Evaluating the Trend of Trade between the Same Categories in the Human Development Index (HDI)

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Abstract

The first report of the human development index was at 1990, it is an important tool to evaluate the progress in the countries by GDP growth and social issues. Is the classification of HDII enough to explain the international relation between the categories of the countries that belongs to the same level of HDI? Giving evidences to grow the trend of trade between the nearest GDP countries, it is a formula of HDI and trade, the paper divided into three sections, First: The distribution of the human development index in the global and the areas that appeared; Second: Evaluate the distribution of the human development index in the top ten world; Third: Export between the top 10 HDI countries. Is really the full assessment of human development need a much broader set of indicators than the HDI alone? Can add the export rate to discuss the impact on the economic growth and the increasing on the income at the top ten countries at HDI? (Ranis, Stewart, & Samman, 2006).

Keywords: Human development, GDP growth, export

1. Introduction

1.1 Introduction to Problem

The problem is important as when you look at the equality of sustainable development in the sustainable development of the world, and our paper related to previous work as the index reflect a variety of countries in the world, a variety of values within the world, a variety of different countries of the world. A primary hypothesis is the relation between the high index and high trade between the top ten countries, the second hypothesis is there was a relation between the ability to gain from trade without linking with the top HDII. The design of the hypothesis related to the each other by the intermediate of HDII index. The practical implication of the study is the figures and statistics of the trade and HDII.

1.2 The Importance of the Problem

The problem reflects the HDII as an indicator according to the level of well-being and the efforts exerted. The analysis deals with the Human Development Report 2021 to reflect analytical data for eighty countries which were supported in it (India times’ website).

1.3 The Previous Literature

The theoretical justification for focus on the human development (HD) is that if the levels of human development is high that will led to an improving on the level of quality for human capital, which can directly led to another improving in individual lifetime productivity, that will be a main contribution in promoting both of the human condition and fostering economic growth (Gani, 2019).

The human development (HD) is “multidimensional” then we refer to the multidimensional in the effect of income and health care and education on the HD dimension, that were the multiple dimensions of HDI. This vision develops an account of dimensions of human development and exporting (Alkire, 2002).

Evidence over time has a strong relation between exporting in the developed countries and increases the income that led to an economic growth, top ten countries those with good HD, where choice is necessary human development should be given priority for exporting. As part of the globalization process, the export is very important and effect on the human development, that effect on the structural change and income growth process. Trade is a main part of the economic development process (Ranis, Stewart, & Ramirez, 2000).
1.4 Hypotheses

A primary hypothesis is the relation between the high index and high trade between the top ten countries; the second hypothesis is there was a relation between the ability to gain from trade without linking with the top HDII. The design of the hypothesis related to the each other by the intermediate of HDII index.

2. Method

In practice, income data are commonly collected by top ten countries in HDI. As is well known, the mean and distribution of these data will be different, and the values employed in distinct exporting and income data will be different too. This is a challenge for comparative analyses.

2.1 Sampling Procedures

First: The distribution of the human development index in the global and the areas that appeared.

The HDI is a function of some chosen specific statistics in the top ten countries it is consists of four elements as the following (Lind, 2019):

2.2 Research Design

\[ HDI = f(L, G, S, M) \]

where,

L refers to life expectancy at birth;

G refers to Gross National Income per person (purchasing-power parity);

S refers to expected years of schooling;

M refers to mean years of schooling.

The Human Development Report includes accurate data on the human development index at the world level, and we note that there are a group of the ten largest countries that top the list, which we can arrange through the following presentation:

First, Norway, through an index of 0.957, and second and third, Ireland and Switzerland in the same level, with an index value of 0.955, fourth and fifth, china and Iceland at the same level, with a value of 0.949, sixth, Germany, with a value close to the previous arrangement, 0.947, seventh Sweden, which represents a value of 0.945–eighth and ninth: Australia and Netherlands at the same level, which also represent a similar value of 0.944, Tenth, the Denmark, which represents 0.940.

Table 1. The list of the top ten countries in the world

| COUNTRY    | HDI   |
|------------|-------|
| Norway     | 0.957 |
| Ireland    | 0.955 |
| Switzerland| 0.955 |
| china      | 0.949 |
| Iceland    | 0.949 |
| Germany    | 0.947 |
| Sweden     | 0.945 |
| Australia  | 0.944 |
| Netherlands| 0.944 |
| Denmark    | 0.94  |

Source: Human Development Index (HDI), 2021, United Nation.

Figure 1. The list of the top ten countries in the world

Source: Human Development Index (HDI), 2021, United Nation.
We note from the previous graph the convergence of the human development index due to the competition of developed countries in maintaining a high index of human development and competition with other countries about the distinguished position within the first ten centers in the world, which reflects the importance of the human development index in reflecting sustainable development through attention to income and education. And health at the international level. In addition to referring to the ingenuity of Norway, which tops the list of countries distinctly, while the convergence comes in the later ranks, as it is concerned with human development in a way that is difficult to compete with, as it is the only one with an index of 0.953, which exceeds 0.95 without a competitor.

There are many areas that the report shows through the human development index by relying on income represented by the gross domestic product and health through the average age within each country, as well as education, which is measured by relying on the expected years of schooling and the average years of schooling within each country, which in the end is what it constitutes the human development index for all countries of the world (Human Development Reports, 2021).

**Second: Evaluate the distribution of the human development index in the top ten countries.**

The distribution of the human development index in the top ten countries is determined by identifying the main characteristics of the unified top ten countries in the same group and explaining the emergence of some differences between the group of countries and some of them, which is carried out through the following analysis:

| country     | Life expectancy at birth (years) | Expected Years of Schooling | Mean Years of Schooling | Gross national income (GNI) per capita | HDI value |
|-------------|----------------------------------|-----------------------------|-------------------------|----------------------------------------|-----------|
| Norway      | 82.4                             | 18.1                        | 12.9                    | 66.4                                   | 0.957     |
| Ireland     | 82.3                             | 18.7                        | 12.7                    | 68.3                                   | 0.955     |
| Switzerland | 83.8                             | 16.3                        | 13.4                    | 69.3                                   | 0.955     |
| China       | 84.9                             | 16.9                        | 12.3                    | 62.9                                   | 0.949     |
| Iceland     | 83.0                             | 19.1                        | 12.8                    | 54.6                                   | 0.949     |
| Germany     | 81.3                             | 17.0                        | 14.2                    | 55.3                                   | 0.947     |
| Sweden      | 82.8                             | 19.5                        | 12.5                    | 54.5                                   | 0.945     |
| Australia   | 83.4                             | 22.0                        | 12.7                    | 48.0                                   | 0.944     |
| Netherlands | 82.3                             | 18.5                        | 12.4                    | 57.7                                   | 0.944     |
| Denmark     | 80.9                             | 18.9                        | 12.6                    | 58.6                                   | 0.94      |

![Figure 2. Life expectancy at birth (years) in the top ten countries](image)

![Figure 3. Expected years of schooling in the top ten countries](image)
Third: Trade between the top 10 HDI countries.

Export versus income as a main question for HDI is whether to use export to enhance a part of income components for developed countries income or export or some related measure such education or health care as the variables whose inequality best represents relevant inequality in the level of living standards in the rich countries. A related question is how to include export as a variable that effect on the human development in the top ten countries.

For example, if the export is the preferred variable in the case of collecting income data, should export data be converted into income if there is a relation between them for the ten countries which be included? (Alkire & Foster, 2010).

Table 3. HDI/Net exports

| COUNTRY    | HDI  | Net exports(Million$) | Rank( net export arrangement) | HDI/Net exports | Rank( HDI/net export arrangement) |
|------------|------|-----------------------|-------------------------------|-----------------|-----------------------------------|
| Norway     | 0.957| 78.7                  | 9                             | 38.2            | 1                                 |
| Ireland    | 0.955| 85.8                  | 8                             | 34.9            | 2                                 |
| Switzerland| 0.955| 286.3                 | 4                             | 10.5            | 6                                 |
| China      | 0.949| 570                   | 3                             | 5.2             | 7                                 |
| Iceland    | 0.949| 7                     | 10                            | 2.5             | 10                                |
| Germany    | 0.947| 1170                  | 1                             | 2.54            | 9                                 |
| Sweden     | 0.945| 148.9                 | 6                             | 19.9            | 4                                 |
| Australia  | 0.944| 195                   | 5                             | 15.2            | 5                                 |
| Netherlands| 0.944| 576                   | 2                             | 5.1             | 8                                 |
| Denmark    | 0.944| 99.3                  | 7                             | 29.7            | 3                                 |

Source: Exports (2021), FOB to partner countries, International Monetary Fund, Washington.
From the chart, Germany had the highest rate of the exports, so we recommend to work on develop its human development rate to be suitable for its success at trading (high exports), on the other hand Norway although it had the top ten at the human development index it shout work hard on its exports value as it is at the ninth rank, for Iceland it had a long way to work on its exports that is only one million dollar, but really appreciate its progress in the human development, for china it is a good work to balance between its position in the human development index and its exports.

Development index = \( \sqrt{\text{life expectancy index} + \text{education index} + \text{income index}} \)

\( S = \frac{\text{human Development index (HDI)/net export}}{} \)

Where \( S \) is the level of strong in human development index.

### Table 4. Exports exchange between the top 10 HDI countries

| COUNTRY | Norway | Ireland | Switzerland | China | Iceland | Germany | Sweden | Australia | Netherlands | Denmark |
|---------|--------|---------|-------------|-------|---------|---------|--------|-----------|-------------|---------|
| Norway  | 575.8  | 366.9   | 6420        | 475.9 | 9630    | 8170    | 225    | 8180      | 3480        |         |
| Ireland | 335.2  | 3680    | 11340       | 50.49 | 19920   | 886.7   | 1010   | 9760      | 670         |         |
| Switzerland | 652.3 | 1350    | 17430       | 65.9  | 48940   | 1730    | 2310   | 6650      | 1200        |         |
| China   | 3530   | 4000    | 5090        | 100.8 | 86820   | 8370    | 53480  | 79010     | 7470        |         |
| Iceland | 191.24 | 16.24   | 15.44       | 90.22 | 250.27  | 31.22   | 13.61  | 925.6     | 126         |         |
| Germany | 9860   | 8750    | 66150       | 110340| 489.3   | 26700   | 66600  | 89080     | 21100       |         |
| Sweden  | 16990  | 516.6   | 1800        | 7540  | 359.3   | 146300  | 1760   | 8340      | 11070       |         |
| Australia| 100.9  | 82.6    | 1760        | 100090| 37.6    | 2050    | 223    | 1760      | 79.9        |         |
| Netherlands | 5360 | 5430    | 8750        | 16120 | 733.12  | 121520  | 10640  | 3510      | 7460        |         |
| Denmark | 6160   | 638.6   | 945.1       | 4330  | 545     | 13540   | 9340   | 853.8     | 6190        |         |

### Table 5. Total Exports exchange between the top 10 HDI countries

| COUNTRY | Total Export between them | HDI/export for each country*total exports |
|---------|---------------------------|-----------------------------------------|
| Norway  | 37523.6                   | 33.6                                    |
| Ireland | 47652.4                   | 26.4                                    |
| Switzerland | 80328.2  | 15.66                                  |
| China   | 247871                    | 5.04                                    |
| Iceland | 1659.84                   | 753.2                                   |
| Germany | 399069                    | 3.12                                    |
| Sweden  | 212676                    | 5.85                                    |
| Australia| 106184                   | 11.71                                   |
| Netherlands | 179523 | 6.92                                    |
| Denmark | 42542.5                   | 29.11                                   |
| total   | 1317506                   |                                         |
The table will describe the total exports between the top ten countries as the following:

R=Human Development index (HDI)/exports for each country*total exports between the top 10 countries

Where R is the level of HDI for exports for each country to total export between the top 10 countries;

HDI/export for each country*total exports for Germany was the lowest as there was a gap between its HDI and its high exports with top 10 countries, and the highest was at Iceland as it has a lowest export.

The total exports between the top ten countries can be divided into two main categories:

A: countries with export more than 100 billion

The relation between the top ten countries was very strong as the exports between them was high value, but when we discuss the highest exports that exceeded 100 billion, we will find top five countries, the first one was Germany with a high rank of 399 billion dollar, then China with 247 billion dollar, then Sweden 2121 billion dollar, Netherland with 179 billion dollar, at last Australia with the lowest value 106 billion dollar.

B: countries with export less than 100 billion

Then the second categories with the exports less than 100 billion dollar, at the top Switzerland 80 billion dollar, then the deep decreasing about half was at Ireland with 47 billion dollar, then Norway 37 billion dollar, Denmark at 42 billion dollar, at last was Iceland 1 billion dollar.

Can we recommend Switzerland to increase its exports with that top ten countries to be classified with countries exceeded 100 billion at was so closed to that, and setting it at the second categories (less than 100 billion cannot be suitable for its position as there were a deeply different and higher in its value (80 billion dollar where the other four countries (Norway37 billion –Ireland47 billion –Iceland 1 billion- Denmark42 billion). At the other side Iceland it has to spend much effort in exports to increase the total export with the top ten countries because in the absence of effective exporting plan for the future, there will be a great challenge of leaving the second category as it has the lowest exporting value, it is only one billion dollar.

The Human Development Index (HDI) implicitly reflected in the “human development” and the top ten countries accordingly had a high ranks and high export rate. To give evidence for the relation between the exports and high rank of HDI by the increasing in the income, in the light of the HDI’s meaning of “human development,” the paper examines the sensitivity relation between the high rank of HDI to changes in its components, namely social indicators of education, longevity and standard of living. The HDI is next compared with two alternatives, the Life exports between them and It is concluded that the export’s weighting of the top ten countries and the human development, The HDI ranking of highly developed nations is so to its high rate of exporting (Lind, 2004).

3. Conclusion

There were some countries can balance between its progress in HDI and the effort in supporting the export to enhance the income, it will be clear at the rank in the table for Iceland and Australia with the same rank with that balance, but for some other countries it is difficult like Germany it was the top in exports but the ninth in the percentages of HDI/net export so there was a recommendation here to increase its HDI which was at the ninth as its income (GNI) per capita only 55.3 then the unbalance at Ireland and Netherlands with high scale. At the opposite was Norway, it was the first at HDI but the ninth at the net export, so it should try to increase its exports between the top 10 countries. But for Iceland the tenth at both HDI and exports, also Australia has the same at fifth for both HDI and Exports (Table3. HDI/Net exports).

HDI/export for each country*total exports for Germany was the lowest as there was a gap between its HDI and its high exports with top 10 countries, and the highest was at Iceland as it has a lowest export (Table 4. Exports exchange between the top 10 HDI countries).

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