

Long-Term Sustainable Strategy: Mapping Prospects for Labor Based on Productivity and Specialization

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Abstract— Building good human capital can be based on how the Education scheme and sustainable Long-term programs are built. In entering current market share, business organizations face a diverse work environment with sustainable change and development and with the speed to respond to change effectively. In addition, for Indonesia with its diversity, it has a duty to create competitive advantage based on the existence of quality human resources that contribute to the creation of organizational sustainability in the trade sector. The emergence of a series of challenges in the knowledge economy has had a clear reflection on business organizations that have begun to look for new mechanisms to compete and ensure their existence in the business world. Therefore, the importance of the concept of competitive advantage, based on human resources, is a requirement needed to face challenges faced by local, regional or international organizations (Global Institute, 2011). competitive advantage based on human resources is the main producer of new ideas, development of old ideas, and contributions to help in the ability of organizations to expand their current market share and maximize value. On the other hand, placing someone in the right position is also an optimization in productivity. This study aims to see the impact of competitive advantage through investment in intellectual capital and regional specificity as one of the elements in the creation of sustainable organizations in the export sector. Simple and multiple regression is used for data analysis and testing the hypothesis of this study. This research has achieved a series of results reinforced by previous studies in this field such as: Competitive advantage based on different capital is the optimal method that must be used because it contributes to the optimal investment of human resources. This leads to optimal organizational sustainability for companies in various fields and also contributes to the achievement of the company's mission and vision in the future.

Keywords— *Competitive Advantage, Human Capital, Labor, Sustainable*

I. INTRODUCTION

Increasing the value of exports as an effort to improve the economy through international trade is one of Indonesia's goals for now. This is attributed to Indonesia which is still in the middle-income circle. Entering the revolutionary era 4.0, which has creative and modern characteristics, Indonesia must seriously improve considering the value of Indonesia's innovation according to the World Economic Forum is still ranked 68th out of 140 countries. In the practice, one of the factors of production that needs to be strengthened now is in

terms of human capital. Human capital that can be represented by the quality of labor is often neglected in the focus of improving its quality. Even though labor is the driving force of a two-way certified economy, namely in the direction of the stimulus of economic growth to the state while increasing the value of welfare for the population.

In boosting exports, the thing that can be contributed by labor is productivity. Productivity will be an economic power that will drive many sectors including the export sector. If you relate it to Indonesia's current needs, there needs to be a focus on improving productivity. On the other hand, as a simultaneous matter, the government also needs to support the quality of the workforce in terms of skill and education as a future investment. With good education, it is hoped that there will be an increase in the quality of the workforce as well as the quality of the economy. However, the thing to consider is how to increase the efficiency of this investment.

Thus, this study was made to look at the optimal conditions of human capital investment and labor productivity against the value of exports. In addition, it is also explored more deeply about the effects of specialization on labor productivity performance, while at the same time examining regional competitive advantage reflected in regional income. This is expected to be a means of recommendation for decision making.

II. METHODOLOGY

A. Theory

Exports can be influenced by labor productivity, as well as investment in human capital. Productivity will be able to increase the volume of exports, while investment in human capital will result in long-term growth. Arnold and Hussinger (2005) analyzed the relationship between firm productivity and export behavior in German manufacturing firms by using a total factor productivity approach; they found that highly productive firms were self-selected for export market entries, while exporting it did not play a significant role in productivity improvements. The human capital investment is the basis for organization's existence and development. The human capital plays a key role dealing with the problems faced by the organization, and the development of appropriate solutions that lead to meeting the challenges faced by the organization (Noe, 2009).

In increasing productivity, specialization efforts can be one alternative that can be done. Specialization can foster innovation from companies that have a good effect on labor market performance (Martin Robson, 2006). Innovation that occurs, can be a stimulus for productivity.

Competitive advantage has several concepts in its definition. Competitive advantage can mean the ability obtained by a company through the characteristics and resources it has to be able to have higher performance compared to other companies in the same industry and market (Porter, 1995), as well as the pursuit of the organization to own special attributes that distinguish them from other organizations working in the same field (Wei, 2015). One proxy of competitive advantage from a region is endowments, including natural resources, geographical location, population, and land area, creating a foundation for prosperity, but the true prosperity of productivity in the use of endowments (Porter, 2013).

B. Model and Statistical Tools

This research was conducted in 34 Indonesian provinces with a research year in 2018. Variables from this study were the value of exports, investment in education, labor productivity, specialization, and regional income.

In this research, it is necessary to calculate the efficiency of export values from each region. With efficiency it can be seen which areas are potential and less efficient. Efficiency calculations can use frontier and DEA (Data Envelopment Analysis). However, the frontier function is considered to have assumptions that need to be met. One of the assumptions is normal distribution. However, we know that there are outliers in the case of Indonesian export data and also regional income data which also have outliers. So, in this study using the DEA analysis method combined with multiple linear regression. The use of DEA is to see the level of efficiency of export value from a combination of inputs in the form of investment in human capital and the level of labor productivity.

It also uses multiple linear regression to see the one-way effect of a variable on the dependent variable. The aim is to design focus goals based on the effects given by the variable. In addition, if the significance of the variable occurs, it can raise assumptions about the effect given is valid to be interpreted and also can be seen the value of r-squared in seeing how much the contribution of the effect is given.

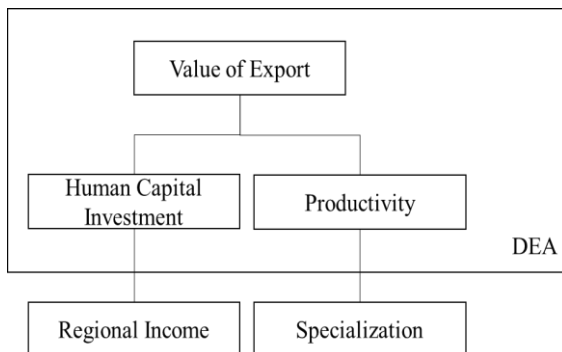


Fig. 1. Mind Map and Model

The models that will be formed are as follows.

$$\text{Log(Export Value}_i) = \beta_0 + \beta_1 \text{Log(Human Capital Investment}_i) + \beta_2 \text{Log(Productivity}_i) + \text{error}_i \quad (1)$$

$$\text{Log(Human Capital Investment}_i) = \gamma_0 + \gamma_1 \text{Log(Regional Income}_i) + \text{error}_i \quad (2)$$

$$\text{Log(Productivity}_i) = \delta_0 + \delta_1 \text{Log(Specialization}_i) + \text{error}_i \quad (3)$$

With human capital investment is the state budget for education, productivity is the total regional output per number of workers, and the specialization index is the absolute coefficient value of regional specialization.

$$\text{CARS (Spesialisasi Absolut)} = \frac{\left[\sum_{i=1}^n \frac{x_i - \bar{x}_i}{n-1} \right]^{\frac{1}{2}}}{\bar{x}_i} \quad (4)$$

In addition, in the DEA model, the return to scale variable and also constant return to scale are calculated to calculate the efficiency scale. This efficiency scale value will then be used to map export prospects based on human capital input.

III. RESULT AND DISCUSSION

The analysis starts from the calculation of how the effects of investment in education and productivity can increase the value of exports from a region. Investment in Education is a proxy for investment in human capital and productivity is an economic power of productive human resources.

The models produced are as follows.

TABLE I. EXPORT VALUE EQUATION

Dependent Variable: LOG(Export Value)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-18.0602	8.9980	-2.0071	0.0535
LOG(HCI)	0.6358	0.2458	2.5866	0.0146
LOG(Productivity)	1.7233	0.4007	4.3007	0.0002
R-squared	0.4955	Mean dependent var		30.9005
Adjusted R-squared	0.4630	S.D. dependent var		1.71639
S.E. of regression	1.2577	Akaike info criterion		3.3806
Sum squared resid	49.0411	Schwarz criterion		3.5153
Log likelihood	-54.4710	Hannan-Quinn criter.		3.4266
F-statistic	15.2268	Durbin-Watson stat		2.2159
Prob(F-statistic)	0.0000			

Based on the regression modeling analysis that has been done, it can be seen that in increasing the growth of export value, human capital investment and labor productivity are able to have a positive and significant effect. The elasticity of human capital investment is indeed not elastic but seems to make a big contribution if it increases. Human capital investment can increase 0.6% of export value if there is a

growth in investment in human capital. In addition, it can be seen that actors from all types of national production including exports are sourced from labor. It is seen that the productivity elasticity of labor has elastic elasticity. Labor productivity is able to stimulate export value of 1.7% if productivity increases by 1%.

It shows how important human capital is in spurring export value. The question now is about how to improve the quality of human capital, both technically and through external factors such as investment.

Indonesia is a country that has heterogeneity between provinces but tends to be homogeneous within the province. This raises the possibility of specialization in spurring the productivity of its workforce. If we modeled, the following results are obtained.

TABLE II. PRODUCTIVITY EQUATION
Dependent Variable: LOG(PROD_TENAGA_KERJA)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.6860	0.1874	99.7114	0.0000
LOG(SPESIALISASI)	0.9119	0.2832	3.2201	0.0029
R-squared	0.2447	Mean dependent var		18.1469
Adjusted R-squared	0.2211	S.D. dependent var		0.5564
S.E. of regression	0.4910	Akaike info criterion		1.4723
Sum squared resid	7.7149	Schwarz criterion		1.5621
Log likelihood	-23.0294	Hannan-Quinn criter.		1.5029
F-statistic	10.3691	Durbin-Watson stat		1.5513
Prob(F-statistic)	0.0029			

Based on the modeling performed, it was found that specialization has a significant positive effect on the growth of specialization. Specialization has an elasticity that approaches elastic values. Specialization is able to effect an increase in export value of 0.9% if there is a 1% increase in productivity.

The significant effect given by specialization raises hopes that the heterogeneity that occurs is not a challenge that needs to be feared. The specialization is in fact able to grow the potential for heterogeneity between provinces in which it tends to be homogeneous. According to Martin Robson (2006) who conducted research in the UK regarding the effects of specialization on labor market performance, specialization was able to provide an impetus for innovation for companies so that there was an increase in profitability due to increased labor productivity. This increase in fact will also lead to better labor absorption due to market performance which will be more sensitive to a more productive workforce.

The thing that needs to be considered by the government is how to increase specialization but not absolutely remove non-specialized sectors. If it is only focused on

specialization, there will be the possibility of the death of one sector in an area which leads to the absorption of labor that is not optimal. The advice that can be given is the development of regional competitive advantage based on specialization or the basis of each region. This will be in line with what was done by MayBank in improving the performance of its workers. This is because the concept of "people in the right place" will be optimal if specialization occurs.

Talking about competitive advantage, will also have an effect on human capital investments that occur. In this study regional competitive advantage is reflected through regional original income. Regional original income is able to be a differentiator and a competitive and appropriate thing if you see the meaning given by competitive advantage.

Competitive advantage is modeled on how to invest in Education. This is to see how the optimization can be done to increase investment in the human capital sector. The models made are as follows.

TABLE III. HCI EQUATION
Dependent Variable: LOG(HCI)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.5972	2.1419	3.0800	0.0042
LOG(REGIONAL INCOME)	0.9396	0.0948	9.9141	0.0000
R-squared	0.7544	Mean dependent var		27.8182
Adjusted R-squared	0.7467	S.D. dependent var		0.9069
S.E. of regression	0.4564	Akaike info criterion		1.3262
Sum squared resid	6.6658	Schwarz criterion		1.4159
Log likelihood	-20.5447	Hannan-Quinn criter.		1.3568
F-statistic	98.2891	Durbin-Watson stat		0.5649
Prob(F-statistic)	0.0000			

Based on the model produced, it can be seen that regional income performance as a proxy of competitive advantage has a significant positive effect on investment in human capital. A 1% increase in regional competitive advantage, will increase investment to human capital by 0.94%. This value is close to the elastic value.

In this case, it can be suggested, in an effort to improve human capital, what can be done is to optimize competitive leverage from the region. Increasing competitive advantage will lead to the ability of the region to invest in its human capital. The optimal competitive advantage of an area will also lead to optimism in an effort to improve the quality of human capital.

After a thorough discussion, it was seen that how human capital is very crucial and fundamental in influencing the value of exports from the region. Labor productivity will work in the long and short term, while investment in human capital is a long-term scheme that can be calculated by the government. The next question that arises is from where the

development will take place. With this question, a spatial framework is developed that maps export efficiency from each region.

Based on the prospect, it can be seen that the areas that are efficiently input oriented are located in the islands of Sumatra, Sulawesi and Kalimantan. This is due to the focus of exports that are still based on natural resources, because it will require relatively low costs. The area that began to appear inefficient is the Java island which is in fact the central economy. This is presumably due to a shift in the export sector towards non-traditional products, but has not been carried out optimally. Finally, the regions which are regions with poor efficiency evenly distributed are eastern Indonesia. It is seen that the Nusa Tenggara, Maluku and Papua regions have backwardness in terms of inputs to support exports. This has increasingly become a warning to the government in efforts to promote development.

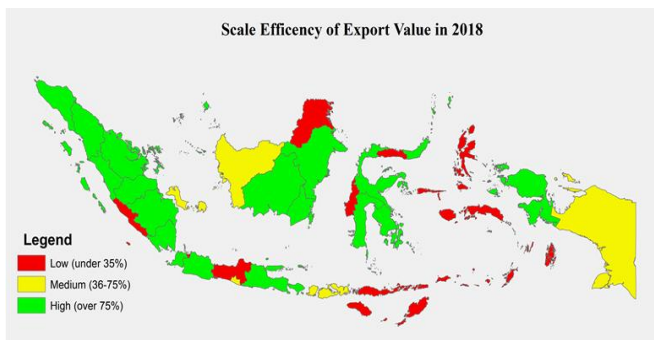


Fig. 2. Prospect Mapping Based on Efficiency

IV. CONCLUSION

Based on the results of the analysis that has been made, it can be concluded that human capital is the fundamental foundation in any production including the export sector. Productivity as a result of good human capital can be optimized with optimal specialization. In addition, human capital investment (education) can be optimal if it is also able to optimize regional competitive advantage.

Productivity is the long-term key for Indonesia's export sector. Optimizing productivity with specialization can be done by designing leading sectors in each region, and

focusing sectors in those regions. This is also given that competitive advantage will indirectly improve the quality of human capital investment. In addition, human capital investment will lead to long-term productivity stimulus. With the new era of globalization, it is not impossible that exchanges between sectors in the regions will occur, so the government does not need to worry about the inter-sectoral supply demand that is focused on a region. In addition, Indonesia's heterogeneity can also be taken into consideration regarding the possibility that this can be applied in providing better long-term export opportunities.

There are a number of regions that have good prospects, but there are also regions that tend to be inefficient that there are regions that have a poor efficiency trend. This requires the direction of analysis by developing GIS frameworks and concrete steps in the form of equitable development. The design of prospects based on GIS can also support the government's long-term strategy, bearing in mind that this mapping can be an illustration of a development center. This will also give an idea of equitable development in the effort of national development efficiency considering that regions such as Jakarta has low efficiency because of too high inputs, although this is accompanied by high outputs.

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