The Effect of Competency, Negotiation Model and Emotional Intelligence in the Stakeholders Capability on Result of Negotiation Construction Dispute in Indonesia

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ABSTRACT

The construction project is a series of activities that are long, complex and increase potential of construction understanding differences, disagreements, and conflicts between various parties involved in construction work. So many construction projects that cause disputes between parties. In negotiating disputes, negotiations often take place; the negotiation process requires the capability to get the best results, such as competency, negotiation model and emotional intelligence. This research based on 102 samples of respondents from 10 construction project in Indonesia among 5 highrise building projects and 5 industrial projects. Subject of research focused on the four stakeholders in the main project, which will be analyzed with the partial structural-least square equation model. The results of the analysis show that competency and emotional intelligence have significant positive effects to negotiations result in construction dispute. Negotiation model does not influence the negotiation results in the highrise building projects or industrial projects. But the results were different if the negotiation model that was added with the competency would have an significant positive effects to negotiations result in construction dispute.

Keywords: Negotiation, Competency, Emotional Intellegence, Construction, Dispute

JEL Classifications: D91, L74, O22, J53

1. INTRODUCTION

A complex Infrastructure development process activity has technology advance increase potential of construction understanding differences, disagreements, and conflicts between various parties involved in construction work. Potential for such disputes are often unavoidable and if unchecked can turn into a construction dispute. It cannot be allowed for long time. Refore, it is needed early resolution that fair and satisfactory to all parties (Pasaribu, 2012).

Based on empirical facts from the Indonesia Supreme Court for the case decisions owned have permanent legal force from the total number of civil cases amount to 16,287 (sixteen thousand two hundred ninety seven) decisions, as many as 3710 (three thousand seven hundred ten) decisions or by 22.8% is concerning cases in the construction sector, 2080 (two thousand percent twenty) decisions or 12.77% are concerning legal cases that are questioned in the agreement (Djatnika, 2018).

In the records of the Indonesian National Arbitration Board (BANI), construction disputes that get into the arbitration process dominate 420 cases handled in the period 1999-2016, namely 30.8% of the total cases which means as many as 130 cases of construction disputes (Media Indonesia, 2017).

These facts show that the process of resolving construction disputes through the negotiation stage is still largely unresolved.
However, construction service business activities in Indonesia should be avoided from the litigious minded concept of dispute resolution typical of Western societies (Nugroho, 2015). Indonesia overcomes the problem of disputes in the field of construction by way of litigation, arbitration, and alternatives to settle disputes outside the court. While alternative forms of resolution were through negotiation, mediation and conciliation (Sarwono and Galih, 2013).

That is why “deliberation to reach consensus” was made as the first step in the mechanism of construction dispute resolution. In the negotiation process, emotions play a very important role in the dispute resolution, but very often are neither understood nor effectively addressed by the parties to the dispute construction, also not properly controlled and managed by negotiator to reach peaceful dispute resolution (Edward and Natalija, 2016).

2. LITERATURE REVIEW

2.1. Negotiation

Negotiations can happen at any time within the project management life cycle and it can be either formal or non-formal. A formal negotiation involves issues regarding agreeing with contracts while information negotiations include discussions to resolve a dispute between team members (PMI, 2018).

Negotiation is a notion that is becoming more and more prevalent in our societies. Negotiation can be met at a personal, business or even international level (Leonidas and Athanasia, 2012). Negotiation is doomed if a negotiator loses the desire to continue with the discussion, and it is described as withdrawal (Cheung and Pui, 2011).

Felix and Rizky (2013) states that the measurement of assertiveness and cooperativeness requires consideration of negotiating model factors. The negotiation model was divided into 5 (five) are: (1) avoiding, (2) competing, (3) accomodating, (4) collaborating, (5) compromising. According to Zohar et al. (2019), appropriate method for dispute management as follows: (1) withdrawing, (2) forcing, (3) accommodating (smoothing), (4) confronting, (5) compromising.

Hanifah (2007) has combined matrix factors for the result of negotiations and their links in a negotiating model. Hanifah and Sukma (2007) got 7 (seven) factors from the negotiations result. These factors are: (1) problem solving, (2) conflict escalation, (3) relationship deterioration, (4) inaction, (5) further disagreement, (6) relationship maintenance, (7) conflict reduction.

2.2. Emotional Intelligence

The effective management demands effective communication skills, group interaction management and leadership abilities (Jimming and Young, 2011). Emotional intelligence reflects an individual’s emotional awareness and emotional regulation, both important factors of social interaction (Songer and Walker, 2004).

In construction organizations of Pakistan, Now-a-days, psychological capital plays an important part in success of any project specifically in construction industry. It is also noted that leaders who have high emotional intelligence can often lead their projects toward success and effect the psychological capital also (Sarwar et al., 2017).

According to Sarwar et al. (2017), the role of emotional intelligence in Pakistan can be categorized as follows: (1) hope, (2) self efficacy, (3) resilience, (4) optimism.

In another journals, Hejase et al. (2017) in construction of Lebanon, summarized the emotional intelligence variables to five primary variables as measurement parameter in their research, the role of emotional intelligence in lemon can be categorized as follows: (1) Self-awareness, (2) self-regulation, (3) motivation, (4) empathy, (5) social skills.

Whilst, using opinion of Peter et al. (2011) key personal characteristics for emotional intelligence can be categorized as follows: (1) dependability, (2) leadership, (3) self-control, (4) stress tolerance, (5) cooperation, (6) innovation, (7) adaptability, (8) initiative.

According to Edward and Natalija (2016), summarized the emotional intelligence can be categorized as follows: (1) Self-awareness, (2) self-management, (3) relationship management, (5) social awareness.

2.3. Competency in Construction

Competence is comprised of a competent team members, competent project manager and awarding bids to the right designers or main contractors (Toor and Ogunlana, 2008). Competency of the project manager is a critical factor that has been frequently mentioned in research studies (Belout and Gauvreau, 2004). The review of project manager competencies indicates that this has been broadly studied in numerous fields, such as human resource management and organization management (Sang et al., 2018).

In Construction Malaysia delay factor, Seow et al. (2018) summarized the element from competency can be categorized as follows: (1) financial skill, (2) managerial skill, (3) communication skill, (4) people management skill, (5) tecnology managemen skill.

In the construction Pakistan, Rashid et al. (2017) summarized the element from project manager competency can be categorized as follows: (1) communication, (2) team work, (3) attentiveness, (4) managing conflict.

In another journal, Tai et al. (2010) summarized the competency model for construction project team and project control team can be categorized as follows: (1) contract management, (2) process management, (3) public complianc management, (4) construction experience, (5) image management, (6) adaptability, (7) presentation skill, (8) administrative report.

The American Society of Civil Engineers (ASCE) has created 24 basic competency for an engineer, such as problem recognition and solving, risk and uncertainty, project management, communication, public policy, business administration, globalization, teamwork,
leadership, lifelong learning, and professional and attitudes (ASCE, 2008).

Based on the review of Hussin and Hamid (2006), the role or responsibilities that every project manager should have during his career life are shown below, critical analysis and judgment vision and imagination and Strategic Perspective.

According to Sanggoro et al. (2020) found that the important factors which significantly influences the stakeholders interaction to infrastructure project success: (1) risk management competency, (2) communication skill, (3) conceptual ability, (4) evaluation and problem solving ability, (5) technical Competency, (6) Managerial and Leadership Competency and (7) Intrinsic Motivation.

### 2.4. Hypothesis of Research

By considering the capability model and its variables, the hypothesis of this research is composed as follows:

- \( H_1 \): Negotiation model have significant positive effects on the negotiation result.
- \( H_2 \): Emotional intelligence have significant positive effects on the negotiation result.
- \( H_3 \): Competencies have significant positive effects on the negotiation result.
- \( H_4 \): Emotional intelligence have significant positive effects on the negotiation result through the negotiation model.
- \( H_5 \): Negotiation model have significant positive effects on the negotiation result through the competencies.
- \( H_6 \): Emotional intelligence have significant positive effects on the negotiation result through the competencies.
- \( H_7 \): Negotiation model, emotional intelligence and competencies have significant positive effects on the negotiation result simultaneously.

Hypothesis above will be used to conclude research of 3 sample datas, that is sample of highrise Project, sample of industrial project and total sample and at the end of research the hypothesis between sample data to be concluded to the response of each project and thoroughly influencing the negotiation result will be compared.

### 3. RESEARCH METHODOLOGY

#### 3.1. Research Type

Based on the method and measurement, this research is categorized in survey research using questionnaires as data source. This research type is quantitative research aiming for describing phenomenon or social symptom quantitatively or analyzing how the phenomenon or social symptoms occurred in the community is connected each other.

#### 3.2. Research Variable

Independent variables in this research consists of 3 capability of stakeholders and dependent variables in this research explain about parameter of the negotiation result. The operational of each variable can be seen in Table 1.

#### 3.3. Research Population and Sample

This research population is the stakeholders relating to and having direct influence upon the negotiation project negotiation. Four main actors of the stakeholders to be as subject of this research are the Project Owner, Design Consultant/Supervision Consultant, Sub Contractor and Main Contractor. Determination of population in this research used data from 5 industrial project and 5 highrise project.

#### 3.4. Data Analysis Technique

This research will use Partial Least Square (PLS) as supporting tool of its analysis. The Software applied in this research uses SmartPLS 3.0. According to Ghozali (2014), PLS approach is distribution free (not to assume certain distributing data, it can be

### Table 1: Information of sample

| No | Variables                                    | Indicators                        | Source                                                                 |
|----|----------------------------------------------|-----------------------------------|----------------------------------------------------------------------|
| 1  | Negotiation model (Independent Variables)    | Avoiding (X1.1)                   | Zohar (2019), Hanifah (2007)                                        |
|    |                                              | Competing (X1.2)                  | Zohar (2019), Hanifah (2007)                                        |
|    |                                              | Accomodating (X1.3)              | Zohar (2019), Hanifah (2007)                                        |
|    |                                              | Collaborating (X1.4)             | Zohar (2019), Hanifah (2007)                                        |
|    |                                              | Compromising (X1.5)              | Zohar (2019), Hanifah (2007)                                        |
| 2  | Emotional Intelligence (Independent Variables)| Motivation (X2.1)                | Hussin (2017)                                                        |
|    |                                              | Empathy (X2.2)                   | Hussin (2017)                                                        |
|    |                                              | Self-control (X2.3)              | Peter et al. (2011) Edward and Natalija (2016)                      |
|    |                                              | Optimism (X1.4)                  | Sarwar et al. (2017)                                                |
|    |                                              | Relationship management (X1.5)    | Edward and Natalija (2016)                                          |
| 3  | Competency (Independent Variables)           | Communication skill (X3.1)        | Sanggoro et al. (2020), Seow et al. (2018)                           |
|    |                                              | Complain management (X3.2)        | Tai et al. (2010)                                                    |
|    |                                              | Risk management (X3.3)            | Sanggoro et al. (2020)                                               |
|    |                                              | Leadership (X3.4)                | ASCE (2008)                                                          |
|    |                                              | Organization (X3.5)              | Rashid (2017)                                                        |
| 4  | Negotiation Result (Dependent Variables)     | Problem solving (Y1.1)           | Hanifah (2007)                                                       |
|    |                                              | Conflict escalation (Y1.2)        | Hanifah (2007)                                                       |
|    |                                              | Relationship deterioration (Y1.3) | Hanifah (2007)                                                       |
|    |                                              | Inaction (Y1.4)                  | Hanifah (2007)                                                       |
|    |                                              | Relationship maintenance (Y1.5)   | Hanifah (2007)                                                       |
|    |                                              | Conflict reduction (Y1.6)         | Hanifah (2007)                                                       |
|    |                                              | Further disagreement (Y1.7)       | Hanifah (2007)                                                       |
in the form of nominal, category, ordinal, interval and ratio). In
PLS, all standards of variance can be assumed as variance which
is useful to explain.

3.5. Research Frame Work
This research will test the interaction model influence upon
the stakeholders capability based on competency, negotiation
model and emotional intelligence to the negotiation result using
the sample standard in Highrise Project, Industrial Project and
combination of all samples from both Project. The interaction
model analyzed in this research is proposed as in Figure 1.

4. FINDING AND DISCUSSION

4.1. Description of Research Object
Total of sample used in this research is 102 stakeholders spread
in two project from each criteria of stakeholders selected. The
background information of the 102 respondents is displayed in
Table 2.

4.2. Outer Model Evaluation
This measurement model testing will be made for 3 sample data
from highrise building project, Industrial project and total all
Sample (combination of both project). This measurement model
evaluation uses Smart PLS software to get values of loading factor,
convergent validity, cronbach’s alpha (CA), composite reliability
(CR) and average variance extracted (AVE).

The reliability test in this equation must meet the requirements that
the composite reliability value must be more than 0.7 and its cronbach
alpha is more than 0.6 and set up 0.5 as a minimum value for AVE.

The results calculation process for realiblity testing with SMART
PLS of all sample data are shown good criteria in Table 3, the
result of highrise building project data are shown good criteria in
Table 4 and the result of industrial project sample data are shown
good criteria in Table 5.

4.3. Inner Model Evaluation
Result of model analysis for this evaluation is based on the result
of SMART-PLS data as in Figure 2 for measurement of all sample
data in both project, Figure 3 for the sample measurement of highrise
building project and Figure 4 for sample model of industrial project
which displaying the each value of R square and path coefficient.

Measurement for all sample data is as follows:

\[ NR = 0.075 \text{NM} + 0.818 \text{CMP} + 0.173 \text{EQ}; R^2 = 0.733; \]
\[ \text{CMP} = 0.734 \text{NM} + 0.196 \text{EQ}; R^2 = 0.689; \]
\[ \text{NM} = 0.393 \text{EQ}; R^2 = 0.154 \quad (1) \]

Definition 1: Equation model formula for all sampel data

Based on the equation (1) above, the conclusion is as follows:

- The value of $R^2$ NR is 0.733, the meaning is NR is influenced
  by NM, EQ and CMP by 73.3%, while the rest is influenced
  by other factors not examined in this research.

Table 2: Description of respondent

| Variable          | Category      | Frequency |
|-------------------|---------------|-----------|
| Gender            | Female        | 10        |
|                   | Male          | 92        |
| Working category  | Project owner | 24        |
|                   | Project consultant | 20    |
|                   | Main contractor | 47     |
|                   | Sub contractor  | 11        |
| Working experience| 0-5           | 12        |
|                   | 6-10          | 37        |
|                   | 11-15         | 40        |
|                   | 16-20         | 9         |
|                   | >20           | 4         |

Figure 1: Capability stakeholders model
The value of $R^2$ CMP is 0.689, the meaning is CMP is influenced by NM and EQ by 68.9%, while the rest is influenced by other factors not examined in this research.

The value of $R^2$ NM is 0.393, the meaning is NM is influenced by EQ by 39.3%, while the rest is influenced by other factors not examined in this research.

In Figure 3, the equation obtained from the model measurement for highrisk project data is as follows:

$$NR = 0.041 \text{NM} + 0.798 \text{CMP} + 0.182 \text{EQ} \quad R^2 = 0.751;$$

Definition 2: Equation model formula for highrise data

Based on the equation (2) above, the conclusion is as follows:

- The value of $R^2$ NR is 0.751, the meaning is NR is influenced by NM, EQ and CMP by 75.1%, while the rest is influenced by other factors not examined in this research.
- The value of $R^2$ CMP is 0.689, the meaning is CMP is influenced by NM and EQ by 68.9%, while the rest is influenced by other factors not examined in this research.
- The value of $R^2$ NM is 0.376, the meaning is NM is influenced by EQ by 37.6%, while the rest is influenced by other factors not examined in this research.

In Figure 4, the equation obtained from the model measurement for Industrial project data is as follows:

$$NR = 0.119 \text{NM} + 0.867 \text{CMP} + 0.185 \text{EQ} \quad R^2 = 0.767;$$

Definition 3: Equation model formula for all sampel data

Based on the equation (3) above, the conclusion is as follows:

- The value of $R^2$ NR is 0.767, the meaning is NR is influenced by NM, EQ and CMP by 76.7%, while the rest is influenced by other factors not examined in this research.
- The value of $R^2$ CMP is 0.701, the meaning is CMP is influenced by NM and EQ by 70.1%, while the rest is influenced by other factors not examined in this research.

$$\text{CMP} = 0.732 \text{NM} + 0.203 \text{EQ}; \quad R^2 = 0.689;$$

$$\text{NM} = 0.376 \text{EQ}; \quad R^2 = 0.142 \quad (2)$$

$$\text{NR} = 0.776 \text{NM} + 0.200 \text{EQ}; \quad R^2 = 0.701;$$

$$\text{NM} = 0.364 \text{EQ}; \quad R^2 = 0.132 \quad (3)$$
Figure 2: Equation model of all sample data

Figure 3: Equation model of high rises building sample data
4.4. Hypothesis Testing
Partial hypothesis testing is to test the influence upon the significance between predictor latent variable and criterion latent variable directly and mediation hypothesis testing is to test the significant positive effects upon the relation and significance from mediation variable towards predictor latent variable and criterion latent variable in its measurement model.

This testing is made by considering t-statistic and its t-table and between the significance value and its research significance level; in this research it uses significance level by 5% or 0.05. Criteria of this hypothesis testing is as follows:

Hypothesis:
Accept $H_0$ and reject $H_a$, if:
Significance $>0.05$ or t-stat. $<t$-table
Accept $H_a$ and reject $H_0$, if:
Significance $<0.05$ or t-stat. $>t$-table

The partial hypothesis and mediation hypothesis of the significance value and t-statistics of this model measurement is presented in Table 6.

4.5. Simultaneous Hypothesis Testing
This hypothesis is used to know the influence upon the relation and significance effect between independent variable and dependent variable simultaneously. To test this hypothesis by comparing between F-statistic to $F_{calc}$ Table. F-calculation is obtained from the calculation with formulation as follows:

Definition 4: $F_{statistic}$ formula for simultant hypothesis testing

Particulars:
$n=$Total sample
$k=$Total independent variable
$R^2=$Influence value
F = \frac{(n-k-1)R^2}{k(1-R^2)} \tag{4}

Criteria of this hypothesis testing is as follows:

Hypothesis:
Accept H_o and reject H_a, if:
F-stat < F-tab
Accept H_a and reject H_o, if:
F-stat > F-tab

F-table is obtained from table F using DF1 base as denominator
and DF2 as numerator obtained from the following calculation (5):

DF1 = Total independent variable
DF2 = n – k – 1 \tag{5}

The simultaneous hypothesis of this model measurement is presented in Table 7.

5. DISCUSSION AND IMPLICATION OF RESEARCH

Based on the result of hypothesis testing in the stakeholder capability model for all sample data, Higrise Building project and Industrial Project, it can be concluded that in this stakeholder capability model, Negotiation model does not have effect to the negotiation result (H_1 is Rejected).

However, competency and emotional intelligence has significant effect upon the negotiation result (H_2 and H_3 is Accepted). It means that throughout highrise building project and industrial project must have a good competency and emotional intelligence for negotiation. This matter shows that a competency about project management in both project still gives impact to the result of negotiation in dispute construction.

If seen from the mediation testing, the competency is also significant enough to effect relation between negotiation model and the negotiation result (H_4 is Accepted), between emotional intelligence and negotiation result (H_5 is Accepted); this matter indicates that the negotiation model owned is only able to give contribution to the negotiation result if it is supported by the good competency.

For a while, the negotiation model is not able to give effect relation between emotional intelligence and the negotiation result (H_6 is Rejected). Its meaning that the emotional intelligence and negotiation model owned by the Stakeholders not enough upon the negotiation result. Simultaneously, negotiation model, competency and emotional intelligence are able to explain about the significant effect upon the negotiation result (H_7 is Accepted); likewise, negotiation model and emotional intelligence to the competency jointly gives significant effect.

Based on the result of hypothesis testing for sample data of both project, 73.3% of effect which can be explained by the negotiation model, competency and emotional intelligence, observing the value of path coefficient, 0.075 between negotiation model and negotiation result, 0.173 between emotional intelligence and negotiation result and 0.818 between Competency and negotiation result can be read that the role of negotiation result has effect more than two other variables.

The influence upon the competency by 68.9% is able to be explained well by negotiation model and emotional intelligence, with the value of path coefficient of 0.734 for the negotiation model to the competency and 0.196 between emotional intelligence to the competency, for which the competency quality can be explained by negotiation model more than emotional intelligence.

Based on the result of hypothesis testing for sample data of highrise building project, 75.1% of effect which can be explained by the negotiation model, Competency and emotional intelligence, observing the value of path coefficient, 0.041 between negotiation model and negotiation result, 0.82 between emotional intelligence and negotiation result and 0.798 between Competency and negotiation result can be read that the role of negotiation result has effect more than two other variables.

The influence upon the competency by 68.9% is able to be explained well by negotiation model and emotional intelligence, with the value of path coefficient of 0.732 for the negotiation model to the competency and 0.203 between emotional intelligence to the competency, for which the competency quality can be explained by negotiation model more than emotional intelligence.

Based on the result of hypothesis testing for sample data of the industrial project 76.3% of effect which can be explained by the negotiation model, competency and emotional intelligence, observing the value of path coefficient, 0.119 between negotiation model and negotiation result, 0.185 between emotional intelligence and negotiation result and 0.867 between Competency and negotiation result can be read that the role of negotiation result has effect more than two other variables.

The influence upon the competency by 70.1% is able to be explained well by negotiation model and emotional intelligence, with the value of path coefficient of 0.744 for the negotiation model to the competency and 0.200 between emotional intelligence to the competency, for which the competency quality can be explained by negotiation model more than emotional intelligence.

| Path | F-statistic | F-table | Hypothesis |
|------|-------------|---------|------------|
| All samples | 90.169 | 2.69 | Accepted |
| NM, EQ and CMP → NR, Project higrise building | 64.342 | 2.74 | Accepted |
| NM, EQ and CMP → NR, Project industrial | 32.918 | 2.88 | Accepted |
6. CONCLUSIONS

Based on the result of hypothesis testing in the all model for sample data, all of the result give effect upon the conclusion towards the sample testing thoroughly. It means that all data becomes reflection to the conclusion of this research hypothesis, because the research conclusion of all samples is the same result of the conclusion obtained from the respondents’ sample testing of highrise building project and industrial project.

The results of this study provide an overview of the negotiation process in construction disputes in highrise building projects and industrial projects that are measured based on negotiation model, competency and emotional intelligence on the result of negotiations.

From all the samples processed in this study, the following conclusions can be drawn:

- Negotiation model does not have a significant effect on the result of negotiations (NM-NR: $H_0$) either in high rise building projects or industrial projects. Thus, if it only has a negotiation model of negotiator and the Stakeholders, it will not have an impact when conducting a negotiation. But if someone has a negotiation model with competency (NM-CMP-NR: $H_1$), the effect will be significant on the result of negotiations.

- Emotional intelligence have a significant effect on the result of negotiations (EQ-NR: $H_2$) either in the highrise building project or industrial project. Thus, if you only have the emotional intelligence of a negotiator or the Stakeholders, then it will have an impact when conducting a negotiation and if someone has emotional intelligence coupled with competence (EQ-CMP-NR: $H_3$), then the effect will be significant on the result of negotiations.

- Competency of stakeholders consistently has a significant effect on the result of negotiations (COMP-NR: $H_4$). From all measurement models, it shows that the competency of the Stakeholders is the only variable consistently giving influence upon the negotiation result in all modelling compositions. It proves that the competency is the important parameter, which should not be included in the negotiation model indicators as it is now.

The competency is only created to be one of the parts existing which in its measurement it can be lost in model. But based on this research, the competency gives a significant effect on the result of negotiations in all models partially and almost all models show influencing value to the competency over the negotiation result as mediation variable significantly and simultaneously.

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