

## The Indonesia Industrial Estate Firm Award's: Theory Building and Testing

Gatot Yudoko

School of Business and Management, Institut Teknologi Bandung, 40132 Bandung, Indonesia

**Abstract:** One of the Indonesia's economic growth drivers comes from domestic and foreign firms operating in industrial estates. These firms produce goods for both domestic markets and exports. Because of its strategic roles for economic growth, the Ministry of Industry, Indonesia has been keen on improving performance and sustaining these firms. One of the ministry's initiatives was the Indonesia Industrial Estate Firm Award(s) in 2013 and 2015. This study discusses this voluntary award from the perspective of theory building and testing. The proposed theory on industrial sustainability consists of inputs, (i.e., resources) processes, (i.e., management and services, infrastructure and facilities, environmental management and corporate social responsibility) and output, (i.e., sustainable business and industry). There were five kinds of awards, namely the best in management and services, the best in infrastructure and facilities, the best in environmental management and the best in outside Java island and the best overall in Indonesia. Model testing is done through questionnaires distributed to industrial estate firms in 2013 and 2015. Results of the award in 2013 and 2015 showed that during the span of 2 year, most of the nominees in 2013 were able to maintain their performance. One notable finding was a change in the best overall from 2013-2015 and this was mainly due the superior environmental management investment and efforts put in 2013 by the winner of the 2015.

**Key words:** Industrial estate, award, theory building, theory testing, sustainable business and industry

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### INTRODUCTION

Industrial sector has been expected to have a strategic role for the development of the Indonesian's economic growth (MII, 2012). One of the Government of Indonesia (GOI) through Ministry of Industry has been the acknowledgement of the contribution by industrial estates. It was stated in the government regulation on industrial estate issued in 2009 that industrial estates have major objectives such as controlling land use, improving sustainable industry, increasing industrial growth at local levels, improving industry competitiveness, increasing investment attractiveness and providing certainty and guarantee for industry location that is integrated with infrastructure provision (MII, 2012). Each industrial estate is operated and managed by an industrial estate firm. Achievement of these goals are very critical for all stakeholders including central government, local government, labors and labor union, businesses and prospective investors, both domestic and foreign.

In 2012 the Directorate of Industrial Estate Development (DIED) Ministry of Industry formulated a roadmap for industrial estate development. One of its initiatives was to establish an industrial estate award for industrial estate firms. In this year, the draft for this award was formulated by a team, involving DIED, representatives of the Indonesian Industrial Estate Firm

Association (HKI) and academicians. The Award was given every 2 year in October 24, 2013 and in December 17, 2015. The aims of this study is to highlight and discuss this phenomenon from theory building and theory testing perspective (Colquitt and Phelan, 2007) in order to contribute to both theoretical and empirical perspectives of industrial estate particularly in a developing country such as Indonesia.

**Theory building:** This study adopts a mixed approach to theory building by integrating the interpretive-inductive and the positivist-deductive paradigms (Swanson and Chermack, 2013; Jaccard and Jacoby, 2010; Neuman, 2006). The former is based on the existing regulatory framework in the Indonesian context while the latter is based on concepts selected in the literature review. It is hoped that this approach in theory building provides both strong conceptual and theoretical validity and empirical relevance.

The major regulatory framework for industrial estate development in the Indonesian context was the government industrial policy issued in 2009 that mentioned about the expected goal, namely sustainable industrial estate, consisting of competitiveness, social and environmental perspectives. Conceptually, this is in line with the concept of sustainability or triple bottom line (Mulyadi, 2012; Bansal, 2005; Yudoko, 2012). Based on this ultimate objective, this study argues that the simple

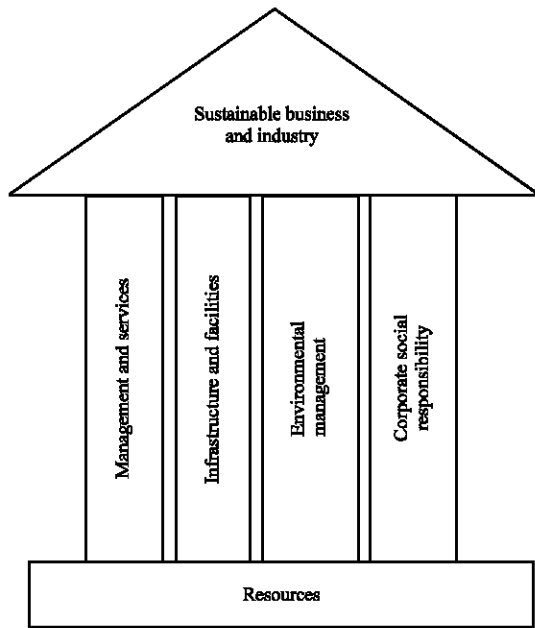


Fig. 1: House of sustainability for industrial estate firms in Indonesia

systems theory of input-process-output (Kaplan and Norton, 2004; Beckman and Rosenfield, 2008; Hayes *et al.*, 2005; Slack, 2015) can be used to theorize the Indonesian industrial estate sustainability. In this regard, input is reflected through resources (Peteraf and Barney, 2003). Based on the guidelines of industrial accreditation by DIED, processes is divided into four major parts, namely management and services, infrastructure and facilities, environmental management and corporate social responsibility. Output is viewed as the ultimate goal that is sustainable business and industry. Figure 1 shows this theory.

Theory has been widely specified as concepts and their relationships (Swanson and Chernack, 2013; Jaccard and Jacoby, 2010; Neuman, 2006). This study follows the specification that theory consists of four major parts, namely definitions, domain, relationships and predictions (Wacker, 1998). Definitions deals with the questions of “what?” and “who?” and these relate to meanings of concepts, constructs or variables used in the theory. Domain refers to where the theory applies and are associated with the questions of “when?” and “where?”. Relationships highlight the nature of association among those concepts, constructs or variables and is related to the questions of “why?” and “how?”. Prediction specify whether the theory gets empirical support and is related to the questions “could, should and would?” the theory happens in practice. Table 1-4 show a theory of the Indonesia industrial estate sustainability.

Table 1: Definition component

| Question | Description  |
|----------|--|
| What?    | The Industrial Estate Award(s) was designed as an attempt by the Ministry of Industry, Indonesia to recognize, appreciate and motivate industrial estate firms to improve their competitiveness and service quality by voluntarily adopting and implementing the industrial estate standards for the sake of their sustainability. Sustainable industrial estate firm is an expected condition in which the firm is able to meet its three major goals, namely economic profit, social contribution and environmental preservation |
| Who?     | Ministry of Industry as the giver was the authority who formulated the industrial estate standards, socialized, organized and administered the Industrial Estate Award (s). Industrial estate firms as the potential recipients are the candidates for the award   |

Table 2: Domain component

| Question | Description  |
|----------|--|
| When?    | The Indonesia Industrial Estate Firm Award (s) was scheduled by the Ministry of Industry, Indonesia every two year and it was implemented in 2013 and 2015 |
| Where?   | The Indonesia Industrial Estate Firm Award (s) was designated for industrial estate firms operating in Indonesia   |

Table 3: Relationships component

| Question | Description  |
|----------|--|
| Why?     | The GOI, through the Ministry of Industry has been very concerned with the competitiveness and sustainability of industrial estates in the country since they host factories and businesses for both domestic and export needs. In addition, industrial estate firms in Indonesia have to face global competition, especially from the neighboring South east Asian countries that also invite and attract potential foreign investors. Initiatives for improving and sustaining competitiveness had been done by the firms themselves, therefore through DIED of the Ministry of Industry, an intervention was design through a voluntary award given to the best performers in the country. It was expected that this award will increase motivation and commitment among industrial estate firms to increase their performance by adopting and implementing industrial estate standards. The award was expected to eventually bring about contribution to tenants or users, labors or workers, local government and the GOI |
| How?     | Ministry of Industry believed that managers of industrial estate firms can deploy their resources to accomplish value-creating processes across four major areas such as management and services, infrastructure and facilities, environmental management and corporate social responsibility. The expected outputs of these processes encompass business profits for the firms and their shareholders, local and national economic growth, social welfare for local communities and local government and environmental preservation. These are the key ingredient of business and industry sustainability in Indonesia  |

Table 4: Prediction component

| Question | Description   |
|----------|---|
| Could?   | Ministry of Industry believed and expected that directed efforts as outlined in the voluntary award could improve firm performance in terms of profitability and sustainability   |
| Should?  | In addition to improvement initiatives by industrial estate firms themselves. Ministry of Industry believed that directed efforts as outlined in the manual of the award should lead to a better performance                  |
| Would?   | Ministry of Industry also recognize that because of its power and limited supports, there was no guarantee that industrial estate firms would be willing to adopt and implement improvement initiatives just to get the award |

**MATERIALS AND METHODS**

To test the theory, operationalization was used based on the manual developed by DGIE. This manual outlined measures for four categories, namely management and services, infrastructure and facilities, environmental management and corporate social responsibility. Management and services consists of six parts, namely strategic and business plan, compliance to land use ratio ISO 9001, 14000, 18000 systems, industrial estate code of conduct, service to tenants. Infrastructure and facilities includes eight components including roads, waste treatment facilities, clean water provision, electricity supply, telecommunication networks, natural gas supply, sewerage and solid waste treatment.

Environmental management covers five aspects such as “Proper” certificate rank by the Ministry of Environment, compliance, improvement initiatives, zoning criteria and limit and esthetics and open space. Corporate social responsibility accounts for social awareness and community empowerment. Each measure uses a 4-point Likert scale, ranging from 0 (none) to 4 (highest) in 2013 and then was modified into a 5-point Likert scale, ranging from 0 (none) to 5 (highest) in 2015. This change was done to increase accuracy. Another change was on the weights of the three category, namely management and services, infrastructure and facilities and environmental management. Table 5 shows the summary of categories and their weights for 2013 and 2015.

Questionnaires were sent to industrial estate firms. Theoretically, all industrial estate firms were eligible. The number of industrial estate firms in by the end of 2012 were 59 and 74 by the end of 2014. To achieve good participation from these firms, DIED established cooperation with the Indonesia Industrial Estate Association (HKI) for socialization meetings with its members.

To maintain objectivity of the evaluation process, an evaluating team was established by the Director General of DIED. This team consisted of five academicians in 2013 and five academicians and one practitioner in 2015. No members of the HKI was involved. About 4 same members were maintained for 2013 and 2015.

About 6 week after questionnaires were sent, then, the returned questionnaires were evaluated the team. This evaluation resulted a short-list between 3 and 5 firms, of

Table 5: Category and weights

| Category                        | Percentage |      |
|---------------------------------|------------|------|
|                                 | 2013       | 2015 |
| Management and services         | 31         | 30   |
| Infrastructure and facilities   | 36         | 30   |
| Environmental management        | 23         | 30   |
| Corporate social responsibility | 10         | 10   |

the highest performers in each of the four categories. Site visits were conducted to each candidate in the list. A half day was used for the visit for each firm. After all the site visits were completed, the team conducted two major meetings, one for the final scoring based on the visits and the other for determining the rank, from the highest to the lowest. This final result was then submitted to the Director General of DIED whom would decide the winners for the award(s). A ceremony was established in 2013 and 2015 to give the awards to the winners. These recorded ceremonies were then nationally televised.

**RESULTS AND DISCUSSION**

The numbers of participating firms, submitting questionnaires for the award were 13 in 2013 and 15 in 2015. If we compare these with the total number of industrial estate firms operating in the country, 59 firms in 2013 and 74 in 2015, we can conclude that the rates of participation were not satisfactory. Table 6 lists distribution of the participating industrial estate firms. There were 10 industrial estate firms that participated in both 2013 and 2015. Industrial estate firms in the Java island dominated the participation in 2013 and 2015. Participants from Sumatera and Sulawesi islands in 2013 and 2015 were almost the same firms. Table 7 and 8 present nominees and winners in 2013 and 2015. Firms are alphabetically ordered.

The above results indicate a few interesting findings and explanation. In the category of management and services, KIIC was the winner for both 2013 and 2015. About 2 other candidates, namely KIIC and MM2100 were the same for 2013 and 2015. One candidate in 2013, Jababeka was replaced by Batamindo in 2015. This fact represents an ability of both KIIC and MM2100 to keep their performance during 2013-2015. During this period, we discover the ability of Batamindo in improving their

Table 6: Distribution of participating firms

| Region/Island | 2013            | 2015                  |
|---------------|-----------------|-----------------------|
| Sumatera      | Batamindo kabil | Batamindo Dumai Kabil |
| Kalimantan    | Bontang         | n.a                   |
| Sulawesi      | KIMA            | KIMA                  |
| Java          | Delta silicon   | Gresik                |
|               | EJIP            | Jababeka              |
|               | Jababeka        | KBN                   |
|               | KBN             | KIIC                  |
|               | KIEC            | Lippo                 |
|               | KIIC            | MMID2100              |
|               | Lippo           | Modem cikande         |
|               | MM2100          | Ngoro                 |
|               | SIER            | Pulogadung            |
|               | Wijayakusuma    | SIER-PIER             |
|               | -               | Wijayakusuma          |
| Total         | 13              | 15                    |

Table 7: Nominees and winners for 2013

| Categories                    | Nominees  | Winner    |
|-------------------------------|-----------|-----------|
| Management and services       | Jababeka  | KIIC      |
|                               | KIIC      | -         |
|                               | MM2100    | -         |
| Infrastructure and facilities | EJIP      | Jababeka  |
|                               | Jababeka  | -         |
|                               | KIIC      | -         |
| Environmental management      | Batamindo | EJIP      |
|                               | EJIP      | -         |
|                               | MM2100    | -         |
| Best of outside Java          | Batamindo | Batamindo |
|                               | KIMA      | -         |
|                               | Bontang   | -         |
| Indonesia best overall        | Batamindo | KIIC      |
|                               | Jababeka  | -         |
|                               | KIIC      | -         |

Table 8: Nominees and winners for 2015

| Categories                    | Nominees  | Winner    |
|-------------------------------|-----------|-----------|
| Management and services       | Batamindo | KIIC      |
|                               | KIIC      | -         |
|                               | MMID2100  | -         |
| Infrastructure and facilities | Batamindo | Jababeka  |
|                               | Jababeka  | -         |
|                               | MMID2100  | -         |
| Environmental management      | Batamindo | MMID2100  |
|                               | KIIC      | -         |
|                               | MMID2100  | -         |
| Best of outside Java          | Batamindo | Batamindo |
|                               | Kabil     | -         |
|                               | Dumai     | -         |
| Indonesia best overall        | Batamindo | MMID2100  |
|                               | KIIC      | -         |
|                               | MMID2100  | -         |

performance, surpassing Jababeka. This was also an interesting and good finding because Batamindo is located in the Sumatera island with only 13 firms (22.0% of the Indonesian industrial estate firms) in 2013 and 16 firms (21.6%) in 2015. Most industrial estate firms in Indonesia have been located in the Java island.

Like KIIC's leadership in management and services in both years, achievement on infrastructure and facilities showed the superiority of Jababeka that was able to sustain its leadership in 2013 and 2015. The other 2 candidates in this category were different, namely EJIP and KIIC in 2013 and Batamindo and MMID 2100 in 2015.

Category of environmental management highlights an interesting finding. EJIP, the winner in 2013 did not participate in 2015 without any notice or known reason. Its place in 2015 was taken over by MMID 2100. The achievement of MMID 2100 is worth noted. When site visit was conducted in 2013, the company (MM2100) was on an ambitious plan to revitalize its environmental management by investing on a new wastewater treatment technology, they called "Organica", supplied by a European vendor. Although the exact amount of the investment was not disclosed, they mentioned it in billion rupiahs. This new technology amazed the team in their

visit in 2015 and it earned the highest scoring by the team, leading MMID 2100 firm as the best performer in environmental management in 2015.

Ministry of Industry, Indonesia have recognized disparity of industrial estate distribution in the country which is heavily spread in the Java island. In order to increase motivation among industrial estate firms outside the Java island, DIED proposed to designate an award for the best performer in that region. In this category, the winner for 2013 and 2015 was Batamindo. The other two candidates, namely KIMA and Bontang in 2013 and Kabil and Dumai in 2015 were not able to outperform Batamindo.

In the last category, the Indonesia best overall performer, two nominees came up in 2013 and 2015, namely Batamindo and KIIC. The other 2 candidates were Jababeka in 2013 and MMID 2100 in 2015. KIIC was the winner in 2013. It should be noted here that in 2013, KIIC was nominated in the categories of management and services and infrastructure and facilities and it earned the best performer in the management and services category. Surprisingly in 2015, a new winner came up, that was MMID 2100 and it took over KIIC position as the Indonesia best industrial estate in 2015. In this year, MMID 2100 emerged as nominees in three categories such as management and services, infrastructure and facilities and environmental management.

## CONCLUSION

A few conclusions can be drawn from this research. First, the low participation for the Indonesia industrial estate award(s) in 2013 and 2015 left the Ministry of Industry, especially DIED with unknown progress of the rest of the firms that did not participate. Filled and returned questionnaires had provided DIED with valuable data and information about the status and achievement by each firm. Second, the awards were planned by DIED as an intermediary milestone, after the draft for industrial estate standards had been prepared and before the plan for obligatory accreditation in the future. In one hand, this initiative had been able to attract a limited number of the participating firms. On the other hand, the low participation rate calls for other options in order to get more attention in the future such as more socialization or sending DIED's staff to visit and facilitate firms in filling out questionnaires. Third, the results of the awards in 2013 and 2015 show a domination of already credible industrial estate firms; however, we can also learn that significant and differentiating efforts may put a company into a new best performer. Fourth, in terms of policy implication, a few prospective options are worth considered such as giving the winners direct

accreditation, preparing incentives schemes by the ministry for increasing participation and compliance towards the industrial estate standards and socialization before the obligatory accreditation is in effect. Fifth, from the theory building point of view, this study offers an alternative theory for industrial estate's sustainability in the Indonesian context. The result of the theory testing, however has not been able to show strong results due to its limited empirical evidence. Last, future research can be directed toward more on this theory testing by increasing industrial estate firm's participation than on the theory building itself. It is expected that the results of stronger empirical findings can become valuable feedback for DIED before issuing accreditation as an obligation for each and every industrial estate operating in Indonesia.

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