Factors affecting competitiveness small contractors in construction industry

G J Johari*, E Walujodjati, S Mulyana and S Permana
Department of Civil Engineering, Sekolah Tinggi Teknologi Garut, Jalan Mayor Syamsu1, Garut 44151, Indonesia

*ganjar.johari@sttgarut.ac.id

Abstract. The construction industry is a very promising business area in terms of infrastructure development and financial benefits. Many factors influence the competitiveness of small contractors in the construction industry. This study aims to identify what factors influence competitiveness and identify what are the dominant factors that affect the competitiveness of small contractors in the construction industry in West Java. The author uses descriptive and explanatory research methods which are then processed by statistical methods using validation tests, reliability tests, and factor analysis. The results of this study indicate that all variables are valid and pass the reliability test. Of the 9 factors studied, it has a significant influence on the competitiveness of small contractors in the construction industry in West Java. There is 1 dominant factor that influences the competitiveness of small contractors in the construction industry in West Java, namely project management factors. These indicators are; Location management, Cost management, Quality management, Time management, Contract management, Problem solving expertise, Risk management, Logistics and supply chain management, Effectiveness in coordination with subcontractors, Effectiveness in site safety management, Knowledge of local construction law, Number of major accidents in The last 3 years, and the contract ratio successfully committed. for project implementation, Coordination of all activities and labor involved.

1. Introduction
The construction industry is a very promising business land both in terms of infrastructure development and financial benefits. In national development, the construction service industry has an important role in the country's economy because it is able to contribute to the Gross Domestic Product by 7% [1]. Indonesian construction services companies must be ready to compete and have sources of competitive advantage which include physical, financial, structural and system processes of integration and human resources. There are many competitiveness factors for a contracting company that can be used to enhance a company's competitiveness such as project management, organizational structure, competitiveness strategies, relationships, supply, marketing, corporate image, technical and technological capabilities, and financial capabilities [2–4].

Construction service companies must have one or several of the competitive advantage factors. Problems arise because there are quite a number of advantages that are used by construction service companies, these advantages must be used appropriately so that competitiveness for the company is produced to continue to compete and win the competition. The Indonesian National Construction Implementation Association (Gapensi) noted that as many as 37,000 private contracting companies went
bankrupt in the past three years. Deputy General Chairperson III Bambang Rahmadi Gapensi explained the data was seen from the decline in the number of Gapensi members from around 80,000 currently living 43,000 members (https://economy.okezone.com). Furthermore, based on data from the Central Java Central Bureau of Statistics (BPS) the development of construction service companies in West Java Province for the scale of small businesses in 2017 decreased compared to 2016, which was from 8,895 to 2,828 companies. Companies that survive must have competitiveness to keep the company from getting a job.

The problems of this study are the factors that influence competitiveness small class contracting company in West Java. The objectives of this study are:

- Knowing the main factors that affect the competitiveness of small contracting companies in West Java.
- Knowing f dominant actors that influence the competitiveness of small contracting companies in West Java.

2. Literature review

2.1. Competitiveness

The Companies that do not have competitiveness will be abandoned by the market. If the arena of not having competitiveness means not having excellence, and not being superior means that there is no reason for a company to survive in the competitive market for the long term [5], competitiveness is the ability of companies to compete with competing companies. Therefore, companies must have competitive strategies and competitive advantages that focus on dynamic processes. "Competition is at the core of the success or failure of firms" [6]. Competition is the core of a company's success or failure. There are two sides caused by competition, namely the success side because it encourages companies to be more dynamic and compete in producing products and provide the best service for their markets, so that competition is seen as a motivating opportunity. While the other side is a failure because it will weaken companies that are static, afraid of competition and unable to produce quality products, so competition is a threat to the company.

The dimensions of a company's competitiveness as stated by Muhardi, is made up of the cost (cost), quality (quality), delivery time (delivery), and flexibility (flexibility) [7]. The four dimensions are further explained by Muhardi complete with the indicators as follows [7]:

- Cost is a dimension of operating competitiveness which includes four indicators, namely production costs, labor productivity, use of production capacity and inventory.
- Quality is a dimension of competitiveness which is also very important, which includes various indicators including product appearance, product acceptance period, product durability, the speed of customer complaint resolution, and product conformity to design specifications.
- The delivery time is a dimension of competitiveness which includes various indicators including timeliness of production, reduction of production waiting time, and timeliness of product delivery.
- Flexibility is a dimension of operating competitiveness which includes various indicators including the type of product produced, speed adjusting to environmental interests.

2.2. Influencing factors are factor competitiveness

The forming factor of competitiveness itself can be measured by indicators of a company's competitiveness. Competitive advantage factors basically include quality excellence, low cost, ability to submit orders faster, differentiation and flexibility [8-10], there are 6 main indicators to determine and measure the competitiveness of contractors in Hong Kong. The results of the preliminary study obtained 88 sub-indicators and after a survey of the perceptions of contractors on the sub-indicators obtained 36 main sub-indicators. The study identified indicators that could be used by Hong Kong contractors to measure their competitive advantage and weaknesses.
Company Image: Company credibility, Company grade, Project/safety/environment quality performance, Level of bank confidence, Business specialization, Professional qualifications of project managers

Technical Capability: The capacity for construction equipment and workers, Technical and professional star abilities, Get to know local habits, The advanced proportion of construction equipment and workers, Standing from technological advances in the industry

Financial Capability: Payment to subcontractors/suppliers on time, Trust grade is certified by relevant financial bodies, The financial status of the organization, Financial repayment ability

Marketing Ability: On the list of tenders for Government work, Relations with the public or the private sector, Relations with architects/consultants, Relations with subcontractors and suppliers, The ability to forecast changes in market conditions

Management Expertise: Effectiveness in managing site progress, Effectiveness in coordination with subcontractors, Effectiveness in the contract administration system, Effectiveness in managing site safety, Effectiveness in financial management, Knowledge of local construction law, Availability and effectiveness of the quality management system, Availability and effectiveness of risk management systems, A number of major accidents in the last 3 years, The contract ratio is successfully committed

The strength of Human Resources: The accuracy of organizational structure and personal, Career prospects in the organization, The ratio of the number of technical and professional staff in the organization, Availability and effectiveness of resources and programs for training, Maintaining core staff, Effectiveness in work groups and problem-solving.

In addition, Lu et al., explained that there are 8 main factors that indicate competitiveness based on research in China [2]. The study was conducted by identifying 35 success factors. This research provides information to guide contractors in managing their resources in order to increase competitive advantage. This research also provides insight to professional contractors in planning competition in the Chinese construction industry.

Project Management: Location management, Cost management, Quality management, Time management, Contract management, Authenticity resolves the problem, Risk Management, Logistics and supply chain management

Organizational Structure: Conformity to organizational structure, Communication and coordination between functional departments, Clearly defined and appropriate functions for different departments, The interaction between management and general staff, Motivation and job satisfaction, f. Leader personality and ability

Human Resource Organization: Current capacity in human resources, Sustainable development in human resources, Financial resources, Financing ability, Financial Stability

Competitiveness Strategy: An explicit competitive strategy, Strategic matching for company situations, I'm strategy implementation, Awareness of strategy and perspective

Relationship: Relations with clients and owners, Relations with subcontractors or suppliers, Connect with Government Departments, Relationship with the public

Offer: Bidding strategy, Experience in the offering, Bidding resources

Marketing: Ability to collect and process information from new projects/contracts, Availability of product information and wages for labor, materials, plants, and other resources, Business scope

Technology: Technological innovation capability, Sustainable development of technology and R & D.

3. Method
The author uses descriptive and explanatory research methods [11]. The purpose of a descriptive study is to know and explain the characteristics of the variables under study in a particular situation.
Descriptive research itself means research that has the purpose to understand the description of the situation that occurs on the basis of existing facts, which are then processed and analyzed so that conclusions can be drawn based on the data that has been processed and analyzed.

The population is a collection of people, situations, or goods that the author wants to make conclusions or decisions based on the sample. The population that the author intended as a small contracting company in West Java Province as many as 2,828.

Samples are small groups that are taken and are part of the population so that the characteristics and characteristics of the population are also owned by the sample [12], how to calculate samples using the Slovin formula. Based on these calculations, then in this study 97 samples of small contractors were taken.

In this study, the data collected from the questionnaire arranged systematically will be processed with two analytical approaches, namely qualitative and quantitative. In a qualitative approach, the processed data is presented in the form of frequency tables and uses descriptive statistics. The next approach is quantitative analysis, the analysis technique is used to interpret and analyze data. In accordance with the model developed in this study, the data analysis tool used is factor analysis.

Factor analysis is one of the multivariate statistical methods that try to explain the relationship between a number of variables that are mutually independent of one another so that one or more sets of variables can be made that are fewer than the number of initial variables. Factor analysis is also used to determine the dominant factors in explaining a problem [13].

4. Results and discussion

The results of the study were obtained after the process of data collection, data processing, and data analysis. In the process of analysis carried out using statistical calculations for the purpose of data analysis. The data in this study utilizing computational tools is Microsoft Excel and SPSS (Statistical Product and Service Solution). The values obtained from data processing are the value of the validity and reliability of the data and the total and average scores to determine Critical Success Factors (CSFs).

Validity test is conducted with regard to the accuracy of the measuring instrument against the measured concept so that it actually measures what should be measured. From the results of the correlation calculation will be obtained a correlation coefficient that is used to measure the level of validity of an item and to determine whether an item is worthy of use or not. All items that reach a correlation $> 0.3$ are considered valid. The calculation results show the whole question has met the validity test.

To test the reliability of the questionnaire used in this study, the reliability test was based on the value of Cronbach Alpha. Testing is done by comparing the value of the Cronbach Alpha coefficient must be greater or equal to 0, 6 that is the value that is considered to be able to test the reliability of the questionnaire used. The reliability test results show the Cronbach Alpha value is greater than 0, 6, this means that the reliability of the questionnaire has been fulfilled.

The results of critical success factors (CSFs) obtained 25 indicators of competitiveness which became critical success factors (CSFs) competitiveness of small contracting companies in the construction industry in West Java. Thus, based on the results of the study, it was found that the indicators of competitiveness in cooperative relations had the strongest and most significant influence on the competition of small contractors in the construction industry in West Java. The competitive conditions of construction projects in West Java are relatively high, this requires that each contractor implement and improve cooperative relations as their competitive advantage in order to improve company performance.

With very tight competition conditions, contractors must have competitiveness by increasing and implementing critical success factors.

- **Project management**: Time management, Cost management, Quality management, Risk management, Location management, The number of contracts successfully committed, Risk management, Logistik management and supply chain.
- **Organizational structure**: Maintain core employees, Motivation and job satisfaction.
- Competitiveness Strategy: Implement strategies that have been made/planned. There is a clear competitive strategy. Understand in detail the strategies created/planned.
- Cooperation Relationship: Relations with Government Offices, Relationship with owner/owner, Relationship with consultants, Relationship with subcontractors or suppliers, Relations with the public/community.
- Offer: Experience in bidding, Bidding strategy, Bidding resources.
- Company Image: Professional qualifications of project managers, Project performance (quality, safety, environment).
- Technical Ability and Technology: Kapasitas equipment and workers construction, The ability of technical and professional staff.

Factors of company competitiveness, for project management indicators there are 8 factors, organizational structure has 2 factors, competitiveness strategies have 3 factors, cooperation relationships have 5 factors, supply has 3 factors, company image has 2 factors, and technical capabilities and technology has 2 factors. While marketing indicators and financial capabilities are not a critical factor in the company's internal competitiveness.

Relations with the Government Service became the first rank CSF, so it is important for contractors to maintain good relations with partners, especially Governments, owners and consultants. In West Java, the construction market is still very large from government projects and also projects with many budgets on the government. To reduce risk and increase the competitiveness of companies this relationship must be maintained so as to increase the possibility of winning the project tender.

Time management, cost management, and quality management are very important CSF in terms of management in increasing a company's competitiveness, by balancing time, cost, and quality so the company can improve the quality of project performance in order to increase competitiveness internally and increase trust externally so that the company continues to gain the trust of project owners to continue.

Another CSF that is very important experiences in bidding and bidding strategies. Every contracting company must be able to win a project tender to get a job while maintaining the survival of its company. For this reason, experience in the tender offer for construction projects is needed. the application of the strategy in the offering is needed to be able to compete in obtaining work projects. The company itself applies its respective strategies so that these factors are considered important in the construction industry.

5. Conclusion
The test results questionnaire validity indicates that all variables are declared valid. Reliability test results show that all the variables reliability questionnaire has been filled.

Based on the Critical Success Factor (CSF) analysis there are 25 competitiveness factors that can increase the competitiveness of small contracting companies in the construction industry in West Java. The cooperation relationship has the strongest and most significant influence on the competition of small contractors in the construction industry in West Java.

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