THE VIABILITY OF INDUSTRY IN INDUSTRIAL CLUSTER:
STILL HOPES FOR GROWTH

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ABSTRACT

Globalization and competitiveness are realities that must be faced by small and medium industry today. Government in the implementation process of the industrial development of Small and Medium Enterprises (SMEs), should see this reality and be a decisive consideration in any policy to be issued, as well as a paradigm that must be faced by any country in implementing industrialization process. Industry cluster in Indonesia is one of the policies adopted by the government in promoting small and medium industries. Survival and the success of an industrial cluster is dependent in part on whether the industry in the cluster have the power to live.

This study aims to analyze the internal and external factors that affect the viability of industry, in order to get a model study of how to improve the viability of industry in the industrial cluster. These factors are age of maturity, product diversity, macroeconomic stability that affected the business climate, and government regulation. Population of research consists of entrepreneurs in the garment and metal centers in Small and Medium Industry “PIK Pulogadung”, East Jakarta, Indonesia. Regression model was chosen to measure the influence of independent variables affecting the viability of the industry in the cluster.

The results showed that all independent variables significantly affect the viability of industry in the cluster, unless government regulation variable. The study revealed that 61% of variation data viability of industry is explained by independent variables, indicated by the $R^2$.

Government regulation was not affected significantly in this study, needs to get more attention. We know that operational of industrial cluster was managed by the local government cluster. In this cluster, government regulation is not significant, due to the lack of facilitation of production / promotion.

Keyword: SMEs, Cluster industry, Industry Viability
1. Introduction

A high economic growth and sustainable is the goal of many developing countries. But in realizing, obstacles always arise from internal and abroad. World economic crisis in 2008 and the increasingly globalization, are an example of obstacles in achieving goals. In Indonesia, the economic crisis of 2008 contributed to the decline of economic growth, but it does not cause negative economic growth as occurred in many countries in the world. The economy is still growing today and can’t be separated from the role and contribution of micro, small and medium enterprises (MSMEs) and the creative industry.

SMEs and creative industry in Indonesia is a foundation of the national economy, resilient to global economic shocks, and proved able to provide a large enough positive effect on employment and GDP gains. Throughout the year 2011, the contribution of SMEs to employment reached about 97%, and contribution to the GDP about 56.6%, with the achievement of economic growth of 6.5%.

Different in the developed countries, the management of SMEs and creative industry in Indonesia is still a business where the owners and managers are the same people, so in managing companies are often influenced by the autonomy of the owner (the traditional economy). Autonomous management by owners cause continuity is strongly influenced by the ability of business owners. Such traditional economic rarely use planning, and bankruptcy vulnerable uncertainty facing the economy in an increasingly globalized market. To reduce this, the government made efforts so that business continuity can be maintained.

The Indonesian government, through the Ministry of Industry and the Ministry of Cooperatives and SMEs, has long had a strategy to increase the competitiveness of producers, both manufacturers of household industries, small industries, and medium industries. One such strategy is to place the SMEs producers into a particular environment, called industrial clusters.

It is based on the claim that each area should be able to develop the region by identifying and optimizing the potential of local, known as local development. Local development became known for success in creating industrial districts. Industrial district is then called clusters, because there are linkages (linkages) and network (networks)
between activity and industry. Cluster focused on the creation of conditions that does not rely on foreign investment and still be able to open employment (multiplier effects) as well as highly competitive and sustainable. This strategy would not only strengthen the structure of the industry, but also improve the structure of the industry endowment.

According to Michael Porter (2000), a cluster is a geographic concentration among firms that are interrelated and work together, which involve goods suppliers, service providers, related industries, as well as a number of institutions that specifically serve as a support and or supplement. Relationships between firms within the cluster can be horizontal or vertical. Horizontal through a mechanism complementary services products, use a variety of technology-specific input or institutions, while the vertical nature through purchases and sales chain. Michael Porter also stated that the industry/business as a group have the potential to affect competition in three ways, namely by increasing the productivity of companies in the cluster, by driving innovation in the field and to stimulate new business in the field. Russo (1999) also stated that clusters can be defined as sectoral and geographical concentration of enterprises, in particular Small and Medium Enterprises (SME), faced with common opportunities and threats which can: a) give rise to external economies (e.g. specialised suppliers of raw materials, components and machinery; sector specific skills etc.); b) favour the emergence of specialized technical, administrative and financial services; c) create a conducive ground for the development of interfirm cooperation and specialization as well as of cooperation among public and private local institutions to promote local production, innovation and collective learning.

Sustainability and success of an industry cluster depends among other things on whether the cluster has the power of life or viability, which will make the cluster members remained in place. Power on the industry cluster is the ability of industries in the cluster to grow and develop normally. Viability of industries within a cluster can be

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measured by the stability and growth of income and have sustainable profits, the efficiency of the business, a positive result on a cost-revenue analysis.

Along with the signing of free trade agreements with China, viability of Indonesia’s industrial cluster had decreased, but several other clusters increased. Cluster of shoe and leather craftsman in Cibaduyut-Bandung-West Java, for examples, where data on the July 2010 shows production decreased by 60% over the previous year, even the craftsmen who survive in the industry only about 20%, while 80% other out of business due to competition from China shoe products, lack of capital and production cost.

This study aims to analyze the internal and external factors that affect the viability of industry, in order to get a model study of how to improve the viability of industry in the industrial cluster.

The next section discusses viability of industry in industrial cluster and the related factors with industry viability. Section 3, I reviews data, methodology and indicators of each factors in this research. Section 4, I present the result, while the final sections offers some concluding remarks.

2. Literature Review

2.1. Viability of industry in industrial cluster

In the uncertainty economy conditions because of economy crisis, many transition policies based on neoclassical economics failed to apply in some countries economy. This reason based on neoclassical economics assumes, that a firm to be able to earn a socially acceptable profit in an open and competitive market if the firm has a normal management.

While Keynesian economics assumes that the economy can recover from the recession if effective demand rises, and here the government can intervene by increasing spending budget to improve economic conditions, in practice can either through subsidies and protections. However, Keynesian economics seem to not succeed in addressing the crisis in some European countries. This is a factual that in some Europe countries, the government given subsidies and protection to maintain their economy that still collapsed
because of crisis. Still in basic Keynesian demands (by fiscal policy), the gap between what the government collects in taxes and what it spends, must to be counter-cyclical. When demand is weak, as now, government should be a big deficit to compensate arising demand, as long as no excessive private sector borrowing and lending.

Related with Keynesian views, the regulated policies to SMEs, so that they have profit sustainably and have viability of business, government of Indonesia has strategy to place small and medium industries in industrial clusters. This strategy is a form of government regulation so that small and medium scale industries to grow sustainably.

Based on the strategic plan of the Ministry of Industry of Indonesia 2010-2014, the purposes of industrial placement in industrial clusters is to recover and make the industry stronger. There are 35 national seed industrial clusters and featured many provincial and district/city\(^3\). Placement in industry clusters are also supported presidential decree, ministerial rules and regulations of regional heads.

The program of revitalization and growth of small and medium industries aims to restore the performance of the industries affected by the global financial crisis impacting on industries that export to many countries in Europe and the United States. This program is not only intended to address the actual problem the industry but also to grow and develop industrial clusters through the implementation of the plan of action contained in the Regulation of the Minister of Industry on our map priority industry clusters.

This policy in strengthening small and medium industries through industrial cluster, in line with the Washington consensus (1989) to be the standard of reform for new emerging suffered a crisis, especially in the second recommendation. The recommendation is directing government spending from subsidies to public sector spending, including on infrastructure and services to support the growth of the middle class down.

If the small and medium industries are being recovered and strong, then these industries will have the power of life, or in other words they have the business viability.

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\(^3\) Secretary General of Ministry of Industry, 2010, *Strategic Plan for Ministry of Industry 2010-2014*. Jakarta, p 43
Murray\(^4\) stated that viability of a business is measured by its long-term survival, and its ability to have sustainable profits over a period of time. If a business is viable, it is able to survive for many years, because it continues to make a profit year after year. The longer a company can stay profitable, the better its viability. Lin (2002)\(^5\), stated that the term of viability associated with the expected rate of profit of a firm in an open, free, and competitive market. If any external subsidies or protections, a normally managed firm is expected to earn a socially acceptable normal profit in a free, open, and competitive market, is not viable.

Alan Thompson (2005)\(^6\), said that the dimensions of the viability of business include market viability, technical viability, business viability, viability Management, Economic and Financial viability, Exit strategy viability. The dimensions of economic and financial viability can be measured by the cost/start-up capital, working capital, operating costs, raw material costs, the overall return on investment, overall profitability, break-even point, the sustainability of the market versus projected revenues, and the ability to generate economic value.

Choirul Djamhari\(^7\) said that the viability of business/industry can be affected from the stability and income growth, the efficiency of the business, the positive results of the cost-revenue analysis, and so on. According him, viability businesses/industries are affected by the conditions of internal and external. Internal conditions are usually the age of maturity cluster, business diversity (heterogeneity), the level of business risk among SMEs in it, and the probability of entrepreneurs within the cluster will remain affiliated with the cluster. External factors consists of the stability of the macroeconomic business, order continuity, and new actors (business new entrants) that make things competitive market, and last but not least, is government regulation\(^8\).

\(^7\) DR. Choirul Djamhari, Factors affecting the development of SMEs center to be Dynamic Cluster., ‘Infokop’ Magazine no. 2, XXII, 2006, p.2
\(^8\) Op.cit.p. 3
Richard Veryard in *Veryard Projects Ltd & Antelope Projects Ltd.*

viability means ability to survive. For many enterprises, viability is ultimately linked to profit. Even if the business is not currently profitable - perhaps it is in the early stages of development, undergoing a growth spurt, or just going through a bad patch - there is an expectation that it will be profitable at some future date. The expectation of future profit justifies continued investment.

It can be concluded that the viability of the industry in each industrial clusters is the ability to survive in the cluster continuously for a certain period. Operationally, the viability of the industry in cluster is measured by the long-term survival in the cluster, and the ability to have a sustainable advantage over a certain period, or the stability and income growth, the business efficiency and positive results on the cost-revenue analysis. If it is viable, it can last for year, and continuously making profits every year.

Meanwhile, some factors affecting the viability of businesses in this study is limited by the age of maturity of the industry, product diversity, stability of macroeconomic and government regulations.

a. **Age of industry maturity.** How many years must be passed by the industry to reach its maturity stage, there is no definite reference. The stage of business maturity is reached before the decline stage. If the industry can survive longer at this stage, the viability is getting better.

About the age of maturity, it is better seen on the stages of the industry. Based on certain observations, companies are classified into the growth stage, mature and decline is based on the classification of the three variables, namely percent sales growth (SG), the annual dividend as a percentage of income (DP), and the age of the firm (AGE ). Miller and Friesen (1984) divides the life cycle into five phases, that are phases of birth, growth phase, maturity phase, the phase of re-development and decline phases. Weston and Brigham (1981) stated that the life cycle of a company

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or an industry will tend to be described as the curvature of S (S-shaped curve) as seen in Figure 1. Stage 1 to stage 4 of the image is a start-up, high growth, maturity and decline.

![Figure 1. Firm Life cycle](image)


Age maturity of the industry is a particular stage of the industry life cycle. Minimum industry maturity has a time and experience within an industry after the expiration of a period of growth and before the reduction occurs, which is associated with the acquisition of the first to earn a decent income, and experience in achieving business efficiency. Minimum maturity of the industry is characterized by stable sales growth, reducing innovation, long life industrial and profitability tend to flatten. Stable income can be achieved with a number of loyal customers and stable turnover anyway. Revenue is evenly and fairly good, so the level of maturity of an industry depends on how much influence these indicators for the industry concerned. If the indicator is met, then the industry is in the mature phase, but if less than stated indicators, the industry is on hold start-up or growth or decline.

b. **Product diversity.** Product diversification is the effort manufacturer/company to produce and sell some products similar, in contrast to products that have been marketed before. Operationally, the diversity of product is measured by the number of products being made and efforts to innovate new products. Industry needs to diversify the product, because the product diversification is one way to increase the volume of sales to be made by the company, especially if the company is already in the stage of
In the case of small and medium industries in the cluster, the diversified
needs help from the government to promote.

Product diversification as an alternative corporate strategy can be classified into three
types concentric, conglomerate, and horizontal (David, 1997)\textsuperscript{12}. Concentric
diversification is an attempt to add new products that have synergy with existing
products and intended to different markets. Conglomerate diversification is an
attempt to add new products to sell to a new buyer group. And horizontal
diversification be an attempt to add new products even if the new product does not
have any relationship with existing product lines, and intended for the same market.

Another approach (Hill & Jones, 1998)\textsuperscript{13}, diversification can also be divided into two
types, namely related diversification and unrelated diversification. Linkage refers to
the relationship with its main business being cultivated, or some businesses that make
up the value chain in a group effort.

c. **Stability on Macro-economy.** Macroeconomic stability is a stable economic
condition in a region (regions or countries). If macro-economic is instable, it could
affect to economy activity, including business activity. As an example, when stock
exchange index fall because of bad performance in many financial companies at
recent years, some businesses activities collapse.

Macroeconomic stability in this research was measured by the perception of
entrepreneurs in industrial cluster on the stability of macroeconomic variables, such
as credit interest rate, inflation and raw material prices. The reason used three
measures, is that it relates to production activity, where they are still dependent on
bank lending capital and prices of raw materials.

d. **Government Regulation.** Government regulation is the regulation of the government
policies that are conducive affect the viability of industries in industrial cluster. In
Indonesia, one government regulations stated in Government Regulation No. 24 of
2009 concerning Industrial Zone. This regulation contains such as: Tax incentives to

\textsuperscript{12} Denis, David J., Diane K. Denis, and Atulya Sarin, 1997. *Agency Problems, Equity Ownership, and

Company.
the industrial estate and industrial companies in the Industrial Area is given in accordance with the provisions of laws in taxation (article 12), Mandatory Industries Zone Company Provides Land for Activities of Micro, Small, and Medium (article 20). The government also regulates empowerment of micro, small and medium enterprises through equity loans. There is soft loan’s facilitation, such as partnership program, small loans, etc. Partnership program is usually including promotion of product (managing cluster usually actively promote the products produced in industrial cluster) and capital facilitation for production. The SMEs and small industries also get fiscal facilities, such as electricity subsidies and tax exemption.

Operationally, government regulation to small and medium industries in industrial cluster was measured through the perception of receiving soft loans, receiving subsidies, exemption of income tax and helping product promotion.

3. Data and Methodology

This study was conducted in the area of small and medium settlements (PIK) “Pulogadung”, Jakarta. The region occupies an area of 90 acres, which houses small and medium-sized businesses of five business groups, namely the garment industry, metal, leather, various commodities and furniture, and administered by the Public Service Local Agency as a Manager of Entrepreneur Settlement Region (MSMEs) in Jakarta.

Total population is about 495 entrepreneurs from the five centers of business (temporary number based list management office), with the details as much as 273 garment center businessman (3619 workers), metal 96 employers (927 employees), skin 72 employers (632 employees), miscellaneous commodities 46 employers (491 employees) and furniture 8 employers (37 workers).

The sample was taken by a simple random technique in the two centers of garment and metal (purposive technique random sampling). According Arikunto\(^\text{14}\), if a large population (more than 100), then the sample should be taken 10-15% or 20-25%. Because the population of the two centers is large enough, then the sample is set at about 20% of the list while in the office managing, so the number of samples totaling

approximately 74 businesses, where all businesses in both centers have an equal opportunity to be sampled.

Table below shows indicators of variables in this study, as a guideline data collection.

Table 1. Indicators of variables research

<table>
<thead>
<tr>
<th>No</th>
<th>Variable</th>
<th>Indicators</th>
<th>Sub-Indicators</th>
<th>Scale of Data</th>
</tr>
</thead>
</table>
| 1  | X = Internal and external Factors | X₁ = Age of industrial maturity in cluster | a. The length of business time  
b. Appropriate profit  
c. Quantity of Loyal customers  
d. Stability on onset and customers | interval  
interval  
interval  
interval |
|    |          | X₂ = Product diversity | a. Quantity of products diversification  
b. Product Variation:  
1) New product pattern  
2) Consumer taste minded  
3) Imitation other product  
4) Variation in product quality | Interval  
Interval  
Interval  
interval |
|    |          | X₃ = Macroeconomic stability (perceptions) | a. Interest rate  
b. Inflation rate  
c. Price of raw material  
d. Exchange rate | ordinal  
ordinal  
ordinal  
ordinal |
|    |          | X₄ = Government regulation (perceptions) | a. Facilitation of soft borrowing  
b. Facilitation of business location  
c. Facilitation of electrical and tax subsidies  
d. Facilitation of production and promotions | ordinal  
ordinal  
ordinal  
ordinal |
| 2  | Y = Viability of industry in industrial Cluster | | a. Stability of income  
b. Income growth  
c. Efficiency of business | Interval  
Interval  
interval |

Source: from various theories, 2011

Hypothesis testing conducted to determine whether the internal and external variables affecting the viability of industry in cluster. Analytical technique is using OLS in multiple regression model. Prior to testing hypotheses, it first tested the validity and reliability testing. After testing the hypothesis, then testing the classic assumption, so that the model used is a BLUE’s model.
4. The Result Research

a. Employment by industry group. The majority of the industry samples in environmental PIK “Pulogadung” are small and medium-scale industries, reflected by the number employed by the industry in their respective centers.

<table>
<thead>
<tr>
<th>Centre</th>
<th>1-4 employ</th>
<th>5-19 employ</th>
<th>20-99 employ</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garment Industries</td>
<td>8.11</td>
<td>31.08</td>
<td>13.51</td>
<td>52.70</td>
</tr>
<tr>
<td>Metal Industries</td>
<td>0.00</td>
<td>29.73</td>
<td>17.57</td>
<td>47.30</td>
</tr>
<tr>
<td>Total (%)</td>
<td>8.11</td>
<td>60.81</td>
<td>31.08</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Primary data were processed by researcher, 2011

The majority of industrial samples are small and medium-scale industries, reflected by the number employed by the industry in each center, which is about 60.81% of the industry workforce have between 5-19 employees, approximately 8.11% of micro-scale industries, while the remaining 31.08% medium scale with the number of workers between 20-99 workers. This means that the original purpose of the establishment of PIK Pulogadung in Jakarta used to facilitate the industrial business area of micro, small and medium enterprises in the industrial cluster, achieved.

b. Monthly Average Revenue. Revenue is the value of transactions that take place within a certain period (daily, weekly or monthly); it is neither gains nor losses. Revenue is the sale before it deducted by margin. Although revenue is high, but it may not a big profit, even, it can be the loss if the cost exceeds revenue. That condition reflects as an inefficiency of manager performance.

<table>
<thead>
<tr>
<th>Centre</th>
<th>Average revenue/month(%)</th>
<th>&lt; 20 millions</th>
<th>21-50 millions</th>
<th>51-100 millions</th>
<th>&gt;100 millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garment industries</td>
<td>9.46</td>
<td>18.92</td>
<td>12.16</td>
<td>13.51</td>
<td></td>
</tr>
<tr>
<td>Metal Industries</td>
<td>1.35</td>
<td>5.41</td>
<td>14.86</td>
<td>24.32</td>
<td></td>
</tr>
<tr>
<td>Total = 100%</td>
<td>10.81</td>
<td>24.32</td>
<td>27.03</td>
<td>37.84</td>
<td></td>
</tr>
</tbody>
</table>

Source: Primary data were processed by researcher, 2011

The data show that there is a very striking difference in the garment and metal industries’ revenues. Garment industry groups have revenues of at most 21-50 million per month, while most of the metals industries have average revenues of more 100 million per month. This can be understood because the main raw material industrial...
metal is metal, which is more expensive than the fabric that is the raw material garment, where most of the garment entrepreneurs take raw materials from the rest of garment factory waste. However, when combined, PIK Pulogadung industry has the highest average revenue more 100 million per month.

c. **Long time operate in a Cluster**

Every industry is going through the stages of the industry life, from start-up stage to the stage of decline. Stage of maturity is between stages of growth and decline phases / decrease. All stages of the industry life is influenced by the old industry operates.

<table>
<thead>
<tr>
<th>Centre</th>
<th>Business periode (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garment industries</td>
<td>4.05</td>
</tr>
<tr>
<td>Metal industries</td>
<td>2.70</td>
</tr>
<tr>
<td>Total = 100%</td>
<td>10.81</td>
</tr>
</tbody>
</table>

Source: Primary data were processed by researcher, 2011

Most of the industrial samples in this study were not industrial/new entrepreneurs, but the old players, especially the garment industry. There was only 10.81% businesses that occupy PIK Pulogadung began operating less than three years. Meanwhile, based on years of existence, the number of metal industries in PIK relatively less than the garment industry, except for the period 2005-2008 in which many metals industry operates.

d. **Viability of industries in Cluster.** The majority of the industries (85.14%) had stable and very stable income, so that the remaining 14.86% had less/unstable incomes. The revenue showed a good and very good growth (64.86%), the rest 35.14% less revenue growth/no growth. As much as 86.48% industries had average BEP exceeded each year, the remaining 13.52% of industries sometimes suffer losses. The majority of the industry (71.62%) had incomes exceed the cost of raw materials and fixed costs (efficient and very efficient), while the remaining 28.38% not / less efficient.

e. **The age maturity of industries.** Data show that the majority of the industries in PIK Pulogadung are at the stage of business maturity. Some 67.56% of the industry has a
long effort more than 3 years, the remaining 32.44% is less than 3 years old. Based on the data, the metal industry has a younger venture period than the garment industry. As much as 82.43% industries have a decent and a very decent income, while 17.57% less profit or no profit. This condition must be maintained, so that does not to decrease in the effort. Amount 77.03% of industries have a loyal and very loyal customers, remaining 22.97% do not have a loyal customer. In addition, 72.97% of the industries have a steady revenue and customers, the remaining 27.03% of the industries have a uncertainty revenue and customers.

f. **Product Diversity.** Although majority of employers in the PIK Puloagdung are in maturity stage businesses, but some employers under decline. To anticipate this, research by interview found significant phenomena to describe conditions. Many industries do business based on order and only a small industry does production for inventory purposes. The majority of the industry (44.60%) produce more than six (6) type of goods, only 5.40% were producing 1-2 types, as much as 22.97% industries were producing 3-4 type of goods, as much as 27.03% industries producing 5-6 type of goods. The study also found the phenomenon, that 55.06% industries in PIK Puloagdung frequently and always make goods with new style of the earlier, 44.94% never and rarely producing goods with a new style. Meanwhile 94.87% of industries frequently and always were producing follow the taste of consumers (according to customer orders), especially industrial metals that are 100% production often and always producing the customer orders. A total of 86.74% industrial goods is an imitation of existing style, the remaining 13.26% is really new style. As much as 78.32% industri produces goods with a variety of quality, while the remaining 21.68% of the industry producing the same quality.

g. **Stability of macro economy.** The data showed that the perception of entrepreneurs on macroeconomic conditions quite well. Some 76.92% of employers believe that the current interest rate is conducive to business, assume that the remaining 33.08% interest rate loan is less/not conducive. On the other, half of the entrepreneur believe
that the inflation rate is not/was not conducive, the rest considered conducive. Raw material prices for most players in the industry, particularly the metals industry is still considered to be conducive. The exchange rate did not influence to entrepreneurs, because the majority of businesses are manufacturer for domestic needs. But amounted to 69.87% of employers believe that the exchange rate is conducive to the economy.

h. Government Regulation. Government regulation in this study measured by the perception of respondents about facilitating of soft loans, facilitating the localization effort, facilitating electricity subsidies/taxes and facilitating on production/promotion. Ammounted to 75.90% entrepreneurs assumed that the government had facilitated soft loans, although the majority of businesses did not use this facility to their capital, because most of them used their own capital. Whole employers (100%) admitted and agreed they were occupied in local governance location. Besides, 71.59% feel businesses receive electricity facilities (electricity tariff subsidy), while the remaining 28.41% did not recognize. Ammounted to 58.19% entrepreneurs have felt coaching and participating in the exhibition by the manager of PIK, while the remaining 41, 81% are managers never do the coaching, training and participation in exhibitions.

5. Discussion.

OLS method that used in this research is a method that seeks to minimize the number of squared deviations. Deviation or sample error is the difference between the expected value of the variable bound to the true value of the variable bound. If all the assumptions are met, then the estimator obtained from the OLS has characteristics BLUE. Unbiased called because the expected value of the estimate equal to the value of the parameter, and is called the best if this method gives the smallest variance. For that to be done testing irregularities that model is said BLUE, which consists of heteroscedasticity testing, testing and testing autocorrelation multicolinearity in this model. The test results did not find any irregularities classic symptoms. And from the calculation of the regression coefficients obtained the following results:
Tabel 5. Estimation of Regresi Parameter *

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-6.673</td>
<td>3.688</td>
</tr>
<tr>
<td>Maturity</td>
<td>.442</td>
<td>.120</td>
</tr>
<tr>
<td>Heterogenety</td>
<td>.800</td>
<td>.196</td>
</tr>
<tr>
<td>Ec Macro</td>
<td>.421</td>
<td>.111</td>
</tr>
<tr>
<td>Regulation</td>
<td>.257</td>
<td>.196</td>
</tr>
</tbody>
</table>

* Dependent Variable: Viability

Sources: Processing data, 2011

The calculation result above if written on equation is:

\[ Y_i = -6.673 + .442 \times X_1 + .800 \times X_2 + .421 \times X_3 + .257 \times X_4 \]

The equation illustrates that the viability of the industry in the cluster is affected only by three variables, that is the age of maturity of the industry, diversity products, perceptions of macroeconomic stability, whereas no significant government regulation.

The results are not so good for an analysis, because the placement of industrial micro, small and medium enterprises in the industrial cluster “Pulogadung” regulated by local governments.

Furthermore, researchers look for reasons why government regulation is not significant in this study. Through trial and error calculations, it turns out that cause of government regulations do not significant is the presence of an indicator that is less full, that is the facilitation of production and promotion. Apparently if the data of production and promotion facilitation removed from model, the new equation will be obtained as follows:

Tabel 6. Re-Estimation of Regression Parameter a

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>(Constant)</td>
<td>-11.759</td>
<td>3.724</td>
</tr>
<tr>
<td>Maturity</td>
<td>.417</td>
<td>.114</td>
</tr>
<tr>
<td>Heterogenity</td>
<td>.771</td>
<td>.187</td>
</tr>
<tr>
<td>Macroec</td>
<td>.394</td>
<td>.105</td>
</tr>
<tr>
<td>Regulation</td>
<td>.698</td>
<td>.234</td>
</tr>
</tbody>
</table>
The calculation result above if written on equation is:

\[ Y_i = -6.673 + 0.417X_1 + 0.771X_2 + 0.394X_3 + 0.698X_4 \]

The last equation shows that the viability of the industry in the cluster are significantly influenced by the factor of two internal and two external factors.

The results also showed a calculation of correlation and determination coefficient as the following:

Simultaneous correlation coefficient (R) = 0.802, meaning that simultaneous independent variables are closely related significant and positive with dependent variable.

The coefficient of determination is used to measure the level of accuracy the kind of regression analysis. The calculations show that the value of \( r^2 \) is equal to 0.611, this means that 61.11% of the data dependent variable is explained by variation in the independent variable data.

6. **Conclusions and Recommendations**

The data showed that there is viability in the industry cluster in Pulogadung PIK Jakarta. Viability of the industry as measured by income stability, revenue growth and business efficiency showed positive results, and is significantly affected by the four independent
variables studied, which consists of the age of maturity of the industry, product diversity, macroeconomic stability and government regulations. Viability of the industry in the cluster can still grow and be improved if government regulation through the production and promotion facilitation indicators improved.

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