The main factor affecting the competitiveness of Contractor Company

Nurisra, Nurul Malahayati, and Mahmuddin
University of Syiah Kuala, Jl. Syekh Abdurrauf 10, Banda Aceh, Indonesia
E-mail: nurisra@yahoo.com

Abstract. Contractor companies must have the competitive advantage to compete in maintaining the survival of the company. Problems arise because quite a lot of advantages can be used and these advantages must be used appropriately to produce competitiveness for the company to continue to compete and to win the competition. This study aims to determine the main factors affecting the competitiveness of medium-class contractors in Banda Aceh. Data collection was obtained through questionnaires distributed to 31 middle-class contractors in Banda Aceh. Data processing and analysis is done by using descriptive analysis. Based on the result of descriptive analysis, it can be concluded that the most important competitiveness factor with a mean score value 4.52 is the relationship, and the factor that has the highest mean score value is the relationship with the government of 4.97, while the result of the ranking analysis is obtained 25 factor that is critical to the competitiveness of medium-class contractors in Banda Aceh.

1. Introduction
In Indonesia, the competitiveness of construction service companies is still relatively weak. Currently, national contractors are faced with a globalization era marked by the enactment of Asian Free Trade Area (AFTA) in 2015. With the enactment of the AFTA, foreign contractors can freely compete for projects in the construction market in Indonesia. Whereas in the era of free trade, competitiveness is one measure of the company's successful performance. Based on the above phenomenon, should every Indonesian construction service company create the competitive advantage to maintain its survival in the global competition of construction service business world?

Some of the problems that contractors face are already summarized, both internal and external. Internal problems faced are essentially due to weak competitiveness and external problems faced by the challenge the free market due to globalization, monetary crisis, regional autonomy, and difficulties of financial support from the government. Understanding the competitiveness of organizations and the development of competitive strategies has become an important issue in the construction business, which has led to an increase in the number of studies related to the problem. The construction industry is dynamic and has special characteristics for each region and will have different impacts in the construction project competition. Similarly, local contractors with different backgrounds and experiences will have different power or competitiveness between different regions. It is important for contractors to realize the competitive advantage and can develop competitive strategies.

Competitiveness is the ability of the company to compete with its competitors. Therefore, companies must have the competitive strategy and competitive advantage that focus on dynamic
processes. Porter [1] states that competitive advantage is key to achieving superior corporate, industrial and economic performance.

Indonesian construction service companies must be ready to compete and have competitive sources of resources that include physical resources, financial resources, organizational process structures and systems, and human resources (HR). There are many competitiveness factors of contractor companies that can be used to enhance a company's competitiveness such as project management, organizational structure, competitive strategy, relationships, supply, marketing, corporate image, technical and technological capabilities, as well as financial capabilities [2-3].

Many factors can affect the competitiveness of the company, therefore need to know what factors are dominant, so that helps contractors to maintain the company. The objective of the study was to determine the main factors affecting the competitiveness of middle-class contractors in Banda Aceh.

2. Methods
Data collection was done by distributing questionnaires addressed to contractor companies. The questionnaire was designed into two main sections, the first questionnaire containing questions about the characteristics of the respondents and also explaining the identity of the company in general. The second part questionnaire contains statements relating to factors affecting the competitiveness of contractors.

2.1 Location and object of research
The object of this study is the competitiveness of middle-class construction companies. The survey sites were conducted at Middle-Class construction companies that handle construction projects located in the city of Banda Aceh.

2.2 Data collection
The required data are as follows:
- Primary data is data obtained directly from the respondent or object under study, or something to do with the research. In this study, the primary data in question is the data obtained from the questionnaires.
- Secondary data is supporting data that was collected from LPJK Aceh. The secondary data in this study includes a list of names of middle-class construction companies located in the city of Banda Aceh.

2.3 Data processing and analysis
Data processing and analysis through the stages as follows:
- Conducting recapitulation and tabulation of the questionnaire survey results. Assessment of answers using the Likert scale where scale 1 (very unimportant), scale 2 (not important), scale 3 (neutral), scale 4 (important), and scale 5 (very important).
- Validity and reliability test are performed to determine the accuracy and accuracy of a measuring instrument (questionnaire) in performing the measuring function. Testing the validity of the instrument using a test of the validity of the construction where the t count should be greater or equal to the table is 1.701. The result of validity test of each factor is bigger than t table = 1.99. The reliability testing is done by using Cronbach Alpha method where Cronbach Alpha coefficient must be greater than 0.6. Reliability test results for the whole factor obtained Cronbach Alpha value = 0.925 > 0.6. Thus, it can be concluded that the questionnaire in this study is valid and reliable so it can function as a measuring tool in this study.
- Data analysis is done by calculating the mean score value of each factor. The Mean Score Value (MS) is calculated by the following equation:

$$MS = \frac{\sum(f \times s)}{n} \quad (1 \leq MS \leq 5)$$  \hspace{1cm} (1)
where:
\[ f = \text{number of answers for each factor} \]
\[ s = \text{score value for each respondent's answer (1-5)} \]
\[ n = \text{number of respondents} \]

3. Results and discussions

3.1. Characteristics of respondents

Respondents selected in this study were directors or deputy directors of middle-class construction companies with 31 contractors regarding company experience, a number of some construction projects ever worked on the last five years and the average contract value of construction projects conducted each year. The full description is shown in Table 1.

| Company experience | Frequency | Percentage (%) |
|--------------------|-----------|----------------|
| < 5 years          | 0         | 0.00           |
| 5-10 years         | 2         | 6.45           |
| 10-15 years        | 11        | 35.48          |
| 15-20 years        | 18        | 58.06          |
| > 20 years         | 0         | 0.00           |

| Number of construction projects worked over the last five years | Frequency | Percentage (%) |
|---------------------------------------------------------------|-----------|----------------|
| 1-3                                                           | 4         | 12.90          |
| 4-6                                                           | 11        | 35.48          |
| 7-10                                                          | 16        | 51.61          |
| > 10                                                          | 0         | 0.00           |

| The average contract value of projects implemented per year | Frequency | Percentage (%) |
|-----------------------------------------------------------|-----------|----------------|
| Rp 100 - 500 million                                       | 2         | 6.45           |
| Rp 500 million - Rp 1 billion                              | 7         | 22.58          |
| Rp 1 - 5 billion                                           | 15        | 48.39          |
| Rp 5 – 10 billion                                          | 7         | 22.58          |

3.2 Descriptive analysis

Descriptive analysis is used to find the total and mean score of each competitiveness factor and presented in Table 2.

| Code | Factors                                      | Frequency | Total score | Mean Score |
|------|----------------------------------------------|-----------|-------------|------------|
| P1   | Site management                              | 0 0 6 13 12 | 130         | 4.19       |
| P2   | Cost management                              | 0 0 0 13 18 | 142         | 4.58       |
| P3   | Quality management                           | 0 0 1 11 19 | 142         | 4.58       |
| P4   | Time management                              | 0 0 0 10 21 | 145         | 4.68       |
| P5   | Contract management                          | 0 0 4 20 7  | 127         | 4.10       |
| P6   | Ability to resolve problems or disputes       | 0 0 12 15 4 | 116         | 3.74       |
| P7   | Risk management                              | 0 0 3 18 10 | 131         | 4.23       |
| P8   | Supply chain and logistics management         | 0 0 7 15 9  | 126         | 4.06       |
| P9   | Effectiveness in the management of work safety| 0 0 10 14 7 | 121         | 3.90       |
| P10  | Knowledge of local construction laws         | 0 0 13 14 4 | 115         | 3.71       |
|   | Description                                                                 | 0 | 0 | 8 | 9 | 14 | 130 | 4.19 |
|---|------------------------------------------------------------------------------|---|---|---|---|----|-----|------|
| P_{11} | Number of contracts successfully committed                                  |   |   |   |   |    |     |      |

**Organizational structure**

|   | Description                                                                 | 0 | 0 | 11 | 15 | 5 | 118 | 3.81 |
|---|------------------------------------------------------------------------------|---|---|----|----|---|-----|------|
| P_{12} | Communication and coordination between functional areas within the company   |   |   |    |    |   |     |      |
| P_{13} | Tasks and functions are described for each field                             |   |   |    |    |   |     |      |
| P_{14} | Motivation and job satisfaction                                              |   |   |    |    |   |     |      |
| P_{15} | Retain core employees                                                         |   |   |    |    |   |     |      |

|   | Description                                                                 | 0 | 0 | 7 | 15 | 9 | 126 | 4.06 |
|---|------------------------------------------------------------------------------|---|---|---|----|---|-----|------|
| P_{16} | There is a clear competitive strategy                                        |   |   |    |    |   |     |      |
| P_{17} | Implement the strategy that has been made/planned                           |   |   |    |    |   |     |      |
| P_{18} | Understand in detail the strategy made/planned                              |   |   |    |    |   |     |      |

**Competitiveness Strategy**

|   | Description                                                                 | 0 | 0 | 0 | 7 | 24 | 148 | 4.77 |
|---|------------------------------------------------------------------------------|---|---|---|---|----|-----|------|
| P_{19} | Relationship with owner                                                       |   |   |    |    |   |     |      |
| P_{20} | Relationship with subcontractor or supplier                                  |   |   |    |    |   |     |      |
| P_{21} | Relationship with government                                                  |   |   |    |    |   |     |      |
| P_{22} | Relations with the public                                                     |   |   |    |    |   |     |      |
| P_{23} | Relationship with consultants                                                 |   |   |    |    |   |     |      |

|   | Description                                                                 | 0 | 0 | 2 | 13 | 16 | 138 | 4.45 |
|---|------------------------------------------------------------------------------|---|---|---|----|----|-----|------|
| P_{24} | Bidding strategy                                                             |   |   |    |    |    |     |      |
| P_{25} | Bidding experience                                                            |   |   |    |    |    |     |      |
| P_{26} | Bidding resources                                                             |   |   |    |    |    |     |      |

**Relationship**

|   | Description                                                                 | 0 | 0 | 9 | 18 | 4 | 119 | 3.84 |
|---|------------------------------------------------------------------------------|---|---|---|----|---|-----|------|
| P_{27} | The ability to collect and process information from new projects             |   |   |    |    |   |     |      |
| P_{28} | Availability of product information and labor costs, materials, equipment, and other resources |   |   |    |    |   |     |      |
| P_{29} | Ability to forecast changes in construction market conditions                |   |   |    |    |   |     |      |

|   | Description                                                                 | 0 | 0 | 7 | 23 | 1 | 118 | 3.81 |
|---|------------------------------------------------------------------------------|---|---|---|----|---|-----|------|
| P_{30} | The credibility of the company                                               |   |   |    |    |   |     |      |
| P_{31} | Company grade                                                                |   |   |    |    |   |     |      |
| P_{32} | Project performance (quality, safety, environment)                          |   |   |    |    |   |     |      |
3.3 Factors affecting the competitiveness of contractors

Table 3 shows the 25 highest ranking of contractor competitiveness factors. The relationship with government (P21) is ranked first, so it is important for contractors to maintain good relationships with partners, especially governments, owners, and consultants. In Banda Aceh alone the construction market is still very large from government projects as well as projects with large budgets widely available in government, to reduce risks and enhance the competitiveness of firms relationships must be maintained to increase the likelihood of winning project tenders.

Time management (P4), cost management (P2), and quality management (P3) become a very important factor in terms of management in improving the competitiveness of enterprises, by balancing between time, cost, and quality, the company can improve the quality of project performance to improve competitiveness internally and increase trust externally so that the company continues to gain the trust of the project owner to continue to get sustainable construction project work.

Another very important factor is the experience of offering (P19) and bidding strategies (P24), each contractor company must be able to win project bids to secure employment while maintaining the survival of the company, therefore experience in the bidding of the construction projects, bidding strategies are needed to compete for job projects. The company itself has its strategy so that this factor is considered important in the construction industry.
Table 3. Ranking of contractor competitiveness factors

| Competitiveness factors                                      | Mean Rank |
|-------------------------------------------------------------|-----------|
| P21 Relationship with government                            | 4.97      |
| P19 Relationship with client                                | 4.77      |
| P25 Bidding experience                                      | 4.71      |
| P4 Time management                                          | 4.68      |
| P2 Cost management                                          | 4.58      |
| P3 Quality management                                       | 4.58      |
| P23 Relationship with consultant                            | 4.48      |
| P24 Bidding strategy                                        | 4.45      |
| P35 Capacity of construction equipment and workers          | 4.42      |
| P26 Bidding resources                                       | 4.26      |
| P7 Risk management                                          | 4.23      |
| P20 Relationship with subcontractor and supplier            | 4.23      |
| P1 Site management                                          | 4.19      |
| P11 Number of contracts successfully committed              | 4.19      |
| P22 Relationship with public                                | 4.16      |
| P17 Implement the strategy that has been made/planned       | 4.13      |
| P3 Contract management                                      | 4.10      |
| P15 Retain core employees                                   | 4.10      |
| P34 Professional qualification of project manager           | 4.10      |
| P36 Ability of technical and professional employees         | 4.10      |
| P8 Logistics management and supply chain                    | 4.06      |
| P16 Specific competitive strategy                           | 4.06      |
| P18 Understand in detail the strategy made/planned          | 4.06      |
| P32 Project performance (quality, safety, environment)      | 4.03      |
| P14 Motivation and job satisfaction                         | 4.00      |

4. Conclusions
This study presented the survey carried out among Banda Aceh construction companies. The critical factors leading to construction company competitiveness have been investigated through interviews among top-level managers and owners of the companies. Based on the descriptive analysis, it is found that the most influential competitiveness factor is cooperation relationship, while for the most chosen indicator is the relationship with the government. Based on the ranking analysis there are 25 competitiveness factors that can improve the competitiveness of a company.

Future researchers involving managers/owners of construction contractors can provide a comparison of the results of studies conducted in other cities in Indonesia.

Acknowledgement
The authors express high appreciation to all parties who have contributed to this research, especially to Kamal Rachmanda and other research teams that involved from data collection to completion of the research.

References
[1] Porter M E 1980 Competitive strategy: Techniques for analyzing industries and competitors New York: Free Press
[2] Lu W Liyin S and Michael C H Y 2008 Critical success factors for competitiveness of contractors: China study J. Const. Eng. Manage. 134 972-982
[3] Tan Y, Shen L Y, Michael C H Y and Ann A C L 2007 Contractor Key Competitiveness Indicators (KCIIs): Hong Kong study Surveying and built environment 18 33-46