Naskah 2

by Miftahul Huda,
STUDY OF PARAMETERS FOR IMPROVING PERFORMANCE AND COMPETITIVENESS OF CONSTRUCTION COMPANIES IN INDONESIA

Miftahul Huda, Soepriyono, Siswoyo
Civil Engineering Department, University of Wijaya Kusuma Surabaya, Indonesia

ABSTRACT

This research is a continuation of research and development from previous years research. The purpose of this study is to analyze and prove the relationship between parameters to improve the performance and competitiveness of construction companies in Indonesia. The location of research data collection was conducted purposively in six provinces in Indonesia, namely: DKI Jakarta, West Java, Central Java, Bali and West Sumatra. The research sample of 386 small, medium and large qualification construction companies whose numbers are determined proportionally. While the research respondents were company owners, directors and company managers. Data collection tools use nominal scale questionnaires (Likert 1-5). Statistical data analysis using SPSS and Smart PLS software. The results of the study concluded that the project management process group parameters and project management knowledge area according to PMBOK have a positive and significant effect on improving the performance and competitiveness of Indonesian construction companies. There are differences in the importance of group process implementation priorities for small, medium and large qualification construction companies.

Key words: process group, management, performance, competitiveness, construction.

http://www.iaeme.com/IJCET/issues.asp?JType=IJCET&VType=10&IType=8

1. INTRODUCTION

The Indonesian construction sector has a strategic role in national development, being able to make a significant contribution to gross national product and employment. Indonesia's construction market is growing rapidly, with an average increase of around Rp. 53.3 trillion per year [1]. However, these business prospects also pose national and international problems and challenges for national construction companies, partly because Indonesia has joined the AFAS and MEA [2][3] in the Southeast Asian environment and the WTO in the world environment [4].

Challenges or problems faced by construction companies include; (1) there is a change in the world trade system from protection to ongoing liberalization, (2) The many new
international requirements and standards such as ISO 14000, ISO 21500, ISO 18000, PMBOK and so on [5][6]. (3) The era of globalization demands the standardization of construction project management that can be accepted by all countries, such as ISO 21500 or PMBOK [7][8]. states that construction project management process group is part of the construction companies resources and capabilities to support the quality of the construction company strategy and improve construction companies performance [9][10][7][11]. Until now, Indonesia does not yet have construction project management standards that can be applied and accepted regionally and internationally [7].

In general, the performance of construction companies in Indonesia is still relatively low [12][13][14], because most do not yet have Standard Operating Procedures (SOP) and quality standards, so the quality of their work is still low [15]. Competence and resources and performance are still low, so that the competitiveness of Indonesian contractors is also still low [16]. The results of the study [17], stated that the competitiveness of Indonesian contractors was still low. Data from the Board of Management Development Institutions' National Construction Services (LPJKN) (2014) [18] and the Indonesian Central Bureau of Statistics (2014) [1], many Indonesian contractors did not survive and no longer operate.

Based on the background description of the problems mentioned above, the parameters to improve the performance and competitiveness of construction business entities (BUJK) in Indonesia are very necessary and important to study. The purpose of this study is to find out and analyze what parameters can improve performance and competitiveness. Indonesian construction companies.

2. METHOD AND MATERIAL

1. Previous research

This research is a continuation of previous research conducted by Huda, et al. (2018) [7], entitled Implementation of PMBOK5th Standard to Improve the Performance and Competitiveness of Contractor Companies. The results of the study conclude that the implementation of project management processes PMBOK5th standard project management knowledge can simultaneously improve the performance and competitiveness of Indonesian construction companies. This study developed the location, population and research respondents who were initially located in the East Java-Indonesia province, then expanded in several provinces, namely in five provinces in Indonesia.

Besides that, the variables and indicators of this study were also developed by adopting several theories and the results of previous studies. Figure 1. The above summarizes some previous research related to the relationship of parameters that can improve the performance and competitiveness of construction companies. The importance of improving performance by using PMBOK or ISO 21500 standards is carried out by: Skogmar, 2015; Gasik, 2015; Rehacek, 2014 and Brioso, 2015 [19][20][6][21]. Research and theory of the relationship of competence with construction project management according to: Latif & Ihsan, 2009; Isik et al., 2009; Yuliana, 2011; Ghaseem, 2011; Fazianto, 2013; Brahmantariguna, 2015[22][8][23][24][25][26]. Research and theory of the relationship between company performance and competitiveness are conducted according to: Absah, 2008; Isik et al., 2010; Ardiana, 2010; Huda & Wibowo, 2013; Huda et al., 2018 [10][8][11][16][7].
2.2. Research data collection and instrument

The research method is descriptive, that is, research conducted to determine the value of independent variables by making comparisons or combining between variables [27]. While in data collection, this research uses library research and field research methods by conducting interviews, observations and documentation related to the purposes of the discussion. The research instrument was a Likert scale questionnaire (1-5). Research locations in five provinces of Indonesia, namely: Central Java, West Java, DKI Jakarta, West Sumatra and Bali. The research population is a construction company that is still actively carrying out construction works until 2019. The sampling technique uses a combination of purposive sampling and proportional sampling methods. Research respondents are the owner, director or manager of a contracting company.

2.3. Data characteristics of respondents

In this study 25 questionnaires were distributed as initial questionnaires as research pilots. After that the validity and reliability tests are carried out. All questionnaire variables are declared valid and reliable as the results are shown in Table 2 below. After that the questionnaire was distributed to 500 respondents spread in 5 provinces proportionally and purposively. Of the 500 distributed questionnaires, 386 returned answers and were worthy of analysis. The characteristics of the company and respondents are shown in Figure 2 through Figure 8 below.
2.3. Research model

Referring to several theories [19] [20] [21] and some previous studies [16] [7] [28], the research model is arranged as shown in Figure 9 below. Parameter relations: project management process group consisting of five group processes and project management

http://www.iaeme.com/IJCIET/index.asp 93  editor@iaeme.com
knowledge area consisting of ten project management sciences [19] [20] [21] are predicted to improve company performance [16] [7] [28]. The company’s performance which consists of aspects: finance, business sustainability, internal business and company growth [16] [7] [28] is predicted to increase the company’s competitiveness which consists of aspects: related industries, work relationships, corporate strategy and government factors [29] [30] [31] [32].

Figure 9 Research Model

Figure 9 explains a research model that links parameters (project management process group and project management knowledge area) to improve the performance and competitiveness of construction companies in Indonesia. Each parameter consists of variables and indicators as described in Table 1 below. The relationship between each variable is assumed with a hypothesis (H1, H2 and H3) (See Figure 9)

<table>
<thead>
<tr>
<th>Variables &amp; References</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project management process group</strong></td>
<td></td>
</tr>
</tbody>
</table>
| A1. Stages of the implementation process [7][16][19][20][21][28] | (A.11) Project initiating stage  
(A.12) Project planning stage  
(A.13) Project executing stage  
(A.14) Project monitoring (controlling) stage  
(A.15) Project closing stage |
| A2. Project management knowledge area [7][16][19][20][21][28] | (A.21) Project integration management  
(A.22) Project scope management  
(A.23) Project time (schedule) management  
(A.24) Project cost management  
(A.25) Project quality management  
(A.26) Project human resource management  
(A.27) Project communication management  
(A.28) Project risk management  
(A.29) Project procurement management  
(A.30) Project stakeholder management |
| **Company Performance** | |
| B1. Financial aspect [7][16][28] | (B.11) Provide project costs  
(B.12) Anticipate term delays  
(B.13) Anticipating currency exchange rate fluctuations  
(B.14) Anticipate interest rate fluctuations  
(B.15) Company revenues and profits |

http://www.iaeme.com/ICIEET/index.asp

editor@iaeme.com
Study of Parameters for Improving Performance and Competitiveness of Construction Companies in Indonesia

2. Business Sustainability Aspects
   - Arrangement of financial cash flows
   - Finding and obtaining projects
   - Maintaining employment relations
   - Perform solutions to market barriers
   - Maintaining and increasing customer satisfaction

3. Internal Business Aspects
   - Project implementation process
   - Implementation of the innovation process
   - Project maintenance period services
   - Entrepreneurial managerial ability

4. Company Growth Aspects
   - Entrepreneurial managerial ability
   - Provision of infrastructure for company growth

Company Competitiveness

C1. Related Industries [29][30][31][32]
   - Threats of new entrants (contractors)
   - Threats of new products (substitution)
   - Threats of foreign contractors
   - Threats of new Technology

C2. Employment Relations [29][30][31][32]
   - Work Relationship with Project Owners
   - Working Relationship with Subcontractors / Suppliers
   - Relationship with the Government
   - Public Relations

C3. Company Strategy [29][30][31][32]
   - Competitive strategies
   - Suitability of strategy with company conditions
   - Implementation of the strategy
   - Tender strategy
   - Tender experience
   - Tender resources

C4. Company Strategy [29][30][31][32]
   - Government Laws & Regulations
   - Banking Conditions
   - Political Conditions
   - Government Policy

Source: various references

3. DATA ANALYSIS

3.1. Test the validity and reliability of measuring instruments

This research was started from pilot research by distributing questionnaires to 25 respondents. The results of the respondents' answers were tested for validity and reliability to test the level of accuracy of the questionnaire measurement tools. The results of the validity and reliability tests are shown in Table 2 below. Table 2 explains that the validity and reliability test results meet the requirements, meaning that the research questionnaire can be used for data collection.

<table>
<thead>
<tr>
<th>Variables</th>
<th>AVE</th>
<th>Remarks</th>
<th>Composite Reliability</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project management process group (A1)</td>
<td>0.608</td>
<td>Average</td>
<td>0.896</td>
<td>CR &gt; 0.70</td>
</tr>
<tr>
<td>Project management knowledge area (A2)</td>
<td>0.504</td>
<td>0.528 &gt;</td>
<td>0.940</td>
<td>Reliabel (OK)</td>
</tr>
<tr>
<td>Company performance (B)</td>
<td>0.506</td>
<td>0.50 (OK)</td>
<td>0.929</td>
<td></td>
</tr>
<tr>
<td>Company competitiveness (C)</td>
<td>0.494</td>
<td>Valid</td>
<td>0.936</td>
<td></td>
</tr>
</tbody>
</table>

Source: Results of PLS analysis

http://www.iaeme.com/LCIET/index.asp

editor@iaeme.com
3.2. Hypothesis testing

Hypothesis testing is done by comparing the value of t-count of each latent variable with t-table (1.96), which is said to be significant if the t-count of the latent variable is greater than t-table (t-count > 1.96). The test results for each variable are shown in Table 3 below.

<table>
<thead>
<tr>
<th>Latent Variable</th>
<th>Path Coefficient</th>
<th>t-count</th>
<th>Criteria for t-count &gt; t-table (1.96)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 Project management process group (A1) -&gt; knowledge area (A2)</td>
<td>8.970</td>
<td>1.96</td>
<td>significant</td>
</tr>
<tr>
<td>H2 Project management knowledge area (A2) -&gt; Performance (B)</td>
<td>2.771</td>
<td>1.96</td>
<td>significant</td>
</tr>
<tr>
<td>H3 Performance (B) -&gt; Competitiveness (C)</td>
<td>6.085</td>
<td>1.96</td>
<td>significant</td>
</tr>
</tbody>
</table>

Source: Results of PLS analysis

Based on the results of Smart PLS analysis (Table 3) above, the results are obtained that: (1) Stages of processes group [7][16][19][20][21][28] consisting of five processes have an influence on improving implementation project management knowledge area [7][16][19][20][21][28]. (2) The implementation of project management knowledge area consisting of ten management has an influence on improving the performance of contractor companies [7][16][28]. (3) The performance of a contracting company consisting of three aspects influences the competitiveness of construction companies [29][30][31][32].

3.4. Analysis of contribution of the effect of latent variables

Smart PLS analysis provides an explanation of the results that the influence between latent variables formed or the percentage of variance between variables is shown in Table 4 below. The project management process group (A1) exert a 55% influence on the project management knowledge area (A2). Project management knowledge area (A2) has an effect of 16.5% on company performance (B) and company performance (B) has an effect of 21.20% on the competitiveness of construction companies in Indonesia.

<table>
<thead>
<tr>
<th>Latent Variable</th>
<th>(R²)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project management process group (A1)</td>
<td>0.550</td>
<td>Project management process group (A1) give a 55% influence on the project management knowledge area (A2)</td>
</tr>
<tr>
<td>Project management knowledge area (A2)</td>
<td>0.165</td>
<td>Project management knowledge area (A2) influence 16.5% on company performance (B)</td>
</tr>
<tr>
<td>Company performance (B)</td>
<td>0.212</td>
<td>Company performance (B), has an effect of 21.2% on company competitiveness (C)</td>
</tr>
</tbody>
</table>

Source: Analysis Results

3.5. Comparison of importance

Comparison of the level of importance of the need to apply the stages of the group process and project management knowledge area based on the results of the analysis can be seen in Table 5 below. In general, the need for applying the stages of project management process group and the application of project management knowledge areas for large qualification contractors answered "very important", with an index of 86.4 - 90.9%, for middle qualification contractors respondents answered "important", with an index of around 63.9 -
Study of Parameters for Improving Performance and Competitiveness of Construction Companies in Indonesia

72.2%. Whereas for small qualification contractors the respondents answered "quite important", with an index of around 62.5% - 73.6%.

<table>
<thead>
<tr>
<th>Table 5 Comparison of the importance of stages in the process group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project management process group</strong></td>
</tr>
<tr>
<td>--------------------------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Initiating</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Planning</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Executing</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Monitoring</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Clossing</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Sumber : Hasil Analisis SPSS

4. RESULT AND DISCUSSION

- The Effect of the project management process group stages on the project management knowledge area: process group stages [7][16][19][20][21][28] consisting of five processes, namely: initiating, planning, executing, monitoring and closing has a positive and significant impact on improving the knowledge of project management area [7][16][19][20][21][28], which consists of management: project integration, project scope, project schedule, project cost, project quality, human resources, communication, risk, procurement and stakeholders. The results of this study are consistent and support the results of research conducted by: Huda et al., 2018 [7]

- The Effect of project management knowledge area on company performance: project management knowledge area [7][16][19][20][28], which consists of management: project integration, project scope, project schedule, quality, human resources, communication, risk, procurement and stakeholders have a positive and significant impact on company performance [7][16][28], which consists of aspects: finance, business sustainability, internal business processes and company growth. The results of this study are consistent and support the results of research conducted by: Waluyo, 2014 [4]; Huda et al., 2018 [7]; Isik et al., 2010 [8]; Ardiana et al., 2010 [11]; Brahmantarihuguna, 2015 [26] and Huda, M. 2017 [28]

- The effect of company performance on company competitiveness: company performance which consists of aspects: finance, business sustainability, internal business processes and company growth [7][16][28], a positive and significant effect on corporate competitiveness consisting of aspects: industry related, employment relations, company strategy and government policy factors [29][30][31][32]. The results of this
study are in accordance and support the results of research conducted by: Wibowo, 2011 [5]; Huda et al., 2018 [7]; Huda & Wibowo, 2013 [16]; Huda, 2017 [28]; Orozco et al., 2011 [29]; Kaming et al., 2017 [30][31] and Yan, 2017 [32].

5. CONCLUSIONS
The results of the study concluded that the project management process group consisting of stages: initiating, planning, executing, monitoring and closing had a positive and significant effect on improving the implementation of construction project management. The project management knowledge area which consists of ten management areas, namely management: integration, scope, time, cost, quality, human resources, communication, risk, procurement and stakeholders have a positive effect on the performance of Indonesian construction companies. Construction company performance consisting of aspects: finance (4 indicators), business sustainability aspects (consisting of 6 indicators), internal business aspects (consisting of 3 indicators) and company growth aspects (consisting of 4 indicators) have positive and significant effects on company competitiveness which consists of aspects: related industries, employment relations, corporate strategy and government factors. There are different levels of importance for small, medium and large qualification construction companies in implementing project management process group, where large qualification construction companies have a greater importance than small and medium qualification construction companies.

ACKNOWLEDGEMENT
Thank you to (1) the Central Management Board of the Association of the National Construction Executing Association (GAPENSI), (2) Associations of construction service Entrepreneurs in the provinces of DKI Jakarta, West Java, Central Java, East Java, Bali and West Sumatra (3) Board of Management Development Institutions' National Construction Services (LPJKN), Jakarta.

REFERENCES
Study of Parameters for Improving Performance and Competitiveness of Construction Companies in Indonesia


http://www.iaeme.com/IJCIET/index.asp


Yan, S. 2017. *Strategic Analysis of International Competitiveness for Construction Firms in China*. *Advances in Social Science, Education and Humanities Research, volume 120*
# Originality Report

## Naskah 2

### Similarity Index

- **23%**

### Internet Sources

- **17%**

### Publications

- **8%**

### Student Papers

- **18%**

## Primary Sources

<table>
<thead>
<tr>
<th>No.</th>
<th>Source Details</th>
</tr>
</thead>
</table>
| 1   | Submitted to Universitas Diponegoro  
Student Paper | 5% |
| 2   | erepository.uwks.ac.id  
Internet Source | 3% |
| 3   | eprints.perbanas.ac.id  
Internet Source | 2% |
| 4   | docplayer.fi  
Internet Source | 1% |
| 5   | Soepriyono, S Azizah, M Huda. "Analysis of contractor company requirements on the competence of construction project management for graduates of civil engineering degree", IOP Conference Series: Materials Science and Engineering, 2018  
Publication | 1% |
| 6   | Submitted to London Metropolitan University  
Student Paper | 1% |
| 7   | Submitted to University of Greenwich  
Student Paper | 1% |
Submitted to Universitas Negeri Semarang
Submitted to Program Pascasarjana Universitas Negeri Yogyakarta
Submitted to Bolton Institute of Higher

Submitted to University of Reading
Student Paper
<1%

Submitted to Universitas Katolik Widya Mandala
Student Paper
<1%

Submitted to Billy Blue Group
Student Paper
<1%

Publication
<1%

Submitted to Argosy University
Student Paper
<1%
<table>
<thead>
<tr>
<th>FINAL GRADE</th>
<th>GENERAL COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>/0</td>
<td>Instructor</td>
</tr>
</tbody>
</table>