

## The Relationship between Effective Communication and Construction Risk Management among Kuantan Malaysian Construction Industries

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### ABSTRACT

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In this paper, the influence of effective communication in construction risk management among Kuantan Malaysian construction industries was assessed. Then a survey was conducted on pilot test among 10 local construction industries in Kuantan Malaysian, using stratified random sampling, out of which 10 questionnaires were collected for data analysis. Methodologically, this research is perhaps the first to study the influence of effective communication on construction risk management among Kuantan Malaysian construction industries. Using the five point Likert scale categories of risk management from previous studies. Pearson Correlation analysis output results affirmed that there is a strong positive relationship between effective communication and construction risk management among Kuantan construction industries.

#### Keywords:

Effective communication, construction risk management, Kuantan, Malaysia

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## 1. Introduction

Construction industries are one of the biggest and challenging industries in the world. It covers all dimension of human lives by providing schools, hospitals, canals, bridges, factories, airports, roads and all the facilities that is required for the betterment of life [15]. Besides that, with the development of technology, the construction industry has become a more famous and powerful sector [6]. There are a lot of industries in the world but different from construction industry because of its risk. The studies by Adeleke *et al.*, [3] revealed that, construction projects are unique because they are built only once. Furthermore, construction industries in Malaysia have contributed a lot to its economic growth [2]. In addition, since 1990s construction industry has contributed about 3-5% to the national GDP [6]. In line with that, construction industry also plays an important role on the quality lifestyle among the Malaysian population. According to Perera *et al.*, [16], the construction industry is one of the biggest dynamic, risky and challenging businesses.

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The construction industry is considered to be divisive and fragmental, where the constructing parties have to pay attention to confirming the contractual requirements [2]. In addition, the construction industry in many parts of the world has a poor image and this is because of the industry's failure to achieve the expected performance levels on its project.

An empirical study by Adeleke *et al.*, [1] revealed that risk management is known as one of the important scopes in project management ten knowledge areas. Similarly, construction project consists of many parties such as engineer, architect, project manager, quantity surveyor, designers, contractors, subcontractor and clients. Furthermore, the levels of risk in construction project always depend on the size of the project and the complexity of the project [6]. According to Tah *et al.*, [19], all the construction industries faced different types of risk and this occurs as a result of poor performance in the activities which causes the increment of the cost and delays of the project. In addition, construction project becomes more complex and difficult in their nature because of the introduction of new method on the procurement which means that many contractors have to rethink on how to treat and what approach they need to put in place within their project and organization [7]. Furthermore, Gorse *et al.*, [11] described that the construction projects involved a large number of uncertainties and can be easily exposed to high level of risk due to the nature of the construction activities, business, environment, processes and organization.

Furthermore, Adeleke *et al.*, [3] revealed that communication can be explain to be a professional practice , where appropriate rules, skills and tools can improve the utility of information. Moreover, it is understood that communication falls into different zones of meaning that enable interaction between an organizations. In addition, Adeleke *et al.*, [5] affirmed that effective communication can be seen as secret element for success. Furthermore, effective communication is vital for every organization and project team. This is because, it is important that clear information is shared at right time, right place and to the right person during the construction project. Plus, a good communication is the foundation of every successful project to a lesser extent of risk. Moreover, it is confirmed that effective communication can develop a common understanding of the message from both boundary spanners' perspective and it is essential in order to reduce some risks uncertainty, shape expectations, resolve misunderstandings, explain the options, and build both boundary spanners'. However, some of the researchers have reported that effective communication helps to resolve conflict. Thus, effectiveness of communication for the structure of building is becoming increasingly important due to the growing technical and organizational complexity of construction projects [10]. Hence, there is also growing recognition of the importance to understand the needs of the individuals and how they communicate within project team if communication is to be effective [9]. This paper aims to assess the relationship between effective communication and construction risk management among Kuantan Malaysian construction industries and the relationship between effective communication and construction risk management. This effort is to check how effective communication is among Kuantan Malaysian construction industries. Some of the researchers revealed that the management of the construction project is fully depends on how the risk and the potential opportunities are been managed [14, 20]. Hence, this paper addressed the following research questions:

RQ1: There is a significant relationship between effective communication and construction risk management among Kuantan Malaysian construction industries.

## 2. Research Methods

### 2.1 Design of the Study

This paper employs cross-sectional research design. Cross-sectional study is when the data are gathered just once, perhaps over a period of days or weeks or months. The study covers 1 district from 11 districts in Pahang which is Kuantan. The data was collected from the construction industries in Kuantan, Malaysia to answer the research questions for this research. The sample frames of 10 construction industries were selected from Pahang [13]. Out of total 10 construction industries, 10 were randomly selected for the survey, using proportionate stratified random sampling.

### 2.2 Data Collection

Following Krejcie *et al.*, [12] and Samadi *et al.*, [21], a sample size of 10 would be appropriate for a population of 10 construction industries. In an attempt to fit the expected sample size, the return rate of similar risk management studies in Kuantan was considered. Similarly, the study by Sambasivan *et al.*, [17] who studied risk factors in Malaysian construction companies had only a 2% response rate. For this research, a single representative (G7 contractor) from each company was adequate to complete the questionnaire for this research. Therefore, out of 10 distributed questionnaires, all 10 were valid. Thus, this response was considered high when compared with prior studies.

### 2.3 Statistical Analysis

Statistical Package for Social Science (SPSS) version 22 was used to analyse the collected data. The demographic profile of the companies and respondents were analysed with descriptive statistics. More so, the goodness of fit was ascertained by reliability test. Descriptive statistics like the standard deviation, percentage and mean score were also assessed. Using scale categories interpretation, values (range) was ascribed to the 5-point likert scale used in the questionnaire in ascending order as follows: 1= *very low*, 2= *low*, 3= *medium*, 4= *high*, 5 = *very high* following [4].

### 2.4 Reliability Analysis

The Cronbach's alpha coefficient threshold was used to ascertain the reliability of the entire item in this study. This was conducted on 10 samples of questionnaires from pilot test in order to be sure that the scales adopted in this study were not ambiguous and that the items within a component were measuring that same fundamental component. Thus, higher Cronbach's alpha coefficient is a sign of greater consistency among the items of each component and the assurance that the measurements are reliable.

**Table 1**  
Cronbach's Alpha Analysis

| Construct                    | Total item | Cronbach's Alpha |
|------------------------------|------------|------------------|
| Effective Communication      | 15         | 0.810            |
| Construction Risk Management | 20         | 0.729            |

Referring to Table 1, this study has achieved the minimum reliability threshold level [18], where 0.7 is regarded acceptable. However, all the Cronbach's alpha coefficient values received in this study were above the 0.7 minimum thresholds.

### 3. Results and Discussion

Tables 2 and 3 depict the demographic breakdown of the respondents and the industries that participated in this research.

**Table 2**  
Demographic breakdown of the respondents

| Respondents                       | Frequency | Percentage (%) |
|-----------------------------------|-----------|----------------|
| <b>Position in the company</b>    |           |                |
| Contract manager                  | 1         | 10.0           |
| Architect                         | 2         | 20.0           |
| Contractor                        | 4         | 40.0           |
| Project manager                   | 2         | 20.0           |
| Engineers                         | 1         | 10.0           |
| Others employees                  | 0         | 0.0            |
| <b>Working experience (Years)</b> |           |                |
| Lowest working experience         | 1         | 10.0           |
| Highest working experience        | 4         | 40.0           |
| <b>Gender</b>                     |           |                |
| Male                              | 6         | 60.0           |
| Female                            | 4         | 40.0           |

**Table 3**  
Demographic breakdown of the industries

| Parameters                       | Frequency | Percentage (%) |
|----------------------------------|-----------|----------------|
| <b>Company specialization</b>    |           |                |
| Apartment buildings              | 7         | 70.0           |
| Roads                            | 2         | 20.0           |
| Bridges                          | 1         | 10.0           |
| Others                           | 0         | 0.0            |
| <b>Company ownership type</b>    |           |                |
| Local                            | 8         | 80.0           |
| National                         | 2         | 20.0           |
| Others                           | 0         | 0.0            |
| <b>Company business location</b> |           |                |
| Local market areas               | 5         | 50.0           |
| Within few states                | 3         | 30.0           |
| Regional                         | 1         | 10.0           |
| Across Malaysia                  | 0         | 0.0            |
| International markets            | 1         | 10.0           |
| <b>Company existence (years)</b> |           |                |
| Lowest                           | 5         | 10.0           |
| Highest                          | 25        | 10.0           |
| <b>Company employee</b>          |           |                |
| Lowest                           | 80        | 10.0           |
| Highest                          | 214       | 10.0           |

Out of 10 respondents that participated in this survey, 10.0% were contract manager; 20.0% architect; 40.0% contractor; 20.0% project manager; 10.0% engineer. Their years of working experience were rated from 2 to 7. The highest (10.0%) percentage of work experience was 7 years,

followed by 5 years and 4 years respectively. As for gender, the percentage of male respondents was 60.0% compared to 40.0% female.

A total of 70.0% of the companies specialized in building apartment, another 20.0% specialized in road construction, and 10.0% specialized in bridge construction. This was followed by company's ownership with 80.0% as the highest which were local companies; 20.0% for the national companies. The company's operational business location ranged from local markets to international markets. The local company operations represent 50.0%, which was the highest percentage. This was followed by companies operating within few states, with 30.0% of the total respondents. Companies within a region were only 10.0% of the total respondents, while those that operate within the international market represent 10.0%. As regards the year of company's existence, which ranges from 5 to 25 years of experience. Finally, the size of all the sampled companies influences the number of their employees, thus, the employees rated from 80 to 214.

### 3.1 Pearson Correlation

Pearson Correlation Analysis was run to verify the relationship between independent variable and dependent variable in this study. It has been used to measure the relationship between effective communication and construction risk management. When the values are close to 1 it indicates that a strong relationship between two variables exists. If the values are close to 0, it indicates a weak relationship between the variables. The two-tailed in this correlation analysis has shown a strong positive relationship between the two variables (IV: effective communication, DV: construction risk management). Table 4 below shows the correlation strength [8].

**Table 4**  
 Correlation matrix for independent variable (EFFC) and dependent variable (CRM)

| Correlations |                     |       |       |
|--------------|---------------------|-------|-------|
|              |                     | EFFC  | CRM   |
| EFFC         | Pearson Correlation | 1     | .712* |
|              | Sig. (2-tailed)     |       | .021  |
|              | N                   | 10    | 10    |
| CRM          | Pearson Correlation | .712* | 1     |
|              | Sig. (2-tailed)     | .021  |       |
|              | N                   | 10    | 10    |

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

Table 4 and Figure 1 show the correlation matrix for independent variable and dependent variable. In detail, the result shows that effective communication (independent variable) have a significant predictor in construction risk management (dependent variable) with a strong positive correlation ( $r = 0.712$ ) at the 1% significance level (2tailed). The value of significant is 0.01 (1%) and less than 0.05. Thus, the research hypothesis in this study is supported. It can be viewed that when the employee has an effective way of communication, it will buffer risk management and reduce risk occurrence among Kuantan Malaysian construction industries.

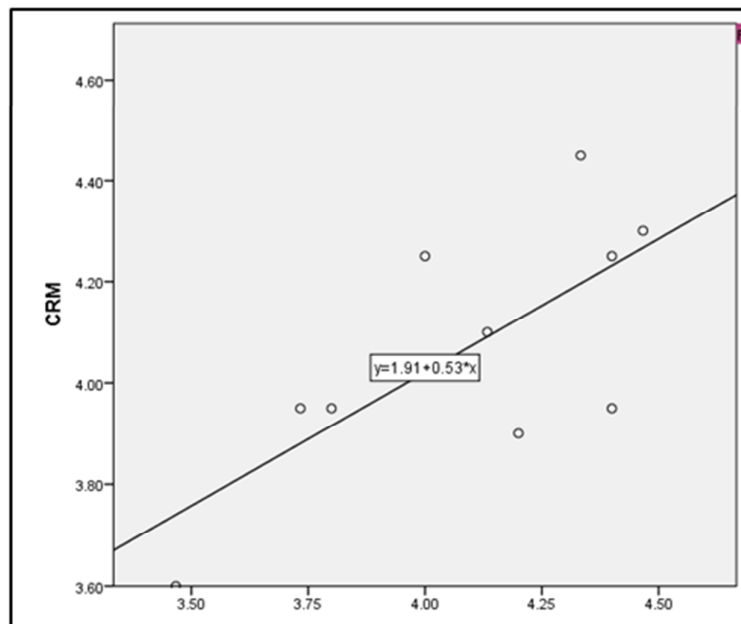


Fig.1. Correlation Scatter diagram

#### 4. Conclusion

This study was carried out particularly to investigate the relationship between effective communication and construction risk management among Kuantan Malaysian construction industries. It was discovered in this paper that there was a significant positive relationship between effective communication and construction risk management among Kuantan Malaysian construction industries, this implicates that effective communication plays a major role in curbing future risk occurrence in Kuantan Malaysian construction industry projects. The theoretical and the empirical result in this paper have added to the growing body of knowledge within this domain. This study also contributes as a framework towards risk reduction in Kuantan construction industries.

Therefore, future studies can measure the construction risk management and its implementation in other industries to give higher reliability to the application of effective communication. In the same vein, it would have been more comprehensive to study personality as another independent variable besides effective communication. Lastly, future studies also can increase the sample size for this study and use other type of analysis beside Spearman or Kendall analysis.

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