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Innovation performance of large contractor in Indonesia: influencing factors and its impact on firm's performance

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Abstract

This study aims to determine: factors that influence innovation performance in large contractor firm, and impact of innovation performance on firm's performance. The firm's performance may include: project performance, performance of firm's competitiveness, firm's competitive advantage, and firm's sustainable competitive advantage. Factors that influence innovation performance are classified into 3 groups: driving factor, internal factor and external factor. Data collected by a questionnaire survey sent to 452 companies (10% of the population). Only 248 questionnaires (5.5% of the population) that returned and can be analyzed further. The questionnaire use a 1-4 Likert scale as a measuring tool. Data were analyzed through three stages: descriptive statistics analysis to determine the tendency of responds, Spearman's rank correlation analysis to eliminate indicators that less than 0.50, and analysis of partial least squares of structural equation modeling to determine the magnitude of the effect of the variables studied. This study result are: 1) driving factors and internal factors positively affect innovation performance, while external factors affect negatively, 2) the influence of internal factors and driving factors at almost the same level, and 3) innovation performance affects firm's sustainable competitive advantages through project performances, performance of the firm's competitiveness and firm's competitive advantages.

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Keywords: contractor; firm; innovation; performance.

1. Introduction

Since 1985, the Indonesian nation has officially participated in the globalization process. In that year Indonesia became one of the founding members of Asia-Pacific Economic Cooperation (APEC); became member of World

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Trade Organization (WTO) in January 1995; has committed to establish ASEAN Framework Agreement on Services (AFAS) in December 1995, ASEAN Free Trade Area (AFTA) in January 2003, and ASEAN Economic Community in December 2015 [1-3].

Indonesian economic openness has lead economic actors in the country to face stiff competition, with strong intensity and at high speed from foreign countries [4, 5]. Such economic by D' Aveni and Gunther [6] and Henry [7] referred as an economy hyper competition. In economic hyper competition, every company have to innovate in order to survive and grow [8, 9].

As part of the Indonesian economy, Indonesian construction industry also faced hyper competition. Currently, Indonesian construction companies have to compete against each other and against foreign companies simultaneously. In a period of nine years from 2004 to 2013, the number of foreign companies entering the Indonesian construction industry has increased 72%, an increase of 8% annually [10]. That number is expected to increase.

Construction business in Indonesia are grouped into three business groups: executors, planners, and supervisors [11]. The executors are usually called contractors. In accordance with the level of complexity of the work, the amount of funds used, the amount of labor involved, and the multiplier effect both to upstream and downstream industries, contractor companies have strategic position to determine the level of competitiveness of the construction industry as a whole. The more competitive contractor companies the more competitive construction industry. Some researchers argue that high competitiveness can be achieved by innovate consistently and continuously. This study seeks to prove the truth of this opinion by analyze the impact of innovation performance on the firm's performance.

2. Literature review

By some researchers, innovation is typically distinguished by the invention [12, 13]. In manufacturing innovation is defined as the practical application of one or some invention into a product or process that can be marketed [14, 15]. In the construction industry, especially for contractors, the appropriate definition of innovation is the practical application of one or several new materials, new equipments, or new methods into a product or process that can increase the probability of winning the project tender, or to solve construction problems that accelerates time of construction or minimize construction costs [16-18].

Any construction project can be considered as a prototype, because of every single project has uniqueness as such: 1) location, 2) area of the building, 3) architectural and structure design, 4) length of completion time, and 5) project owner [19]. These uniqueness require the contractor to solve the problems by the approaches vary from one project to another. In other words, contractors are always required to innovate on every project he undertook [20].

Research on the factors that influence the success and failure of innovation contractors have been carried. Tatum [21] identified 7 critical success factors of innovation contractors: 1) organizational structure, 2) organizational culture, 3) company policies, 4) priorities of the company, 5) flexibility of the unit size, 6) coordination of intra- and inter organization, and 7) placement of the right employees. According to Nam and Tatum [22] there are 3 main factors that drive or push the contractor companies to innovate: 1) demands or requests of the project owner, 2) demand due to the problems that arise in construction work, and 3) availability of new technologies that enable improved effectiveness and efficiency of construction work. Dulaimi et al. [23] identified 6 internal factors and 3 external factors that impeded the implementation of the company's innovation. The internal factors are consists of: 1) stiff organizational structure, 2) scarcity of resources, 3) behavior that resist change, 4) non conducive values of the organization, 5) work culture, and 6) company's burden. The external factors consists of: 1) laws and regulations, 2) government agencies authorized to issue regulations relating to the construction industry, and 3) conditions and market perceptions. Blayse and Manley [24] concluded 6 key factors that influence the success and failure of innovation contractors: 1) client/partner/owner and manufacturing companies, 2) structure of construction industry production, 3) industry relations, 4) procurement systems, 5) rules, regulations, and standards, and 6) resources of the organization, such as: innovation culture, absorptive capacity, innovative individuals, knowledge codified, and innovation strategies.

Research on the effects or benefits of innovation in the company's contractors have been conducted by Lim et al. [16]. According to Lim et al. [16] innovation can be a useful tool to improve the competitiveness of contractors, by implementing the innovations that can reduce overall project costs and at the same time accelerate the completion of