Selection of Export Destination Countries for Home Industry Products Using Multiple Linear Regression Dummy Many Criteria

I Putu Artaya¹*, I Gede Arimbawa¹, Achmad Muchayan²
Departement of Management, Narotama University, Surabaya, Indonesia¹
Departement of Information System, Narotama University, Surabaya, Indonesia²
putu.artaya@narotama.ac.id, gede.arimbawa@narotama.ac.id, achmad.muchayan@narotama.ac.id

ABSTRACT

Purpose: The purpose of this research is to assist home industry products that are eligible for export in choosing the export destination country with the highest economic value. There are three export destinations, i.e Europe, the Middle East and Southeast Asia.

Design/methodology/approach: Based on a sample of business actors in eight cities, several primary data were obtained which became the main data for analysis, through a certain approach, namely the analysis and estimation process, the results obtained that the analysis used in this study could be used as an approach to determine the answer to the problem, i.e Regression Multiple Linear Dummy Many criteria that can be used to determine the choice of export destination countries.

Findings: There are no other studies that use dummy multiple linear regression analysis with many criteria in the estimation process in finding answers to existing cases. This analysis process turns out to be easier and more accurate when used in the estimation process. So that it becomes a separate alternative in the research analysis method. Therefore, this research can be a solution to the difficulty level of estimation that has been done by other researchers.

Paper type: Research paper

Keywords: Home Industry Products, Export Product, Dummy Multiple Linear Regression.

Received : February 24th
Revised : March 12th
Published : March 31th

I. INTRODUCTION

One type of business activity that exists in MSMEs is home-based business products or better known as home industry products. Every year the number of home-based business actors is increasing proportionally according to the development of the environment and information technology. Of course, this condition is very good to support economic growth in Indonesia after the Covid 19 pandemic. The emergence of this phenomenon is because each region or region in Indonesia always has local commodities that are worthy of sale which are potential to be developed continuously. This phenomenon may arise because of the economic crush or perhaps because of the use of local wisdom which has extraordinary potential. Regardless or not, this home industry-based economic development needs to be responded positively, developed, directed so that it can grow for the better. Because all this time, many businesses initially grew as home-based businesses then slowly developed and rose to become micro-enterprises, small businesses and finally were able to penetrate the export market. This change in business conditions is able to absorb labor and reduce the unemployment rate. Reducing unemployment will result in an even distribution of income for industrial workers (Yunanto, 2009). The occurrence of the prolonged Covid 19 pandemic was able to trigger the idea of people to have their own businesses, because many workers were laid off. Creativity during the pandemic has made the growth of home-based businesses increase significantly according to the occurrence of economic difficulties.
II. LITERATURE REVIEW

In Indonesia facing a phenomenon like this, all parties must feel moved to participate in any form of support to guide, direct, train and teach various forms of activities that can benefit the home-based business so that it can progress and continue to develop (Rasbin, 2020). Because when a home-based business starts to grow, it is not without problems, in fact sometimes many obstacles arise for them to be able to try to move forward. To be able to improve comprehensive home business management, several steps need to be carried out empirically, and continuously, including:

1. The main thing is improvement in the production process, in the form of the use of raw materials and supporting materials that are classified as environmentally friendly, this is a demand from other countries globally if home-based business products begin to enter the export market. So it must improve and be competitive.

2. Management that leads to cost efficiency, business owners must learn how to streamline the costs they incur as best as possible in an effort to manage their business towards a better direction, for example the adoption of technology in the production process using equipment that tends to be modern.

3. The creation of cooperation with funding sources, when the business being carried out requires additional capital funds in developing the business. However, funds for investment purposes must indeed exist, even though the form of business is still relatively new and not large. This must be done by participating in more and more various forms of training in the field of business management, funding sources, and more modern management (Karlova & Serova, 2020).

4. Improving the quality of products and services, owning a business cannot be separated from long-term activities, i.e quality improvement, from the point of view of raw materials, production processes, packaging processes, labeling and the delivery of goods when the products produced must be shipped long distances into the hands of consumers.

5. Improvements in technology in the field of transactions, the form of transactions is increasingly developing in a better, faster and accurate direction, all of which are electronic or online based. If you are weak in the field of transaction methods, then difficulties in the field of transactions will hinder the payment process that consumers want to make. So that the process of updating and upgrading the payment and transaction processes must be well controlled by the business owner (Widyaningtyas & Widodo, 2017).

6. Improvement of product legality or feasibility, through a certification program implemented by the government which has long provided facilities in this field, so that the products produced by business owners can be guaranteed their feasibility in the target market in accordance with applicable regulations and laws. This compliance is in accordance with the social responsibility of business owners in serving their customers, both local and global markets (Madaleno et al., 2017).

7. Increased cooperation or network formation with fellow business owners, with the government, or with consumers through the adoption of technology that allows it to be used as a means of forming networks. The presence of a network makes business activities more efficient, because every business owner needs important information at all times. By forming a network, sometimes obstacles or problems that arise at any time can be resolved quickly.

8. Product expansion or often called diversification. Business owners always try to add to their product line so that their consumers always have a choice when business owners make offers, promotions, services and exhibition activities. With a wide variety of products, consumers have the right and easy to make choices about the products they need, this is generally done by large buyers, not retail or retail buyers (Adam, 2011).
Figure 1. Annual growth of home-based businesses over the last four years

Source: Central Bureau of Statistics, 2021

Figure 1 above shows the phenomenon of shifting individuals or industry players who initially worked in the formal sector to switch jobs to the informal sector by opening their own businesses. This is caused by the age factor or the downsizing in the place where they work so that they lose their jobs and livelihoods. Under these conditions, they eventually turned into home-based business actors where the quantity increased sharply from 2021 when it entered the new normal era due to the prolonged COVID-19 pandemic in Indonesia (BPS, 2021). The process of growing a home-based business based on business opportunities, product demand opportunities, individual work abilities or skills, and taking advantage of business opportunities by using local commodities owned by each region.

Table 1. Various types of superior products for export in 2021

<table>
<thead>
<tr>
<th>No.</th>
<th>Types of Home Industry Products</th>
<th>Export Destination Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Health mask</td>
<td>Malaysia, Philipina</td>
</tr>
<tr>
<td>2.</td>
<td>Frozen food</td>
<td>Thailand, Vietnam, Philipine</td>
</tr>
<tr>
<td>3.</td>
<td>Animal feed</td>
<td>Malaysia</td>
</tr>
<tr>
<td>4.</td>
<td>Muslim fashion</td>
<td>Malaysia, Arab Saudi</td>
</tr>
<tr>
<td>5.</td>
<td>Hand sanitizer</td>
<td>Jepang, Malaysia, Arab Saudi</td>
</tr>
<tr>
<td>6.</td>
<td>Coffee drink product</td>
<td>Arab Saudi</td>
</tr>
<tr>
<td>7.</td>
<td>Salmon crackers</td>
<td>Australia, Jepang, Malaysia</td>
</tr>
<tr>
<td>8.</td>
<td>Ready-to-eat seasoning</td>
<td>Korea Selatan, Arab Saudi</td>
</tr>
</tbody>
</table>

Source: Central Bureau of Statistics, 2021
Table 1 above shows the strength and economic value of home-based business products that have developed rapidly and successfully entered export markets in various countries. This shows that home-based business products are able to upgrade based on demand that comes from other countries as commodities that have high economic value. In addition to having economic value, the business being carried out has received guidance, supervision and assistance so that the management activity model is in accordance with the demands and specifications of the export destination country. One thing that needs to be considered in improving the quality of home-based business products for export is the process of product legality so that it can be accepted by the destination country. The process of improving the business from various angles is indeed necessary so that the production or products offered to other countries get a good appreciation.

Breakthroughs that can be made by business owners so that products can be accepted in other countries as export destinations, include (Kartika, 2021):

1. Increasing the added value of products, products that will be offered to other countries should not be the same as other existing products, but business owners must carefully read consumer behavior in the destination country. Aspects that need to be considered in this study are competitive prices and tend to be cheaper, this is a challenge for business owners so that products can be cheaper than competitors, product quality must be better than other products, better packaging, environmentally friendly, products provide benefits more, and have different flavors, the ordering process is faster, and the owner has a communication medium that can be contacted if a consumer wants contact with the business owner.

2. Promoting better products and continuously, now the business management model has led to the era of society 5.0, meaning that everything that is done by business owners is all electronic based and all types of information about products can be accessed easily and quickly so that interested consumers get sufficient information, for them when they want the products offered. For this activity, the role of digital marketing will be more prominent and supported by communication and information via the web. Today's business activities lie in the speed of getting information in two directions, this is one of the competitive advantages or business advantages, because buyers always want to make decisions quickly. Because now the level of competition in the international market is so tight, it even exceeds the tight competition in the local market. This is the impact of the free trade model that has been implemented for a long time.

3. Implementing special programs for product promotion activities, promotional models with this approach tend to be carried out near special days such as before Eid al-Fitri, Christmas and New Year celebrations. Special offers given through promotions are generally special prices or purchase discounts aimed at individual buyers or buyers who have become customers. Thus the customer or consumer will be loyal to the program that has been implemented with the aim of increasing sales in the international market. Consumers or customers feel happy if they get discounts or other programs at times that are considered special by consumers or customers. This is a way to retain customers and become an attraction for consumers.

4. Optimizing digital marketing activities, product marketing to international markets cannot be separated from the influence of the internet, the web. One electronic device that is ideally used as a promotional support is Youtube. Through this device, information embedded in promotional messages is easily accessible to viewers without being limited by place, space and time. This is an opportunity for business owners to optimize their communication activities when promotional activities take place. By using YouTube, viewers will be able to visit your website easily. The better the management of YouTube content, the more attractive and attractive it is to consumers, this is a product’s competitive strength. In addition to displaying messages and physical products on YouTube, it is also necessary to display products when participating in exhibitions to make sure that home-based business products do have economic value that is worthy of consideration by buyers.

In addition to the four important things above, other things that should be obtained to know the preparations that must be made and to know the magnitude of the challenges that might occur when the product is offered to the international market are (Sari, 2018):

1. Conducting research, the main purpose of this activity is to obtain information about the culture of the people in the destination country, their consumption patterns, purchasing power, income level and shopping behavior. Through several important information obtained, it will be possible to determine whether the product is suitable for entering the country. Another aspect that can be used as a support is to conduct consultations with certain institutions that are specifically dealing with product promotion in the international market, so that at least important useful information will be obtained.

2. Cooperate with other business owners who have previously entered the international market. Collaborating with experienced agencies to create conditions to minimize financial risk when products enter new markets, even if necessary, business owners can join other teams that handle activities like this, the goal is that the product does not experience rejection because it is considered a competitor when trying to enter the market.
3. Understand the tax system in other countries. In order for the product to have complete legality, complete all forms of documents required or required. So that if one day you are subject to the obligation to pay taxes, everything can be done smoothly and with sufficient information, considering that the implementation of taxes in other countries is not necessarily the same. Talking about taxes is the same as talking about business legality. Business legality is marked with a business trading license (BTL), a taxpayer identification number (TPIN), and a company registration certificate (CRC). Other aspects that are also important are certificates of origin of materials, statements or certifications regarding quality, trade invoices, and export bills as a complete requirement for export activities.

4. Prepare a fast and accurate service model. For every business activity in another country, one main thing that can be used as a support is the smooth communication and accuracy of information between the two parties involved, i.e between the seller and the buyer. Because nowadays consumers always need all kinds of services that are online and real time. Reliable and fast communication is one of the keys to success when a business starts operating in the international world, in addition to products that must have high privileges in the eyes of buyers or buyers.

III. METHODOLOGY

In an effort to process data collection as material for study and analysis in this research activity, several steps are used as follows:

A. Research Subjects And Samples

The process of selecting research subjects was carried out randomly, on the basis that the research subjects were business owners who wanted to develop their market in an effort to increase the quantity of sales, especially those related to export products. The research subject is not yet well established in product export activities but has begun to carry out as an act of exploring entry into the international market. The number of home business owners who were successfully surveyed and used as research samples was 20 business owners. Their locations are spread across 8 cities in Indonesia, i.e: Padang, Palembang, Makassar, Bandung, Yogyakarta, Semarang, Denpasar, and Mataram. The research team did not use other cities besides the cities mentioned above because the cities mentioned above have the most superior export products. This is the main attraction for the research team.

B. Data Collection Process

To obtain sufficient data for study and analysis purposes, the data collection process in the eight cities mentioned above used a google form which was distributed using a WhatsApp group to each business owner. Meanwhile, other required data can be obtained through government institutions, i.e the Central Statistics Agency and other references deemed to have credibility and relevance as supporting data or documents.

C. Research Variable

To support the needs of the analysis, the variables used in this research activity are six variables, which can be described as follows:

1. The export value variable is a number that if it is achieved and as a determinant or basis for a decision when a product is marketed in a country, through this variable, the estimation process for selecting the export destination country can be determined.

2. Variety or product items offered or to be traded in the international market, either directly or indirectly, individually or in groups. This product range is a product that already has the eligibility as an export commodity.

3. Income per capita of export destination countries. A quantity that shows the level of income of a country which is calculated based on the gross national product at constant prices divided by the number of residents measured using a certain base year value.

4. The cost of sending goods to the destination country in one monetary unit per kilogram of weight of goods or products.

5. Index 1 is a group of countries located in the European region as an alternative choice of export destination.

6. Index 2 is a group of countries located in the Middle East region as an alternative export destination for home industry players.

7. Index 3 is a group of countries located in Southeast Asia as an alternative export destination for home industry players.
D. Data Analysis Model

For the purposes of processing data in the decision-making process, we need an analytical tool that is relevant to the decision-making process, therefore the analytical model used is multiple linear regression analysis with many criteria. The formulation of the model equation is as follows (Santoso, 2010):

\[
\text{Export Value} = \beta_0 + \beta_1 \cdot \text{Product Items} + \beta_2 \cdot \text{Income Per Capita} + \beta_3 \cdot \text{Shipping costs} + \beta_4 \cdot \text{Index 1} + \beta_5 \cdot \text{Index 2} + \beta_6 \cdot \text{Index 3}
\]

The meaning of the elements of the model equation as follows:

- \(Y\) = Export Value
- \(X_1\) = Product Items
- \(X_2\) = Income per capita
- \(X_3\) = Shipping Costs
- \(X_4\) = European countries
- \(X_5\) = Middle East countries
- \(X_6\) = Southeast Asian countries
- \(\beta_0\) = Constant Value
- \(\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6\) = Regression estimator value

The above formulation is a multiple-criteria multiple linear regression analysis tool as the main estimation tool in the process of determining or selecting the export destination country.

E. Three Regions of Product Export Destinations

In general, in dummy multiple linear regression analysis, there are many criteria, the classification of destination countries is divided into three criteria, i.e countries in the European, Middle East, and Southeast Asian regions as shown in table 2 below (Santoso, 2010):

<table>
<thead>
<tr>
<th>Country of Destination</th>
<th>Index 1</th>
<th>Index 2</th>
<th>Index 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>European countries</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Middle East countries</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Southeast Asian countries</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Export destination countries as table 2 above are classified into three i.e Europe, Middle East, and Southeast Asia. Then the classification is called criteria.

F. Research Concept

To provide a brief overview, the research concept used as a framework for thinking is as follows:
Selection of Export Destination Countries for Home Industry Products Using Multiple Linear Regression Dummy Many Criteria
I Putu Artaya¹, I Gede Arimbawa¹, Achmad Muchayan²

Figure 2 above shows that to be able to determine the export destination country, there are three main components formed in the research concept, i.e. the average number of product items in all cities in Indonesia, the income per capita of the destination country, and the distance traveled for delivery of goods or products to the country purpose.

IV. ANALYSIS AND DISCUSSION OF RESULTS

A. Export Featured Products
The initial step of data collection showed that several cities in Indonesia showed the condition of several types of their superior products that had been declared eligible as superior products for export. Actually, many products produced by home industries originating from Indonesia have advantages as required by the buyer, but there are some superior products that are still unable to compete compared to superior products belonging to other countries that carry out export activities with the same destination country. The number of items of Indonesia's superior products is still less diverse and type compared to home industry players in neighboring countries in the ASEAN region. So that in the future the diversification process for business owners who want export activities for their products must be improved through various efforts. The display of eight cities in Indonesia that have superior products, types and varieties can be seen in detail in table 3 below:

Table 3. Leading home industry products in eight cities in Indonesia that are eligible for export

<table>
<thead>
<tr>
<th>No.</th>
<th>Cities in Indonesia</th>
<th>Featured Product Name</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Padang</td>
<td>Fruits, Leather, Embroidery, Embroidery, Brown, Weaving, Songket, Sea Fish, Essential Oils</td>
<td>9</td>
</tr>
<tr>
<td>2.</td>
<td>Palembang</td>
<td>Pempek, Coffee, Medical Devices, Carpet, Songket</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>Makassar</td>
<td>Cocoa, Coffee, Pepper, Rice</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>Bandung</td>
<td>Yogurt, Banana Chips, Shredded Cob, Fried Sambal, Muslim Fashion</td>
<td>6</td>
</tr>
<tr>
<td>5.</td>
<td>Yogyakarta</td>
<td>Coconut Sugar, Nutmeg Powder, Sweet Clove Flower, Vanilla Fruit, Swallow's Nest</td>
<td>5</td>
</tr>
</tbody>
</table>
Selection of Export Destination Countries for Home Industry Products Using Multiple Linear Regression Dummy Many Criteria
I Putu Artaya¹, I Gede Arimbawa¹, Achmad Muchayan²

6. **Semarang**  Batik, Convection, Leather Shoes/Bags, Processed Products  4

7. **Denpasar**  Incense, Endek Cloth, Spa Products, Fashion Products  4

8. **Mataram**  Jewelry, Pearls, Underarm Products, Weaving  3

Note: Average number of products from 8 cities: 40/8=5

Source: Data analysis.

As shown in table 3, various superior products that have quite large export opportunities in traditional markets, take various forms in eight cities in Indonesia. The list of products in table 3 is said to be superior products because there are overseas enthusiasts. This greatly opens up opportunities and opportunities for the export of these products to enter the international market.

B. Export Destination Countries

To determine the export destination country, data on the country’s per capita income is needed, because the level of per capita income affects the purchasing power and consumption level of the population in that country (Khan & Abasyn, 2017).

<table>
<thead>
<tr>
<th>No.</th>
<th>Countries</th>
<th>Income Per Capita (US Dollar)</th>
<th>Shipping Cost Per Kilogram (US Dollar)</th>
<th>Region Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Luxembourg</td>
<td>96.602.32</td>
<td>54,01</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Switzerland</td>
<td>112.867.46</td>
<td>47,07</td>
<td>European Countries</td>
</tr>
<tr>
<td>3.</td>
<td>Ireland</td>
<td>89.668.50</td>
<td>45,46</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Norway</td>
<td>67.988.59</td>
<td>54,33</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Saudi Arabia</td>
<td>98.051.40</td>
<td>40,62</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Jordan</td>
<td>97.880.96</td>
<td>31,30</td>
<td>Middle East Countries</td>
</tr>
<tr>
<td>7.</td>
<td>Turkey</td>
<td>97.438.85</td>
<td>53,90</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Bahrain</td>
<td>86.189.03</td>
<td>52,61</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Taiwan</td>
<td>94.751.11</td>
<td>41,37</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Australia</td>
<td>81.885.47</td>
<td>40,29</td>
<td>Southeast Asian Countries</td>
</tr>
<tr>
<td>11.</td>
<td>Japan</td>
<td>102.366.48</td>
<td>38,93</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>South Korea</td>
<td>88.265.31</td>
<td>33,49</td>
<td></td>
</tr>
</tbody>
</table>

Source: Economic Indicators (Central Bureau of Statistics, 2021)
In order for the analysis process using the multiple-criteria dummy multiple linear regression analysis approach to be carried out, the data display above must be changed to the average data from the three classifications of the country's area presented in table 4 above the average data display can be seen in table 5 below.

Table 5. Data on average income per capita per year and average cost send the product to the country of export

<table>
<thead>
<tr>
<th>No.</th>
<th>Income Level Classification</th>
<th>Average Income Per Capita (US Dollars)</th>
<th>Average Shipping Costs Per Kilogram (US Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>European Countries</td>
<td>91.781,72</td>
<td>50.22</td>
</tr>
<tr>
<td>2.</td>
<td>Middle East Countries</td>
<td>94.890,06</td>
<td>44.61</td>
</tr>
<tr>
<td>3.</td>
<td>Southeast Asian Countries</td>
<td>91.817,09</td>
<td>38.52</td>
</tr>
</tbody>
</table>

Source: Economic Indicators (Central Bureau of Statistics, 2021)

Table 5 above shows the classification of export destination countries based on the average income per capita and the average cost of shipping goods or products. The two variables shown in table 5 are the two main components in the analysis and decision-making process, so that based on the results of the analysis it can be determined whether the product should be exported to Europe, the Middle East or to the Southeast Asia region.

C. Results of Multiple Linear Regression Analysis Dummy Criteria

The process of data analysis using dummy multiple linear regression analysis with many criteria can be seen below:

Table 6. ANOVA test results or simultaneous test

<table>
<thead>
<tr>
<th>ANOVAb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Indeks3, Income_Per_Capita, Shipping_Costs, Indeks2, Product_Item, Indeks1
b. Dependent Variable: Export_Value

Table 6 shows that all independent variables in the regression model have been shown to be significant or play a role in estimating the value of exports to destination countries. This means that all the strengths that exist in the independent variables can be used as a basis for estimation in measuring changes in the behavior of the value of the dependent variable. Table 6 above means that of the three independent variables included in the dummy multiple linear regression model equation with many criteria, all of these variables are: the number of export product items, income per capita of the destination country, product delivery costs per monetary unit have a significant role or influence, significant in the estimation equation that has been formed. So it can be concluded that in the process of estimating the three independent variables above, at least one or all of them have real power to be used as regression estimators in the equation when the calculation or estimation process is carried out. In other words, the three independent variables in the validly formed equation can be used as estimator variables. The understanding of the results of the analysis above is that all independent variables involved in the estimation equation can be used.
Table 7. Coefficient Value of each regression estimator (the results of the analysis are only partially displayed)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>10,211</td>
<td>44,590</td>
<td>.229</td>
<td>.028</td>
</tr>
<tr>
<td>Product_Item</td>
<td>10,096</td>
<td>4,307</td>
<td>.341</td>
<td>2.344</td>
</tr>
<tr>
<td>Income_Per_Capita</td>
<td>42,333</td>
<td>9,256</td>
<td>.615</td>
<td>4.574</td>
</tr>
<tr>
<td>Shipping_Costs</td>
<td>18,241</td>
<td>10,073</td>
<td>.418</td>
<td>2.225</td>
</tr>
<tr>
<td>Indeks1</td>
<td>62,818</td>
<td>36,689</td>
<td>.262</td>
<td>1.712</td>
</tr>
<tr>
<td>Indeks2</td>
<td>102,652</td>
<td>34,275</td>
<td>.373</td>
<td>2.995</td>
</tr>
<tr>
<td>Indeks3</td>
<td>86,077</td>
<td>30,096</td>
<td>.373</td>
<td>2.860</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Export_Value

Table 7 above shows that all the independent variables used as estimators in the model equation have a significant effect on the dependent variable, namely the export value. Thus, all the independent variables in the regression equation can be used as an estimation tool for the value of exports. After the regression analysis process is complete, the estimation equation is formed as follows:

Export Value = 10,211 + 10,096 Product Items + 42,333 Income Per Capita + 18,241 Shipping Costs + 62,818 Index 1 + 102,652 Index 2 + 86,077 Index 3

For the estimation process in the three groups of export destination countries, the numbers in table 6 and table 2 are included in the estimation equation, because there are three classifications of destination countries, the analysis process is also carried out three times according to the number of indexes. The estimation process using the regression equation that has been formed to determine the destination of the export countries of eight cities in Indonesia as shown in table 3 is to enter the values listed in table 5 as follows:

1. European export value= 10,211 + 10,096 (5) + 42,333 (91,781,72) + 18,241 (50,22) + 62,818 (1) + 102,652 (0) + 86,077 (0) = 3.886,435,12
2. Middle East region export value= 10,211 + 10,096 (5) + 42,333 (94,890,06) + 18,241 (44,61) + 62,818 (0) + 102,652 (1) + 86,077 (0) = 4.017,957,98
3. Southeast Asia region export value= 10,211 + 10,096 (5) + 42,333 (91,817,09) + 18,241 (38,52) + 62,818 (0) + 102,652 (0) + 86,077 (1) = 3.887,742,28

Based on the results of the dummy multiple linear regression analysis of many criteria, through the results of calculations or estimates through the display above, it can be seen that the final calculation results show that export destinations to the Middle East are much higher in value than the other two regions, namely Europe and Southeast Asia. However, this is an estimation result and the basis for the estimation is the three variables listed in the model equation. Other factors that can influence the choice of export destination countries are actually very diverse. However, whatever the result, the basis for the estimation decision is only based on the export value that emerges from the calculation results. Other factors that have an influence on the dependent variable are considered to have the same behavior in the three regions. In this way, the selection and decision-making
Selection of Export Destination Countries for Home Industry Products Using Multiple Linear Regression Dummy Many Criteria
I Putu Artaya¹*, I Gede Arimbawa¹, Achmad Muchayan²

The process does not deviate. Because this modeling is an estimate, the highest export value in an area will be selected without considering too broad aspects.

![Graph showing export value comparison](image)

**Figure 3. Visualization of the selection of export destination countries with the best value**

Through Figure 3 it can be explained that the difference in export value for the three countries above is indeed thin, but mathematically the country that should be chosen is the country with the best or highest export value.

![Graph showing normal distribution](image)

**Figure 3. Display of a normally distributed curve**
The above curve shown in Figure 3 is used to see whether the data used in the regression analysis is normally distributed or otherwise is not normally distributed. The points or data that appear on the curve above are all closer to the diagonal line, so the data can be said to have a normal distribution. Because the data above has a normal distribution, the data is suitable for use for parametric analysis or testing. Means in the data normality test, because the data above has a normal distribution, the form of data distribution has a normal distribution and has a maximum error or significance level and does not exceed 5% (Cahyono, 2015). Figure 3 above shows the cities in the three export destination areas, which consist of big cities and small towns. Because the names of the cities coincide with the diagonal lines in the picture, these cities have relevance to Indonesia’s exports to three regions, i.e. Europe, the Middle East, and Southeast Asia.

V. CONCLUSION

After the estimation process has been carried out, it can now be seen clearly through the results of calculations that have been carried out in three export destinations for Indonesian products, where the final result is the Middle East with the highest value. This means that economically, the Middle East region provides higher benefits for eight cities in Indonesia as shown in table 3 above. Although the difference in points between the three regions is actually thin, the main choice of export destination for home industry products (HIP) from the eight cities is still the second choice, namely the Middle East region. This means that home industry products in eight cities in Indonesia deserve to choose urban areas in the Middle East as their product export destinations, namely Saudi Arabia, Kuwait, Turkey, and Qatar. Furthermore, to further increase export activities to Middle Eastern countries, important steps that must be taken are to focus on prospective buyers, maintain the supply of product quantity, create good distribution channels, and streamline logistics costs, considering the character of consumers in the Middle East region who really like quality products. This commitment must be maintained properly by exporters from Indonesia. Another step that needs attention is ensuring product safety so that it is not easily damaged, for that the provision of cold storage facilities is very important, especially for products that are easily damaged. It is now clear that in the future products exported to Middle Eastern countries must pay attention to all the provisions and regulations that apply to Indonesian products, so that the added value of Indonesian export products remains superior to other countries.

ACKNOWLEDGMENT

To all parties involved in this research activity, the research team would like to thank all the contributions that have been given.

REFERENCES


Selection of Export Destination Countries for Home Industry Products Using Multiple Linear Regression Dummy Many Criteria
I Putu Artaya¹, I Gede Arimbawa¹, Achmad Muchayan²


