

## Conference Paper

# The Difference of Human Development Index of Fisherman in Pangkalpinang City and Bangka District (A Case Study on Bangka Belitung Islands Province) Human Resources

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## Abstract

Many research in Indonesia are conducted to look at the poverty of fishermen such as Retnowati (2011), Tian (2011) and Humaedi (2012), but there is no research about poverty comparison of human development index of fisherman between cities and districts. Pangkalpinang City and Bangka District in Bangka Belitung Islands Province. The purpose of this research is to identify differences in the human development index of fisherman in both areas. The method of analysis used is qualitative and quantitative descriptive. The step of analyzing is formulated on the basis of studies of various published documents, collecting primary data from the field, processing and summarization of raw data into various levels using Calculating HDI and SWOT analysis. The components of the human development index of fisherman that were calculated are health dimensions, education dimensions and expenditure dimensions. The final result of the calculation of human development index of fisherman in Pangkalpinang and Bangka is 67.79 and 50.47 percent. Furthermore, this research will be developing human development index of all fishermen in Bangka Belitung Islands Province and see the character of household fisherman saving using the theory of overlapping generation model and the theory of life cycle.

**Keywords:** Fisherman, Human Development Index

## 1. Introduction

Indonesia is an archipelagic state, whose 70 percent territory is the ocean. In this ocean, the marine economic potential is huge and diverse, besides other fish resources. With the abundance of the fish resources, the income generated by a fisherman is sufficient to meet the needs of his life. In fact, poverty still plagues the life of fisherman. The catch of fishermen is still far from fulfilling to meet the needs of his life [3].

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There are three kinds of poverty of fishermen, namely, structural, cultural and natural poverty [1]. The human development index explains how people can access development outcomes in obtaining income, health, education and so forth.

The cause of poverty of the fishermen present along with the system social and cultural, especially behavior

that relates to social obligations and economic productivity. An important concern for the government in formulating and implementing national policies and programs of poverty alleviation should especially be the community of fishermen in Indonesia. One way is to conduct 'cultural management' inherently in the society and providing assistance to the government and institution that can reduce poverty (Humaedi, 2012).

The human development index was introduced by the United Nations Development Program (UNDP) in 1990 and published periodically in the annual Human Development Report (HDR) report. The human development index is an indicator used to view developments over the long term. Human developmental progress is seen through the speed and status of achievement. The human development index in the Bangka Belitung Islands Province continues to improve over the period of 2010 to 2016. The human development index of the Bangka Belitung Islands Province increased from 66.02 in 2010 to 69.55 in 2016. During that period, the human development index of Bangka Islands Province Belitung average grew by 0.87 percent per year. In 2015–2016, the human development index of Bangka Belitung Islands Province grew by 0.72 percent. Growth in the period is lower than that in 2014–2015, as it only grew 0.52 percent. These figures have not risen to the status of human development in the Province of Bangka Belitung Islands, which is still relatively stagnant, and into the middle category, equal to the position in 2010 (BPS BABEL, 2017).



**Figure 1:** Human Development Index of Bangka Belitung Islands Province. Source: BPS BABEL, 2017.

## 2. Objectives

This research on fishermen in Pangkalpinang City and Bangka District aims to:

1. study the differences of human development index of fishermen in Pangkalpinang City and Bangka District and
2. analyze the SWOT of the human development index of fishermen in both the regions.

## 3. Research Methodology

### 3.1. Types and sources of data

The types of data used in this research are primary data. Primary data were collected through a survey of the field. In revealing the differences of human development index, the study involves the discussions with the fishermen in Pangkalpinang City and Bangka District. The number of respondents are 118 people, with composition of 59 in Pangkalpinang City (especially in Kelurahan Temberan, Air Itam and Sinar Bulan) and 59 in Bangka District (especially in Lingkungan Nelayan II).

### 3.2. Analysis methodology

The method of analysis used is qualitative and quantitative descriptive. The steps of analyzation is formulated on the basis of studies of various published documents, collecting primary data from the field, processing and summarization of raw data into various levels using Calculating HDI and SWOT analysis. SWOT analysis identify the strengths, weaknesses, opportunities and threats of human development index in both the areas.

## 4. A Profile of the Study Area

### 4.1. The fisherman of Pangkalpinang city

The subjects of research of fishermen in Pangkalpinang City are fishermen in three *Kelurahans* (villages) of Air Itam, Temberan dan Sinar Bulan. Most of the fishermen in these three *Kelurahans* have their own traditional ship. Their daily fish catches ranges from 20–50 kg with a catch distance of more than 12 miles from land, while squid and

shrimp catches of 20–30 kg can be caught with a catch distance of about 5 miles from the ground. The fishermen in the village have a difference when compared between the fishermen catching fishes, which is about 60 percent and the fishermen catching squid and shrimps which is 40 percent, so it can be concluded that the majority of fishermen in the village are fishing fishermen using traditional vessels.

## 4.2. The fisherman of Bangka district

The population with the largest fishermen profession in Bangka is in the Lingkungan Nelayan I and the Lingkungan Nelayan II, but in terms of environmental development, Lingkungan Nelayan I is more advanced than Lingkungan Nelayan II. Hence, in this research, the focused area is Lingkungan Nelayan II. Fisherman in this area mostly use traditional vessels. The weekly catch ranges from 500 kg to 1 ton with catch distance of 12 miles from the ground, while the catch of squid is almost as much as 1 ton. The comparison between fishermen catching fishes is around 70 percent, while the fishermen catching squid and shrimps are only in the range of 30 percent, so it can be concluded that the majority of fishermen in the village are fishermen catching fishes using traditional boat.

## 5. Research Methodology

### 5.1. Health dimensions

The health dimension is a life expectancy at birth that represents the dimensions of longevity and healthy life that increases from year to year. The data used in this study are proxies of the life expectancy of Pangkalpinang City and Bangka District.

$$l_{\text{health}} = \frac{\text{LEB} - \text{LEB}_{\text{min}}}{\text{LEB}_{\text{maks}} - \text{LEB}_{\text{min}}} \quad (1)$$

### 5.2. Education dimensions

The dimensions of knowledge on the human development index are shaped by indicators of school's long-term expectations and school's long-term average.

$$\text{ISLTE} = \frac{\text{SLTE} - \text{SLTE}_{\text{min}}}{\text{SLTE}_{\text{maks}} - \text{SLTE}_{\text{min}}} \quad (2)$$

$$\text{ISLTA} = \frac{\text{SLTA} - \text{SLTA}_{\text{min}}}{\text{SLTA}_{\text{maks}} - \text{SLTA}_{\text{min}}} \quad (3)$$

$$ledu = \frac{ISLTE - ISLTA}{2} \quad (4)$$

### 5.3. Expenditure dimensions

Dimensions that represent the quality of human life is a decent living standard that is presented by per capita expenditure.

$$lexpenditure = \frac{\ln(\text{expenditure}) - \ln(\text{expenditure}_{\min})}{\ln(\text{expenditure}_{\max}) - \ln(\text{expenditure}_{\min})} \quad (5)$$

### 5.4. Calculating HDI

HDI is calculated as the geometric mean of the health, education and expenditure index.

$$HDI = \sqrt[3]{l_{\text{helath}} \times ledu \times lexpenditure} \times 100 \quad (6)$$

## 6. HDI of Pangkalpinang Fisherman and Bangka Fisherman

The achievements of human development in a region at a certain time can be grouped into four groups. This grouping aims to organize regions become the same groups in terms of development human.

1. Group 'very high':  $IPM \geq 80$
2. 'High' group:  $70 \leq HDI < 80$
3. The 'moderate' group:  $60 \leq HDI < 70$
4. 'Low' group:  $HDI < 60$

### 6.1. HDI of Pangkalpinang fisherman

The development index of fishermen in Pangkalpinang City is categorized as moderate with index value 67.79.

TABLE 1: PBI.

ILEB	ISLTE	ISLTA	IExpenditure	HDI
80.87	6	6.25	311.607	67.79

## 6.2. HDI of Bangka fisherman

The development index of fishermen in Bangka District is categorized as low with index value 50.47.

TABLE 2: HDI of Bangka Fisherman.

ILEB	ISLTE	ISLTA	IExpenditure	HDI
77.72	6	5.8	128.557	50.47

## 7. SWOT Analysis

### 7.1. SWOT of human development index of fisherman in Pangkalpinang city

<b>Strength</b> The community has been creative so that income is obtained not only relying on the fish catch but it can process fish into other value-added materials	<b>Weakness</b> – Limited data
<b>Opportunity</b> Training should be Although the human provided to fisherman development index of because they will accept fisherman in change. Pangkalpinang City is better	<b>Threat</b> Although the human development index of fisherman in Pangkalpinang City is better than Bangka District, they don't yet have an awareness to higher school

### 7.2. SWOT of human development index of fisherman in Bangka district

## 8. Conclutions and Recomendations

<b>Strength</b> Fishermen who choose to be fishermen for generations will not change the profession simply because of the number and the catch is not stabilized	<b>Weakness</b> <ul style="list-style-type: none"> <li>– Limited data</li> <li>– Openness</li> </ul>
<b>Opportunity</b> Fishing organizations are urgently needed in this area to improve the human development index, e.g., in the form of sharing the skills of other fishermen.	<b>Threat</b> Fluctuating income and lack of assistance from local government will cause the loss of public confidence in the government of Bangka District and do not rule out will cause the profession of fishermen to be reduced because of limited sources of aid, making fishermen unable to think of other fish processed alternatives.

## 8.1. Conclutions

The index of human development of fishermen in Pangkalpinang City is better than Bangka Regency, but there is still a need of an improvement, especially in education dimensions.

## 8.2. Recommendations

1. Additional research needs to be done by taking samples of all fishermen in Bangka Belitung Islands Province.
2. It is necessary to conduct research on human development index by sector in Bangka Belitung Islands Province.

Furthermore, this research will be developing human development index of all fishermen in Bangka Belitung Islands Province and see the character of household fisherman saving using the theory of overlapping generation model and the theory of life cycle.

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