects work progress' showed a large number of the respondents strongly agreed that differences in language have a vast effect on a project's progress with a Mean score of 3.93 (SD:1.07). In addition, most of the respondents agreed that miscommunication and misunderstanding could have drastic effects on the project's completion timeline. This can be seen from the item 'Miscommunication/misunderstanding delays project completion' displayed a high Mean score of 4.25 (SD:1.15).

Table 2: Language Barriers Towards the Quality and Progress of Construction Projects

Items	Mean	Std. Deviation
Difference in language effects work progress	3.93	1.07
Miscommunication/misunderstanding delays project completion	4.25	1.16
Unclear instruction affects working quality	4.59	.665
Company should provide English training for staff and workers	3.65	1.15

Furthermore, for 'Unclear instruction affects working quality', a Mean score of 4.59 (SD:0.665) from the respondents illustrated that the majority strongly agreed regarding the effects of unclear instruction at construction sites. Finally, regarding the statement 'Company should provide English training for staff and workers', a Mean score of 3.65 (SD:1.15) clearly showed that the respondents emphasized using the English language at construction sites.

Based on the findings above, it can be seen that communication and instructions used by the engineers are not as effective as it should be and as a result, affects the quality of the project. According to Aulich (2013), communication should be based on a thorough understanding of how humans cooperate to deliver, accept and understand words. If problems related to communication become an issue when delivering information to the management or client, the quality of the project will deteriorate.

Communication skills play a fundamental role in this process's effectiveness because if a project participant lacks this skill, one is likely to conduct an ineffective communication process (Wei & Yaznifard, 2015). Not only that, communication and instructions from site supervisors have to be clear and compelling because most of the general workers working in Malaysia are from foreign countries. Wei and Yaznifard (2015) stated that this language barrier is a problem in the Malaysian construction industry, especially when the supervisors provide instructions to be carried out by the

foreign workers because their access to the English language is inadequate (Valitherm, 2014).

The downfall of this problem in communication will most definitely reflect the project's progress if instructions are not delivered effectively. Furthermore, due to the inability of foreign workers to communicate well in English, many construction companies faced numerous challenges (Valitherm, 2014; Salleh et al., 2012) to sustain and deliver on time. As mentioned in the findings, the lack of effective delivery of information and delivery of instruction caused delays in project delivery. Construction processes had to be repeated in order to meet the standard demands of the actual project. Issues in communication happen at all levels in the construction industry. However, this problem becomes more deficient when top authorities are involved, affecting their self-confidence and motivation to communicate (Omar et al., 2020).

5. Conclusion and Recommendation

As the construction industry is considered a giant sector in Malaysia, the result of this study shall positively affect the sector, thus enabling future issues to be resolved quickly. It also may help in increasing the effectiveness of communication within the construction site, therefore maximizing the Malaysian construction industry's potential. It has come to the attention that many construction projects have requested for Extension of Time (EOT) due to constraints. Hence, this will result in time overrun and cost overrun, causing delays to project delivery. For this reason, companies need to be fully aware of the problems in communication and instruction at construction sites, and this matter should not be taken lightly.

The success of a construction project is significant to stakeholders, investors, and clients. Proper preparation and training are required for staff and workers before any project is initiated to determine a sleek process (Ne'Matullah et al., 2021). Communication within construction sites is crucial for every scope of work, such as management and instructing purposes. It is essential to know what language is used explicitly for each scope of work. Confusing and inconsistant communication during the project could lead to disaster thus should be avoided.

Regarding communication within a construction site, a key to a successful project is a proper interpretation of instruction so that work can be carried out accordingly. However, it is evident that the primary source of the problem right now is the deficiency in comprehension of instructions and insufficiency in delivering reports or instructions among site engineers when using English. Therefore, by focusing only on eliminating

the limitation on communication, we can find a solution that might be reliable to be applied. As a recommendation for this study, the findings posted a need for module development in training the staff and foreign workers' communication skills before being allowed to begin working at the sites. Besides, it is necessary to seek help by selecting crew leaders to bridge communication between foreign workers and the site supervisors. These crew leaders should be provided proper practices in mastering the language of instruction to avoid EOT. The presence of crew leaders in the construction site could then minimize communication barriers amongst foreign workers. Through this, work errors and negligence could be minimized.

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