# Analysis of Factors Affecting the Quality of Life of Coastal Fishers in Pahlawan Village, Tanjung Tiram District, Batu Bara Regency

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***Abstract:*** *Quality of life is often associated with welfare; one of the reasons is the emergence of awareness that development is not sufficiently measured by building many inputs but the most important is the outcome, and the quality of life is one of the benchmarks. The direction of development is not only on increasing quantity but also on quality. The resources that support the development include natural resources, human resources, science, and technology. In development, it is necessary to include development with the environment because the environment functions as a driver of sustainable development. If development continues not to pay attention to environmental factors, the environment will be damaged, and sustainable development itself will be threatened. Achievement of human development at the district level is quite varied. Fishers living in coastal areas are below the poverty line. So far, it has become the most marginalized group. The management and utilization of the potential of marine and coastal resources are always in tandem with the destruction of the environment and habitat, and almost all coastal ecosystems are threatened with sustainability. The pressure on coastal resources is often exacerbated by the high poverty rate in the region. Poverty often triggers a vicious circle. Poor people are often the cause of damage to the coastal environment. However, it is the sparse population who will bear the effects of environmental damage. With these conditions, it is not surprising that destructive fishing practices are still standard in coastal areas.*

***Keywords****: Quality of life, income, environment, health, social support, poverty, fishers.*

## 1.  INTRODUCTION:

In development, it is necessary to include development with the environment because the environment functions as a driver of sustainable development [1]. If development continues not to pay attention to environmental factors, the environment will be damaged, and sustainable development itself will be threatened [2]. The low level of welfare of the local community can be seen from the condition of houses that are less suitable to be inhabited by many family members, dirty environment, lack of clean water facilities, no bathrooms, many local youths who are exposed to drugs, many dropouts, etc. Development that is oriented towards meeting human needs through the use of natural resources wisely, efficiently, and paying attention to utilization for both present and future generations [3]–[5]. Life pressures faced by the Heroes' Village community starting from the deterrence of capture results led to the creation of income that they could not expect, the involvement of fishing technology, marketing networks that were considered detrimental to the fishers and the unequal profit sharing system resulted in the lowest level of traditional fishers and laborers. Low income and a large number of dependents further aggravate their living conditions. The things that happened in the village can be seen through the situation of settlements, poor sanitation, garbage around the residence, teenagers and children who go out to sea, so they drop out of school. Marriage in adolescence results in a short divorce. Many teenagers who use drugs and so on are conditions that affect the level of quality of life of the community.

## 2.  THEORIES:

### 2.1 Quality of life

Quality of life is multidimensional, which cannot be directly measured but can only be displayed in a single component [6]. Quality of life includes how individuals perceive goodness from several aspects of their lives. Quality of life in maintaining a broader individual is an essential factor in ensuring that the person can live well with care and support until the arrival of death [7]. The quality of life is a broad concept covering how individuals measure the goodness of several aspects of life which includes the individual's emotional reactions to life events, dispositions, life satisfaction, satisfaction with work and personal relationships [8]. Based on several definitions above, it can be concluded that quality of life is an individual's perception of the physical, social, and emotional health that he has. It is related to the physical and emotional state of the individual in his ability to carry out daily activities that are supported by facilities and infrastructure in the surrounding environment.
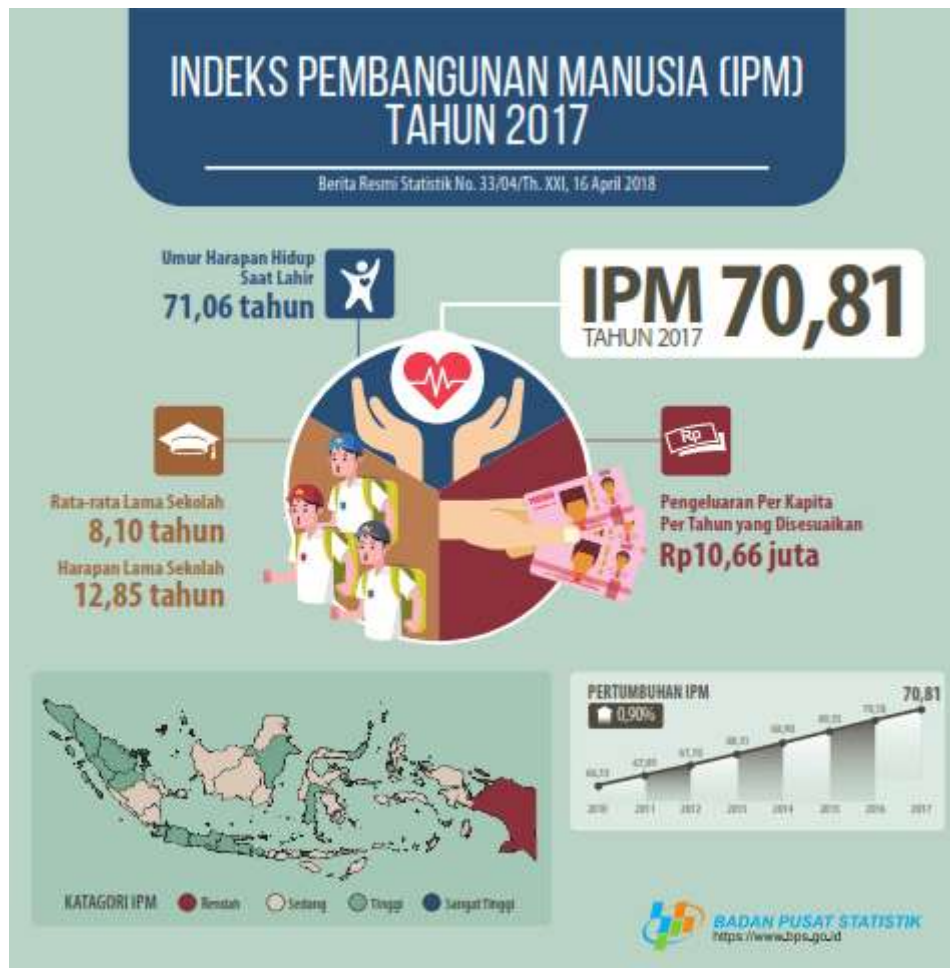
**Figure 1.** Indonesia's Human Development Index in 2017

Figure 1 explains that human development in Indonesia continues to progress. In 2017, Indonesia's Human Development Index (HDI) reached 70.81. This figure increased by 0.63 points or grew by 0.90 percent compared to 2016. Babies born in 2017 have hopes to live up to 71.06 years, 0.16 years longer than those born the previous year. Children who are seven years old in 2017 have hopes of enjoying 12.85 years of education (Diploma I), 0.13 years longer than those of the same age in 2016. Meanwhile, residents aged 25 years and over are on average they have studied for 8.10 years (class IX), 0.15 years longer than the previous year. In 2017, the Indonesian people met their needs with an average per capita expenditure of 10.66 million rupiahs per year, an increase of 244 thousand rupiahs compared to the previous year's expenditure [9].

### 2.2 Factors Affecting Quality of Life

Increased fishing populations have an impact on various aspects of life, both social, economic, and especially health. At present, there are various physical, cognitive, and psychological changes [10][11][12]. Life expectancy and quality of life are significant for fishers. Many factors affect the quality of life of the elderly, including:
- Age
- Income
- Education
- Health
- Housing
- Environment
- Social Support
- Employment Opportunity

## 3.    METHODOLOGY:

### 3.1 Research Materials

This research was conducted to analyze and find out which factors (income, education, health, housing, social stability environment, and employment opportunities) were relevant in influencing the quality of life of coastal fishers in Pahlawan Village, Tanjung Tiram District. Moreover, to analyze and find out what factors This has a significant effect on the quality of life of coastal fishers in Pahlawan Village, Tanjung Tiram District.

### 3.2 Framework for Thinking and Conceptual Concepts

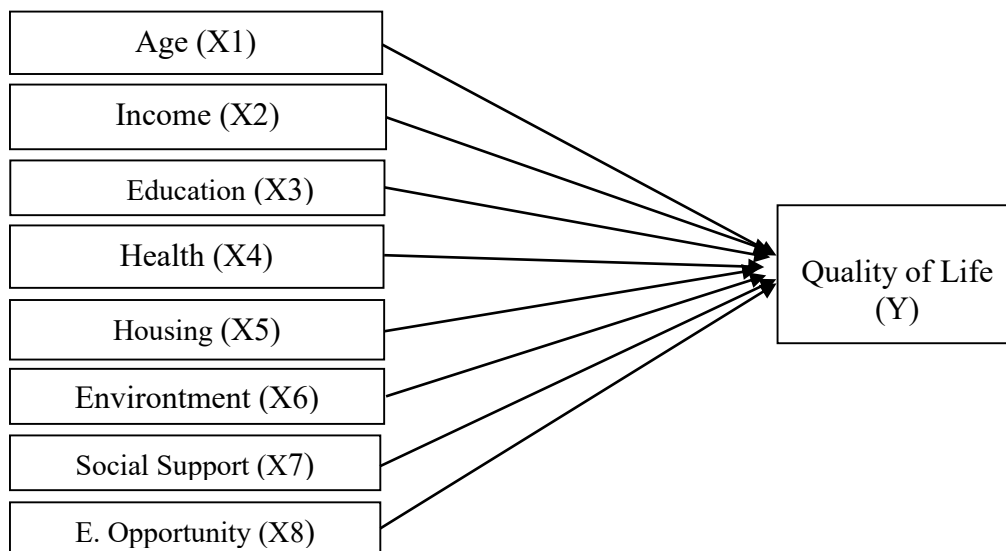The research concept can be seen in the following picture:



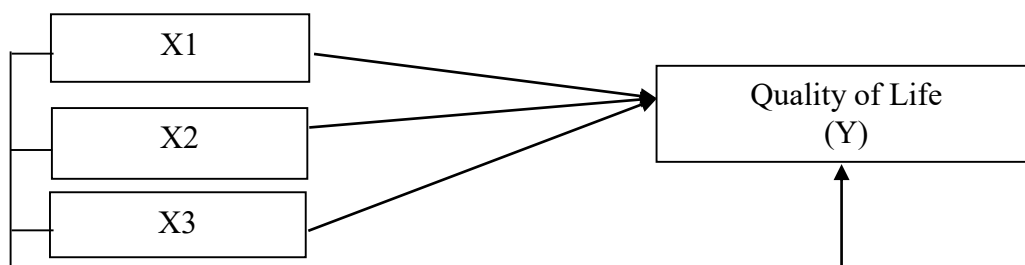**Figure 2.** CFA Conceptual Framework (Confirmatory Factor Analysis)



**Figure 3.** Conceptual Framework after the CFA Test

### 3.3. Parameters observed

The parameters observed are the environmental pollution that will be examined are water pollution, air pollution, and soil pollution. Whereas the social factors that will be seen are quality of life, social relations, education level, social position. While economic factors include access to capital, business, and technology, income, and expenditure.

### 3.4. Place and time of research

The research was conducted in Pahlawan Village, Tanjung Tiram District, Batu Bara Regency. The time of the study is from March 2018 to July 2018.

### 3.5. Data collection technique

Primary data collection is done by distributing questionnaires to respondents using interviews and direct observation to Pahlawan Village, Tanjung Tiram District. Secondary data collection was carried out to find related data needed by looking at the documents in the Batu Bara District BPS as well as documents in the head office of Pahlawan Village, Tanjung Tiram District.

## 3.6. Population and Samples

The population is the generalization area or all objects/subjects that have certain qualities and characteristics set by the researcher to be studied and the conclusions drawn. In this study, the population is all family heads totaling 1,452 and village officials in Pahlawan Village, Tanjung Tiram District, Batu Bara District. The sample in this study used quota sampling as many as 66 respondents. With the sampling technique based on the criteria in Pahlawan Village, Tanjung Tiram District, Batu Bara Regency.

## 3.7. Data Analysis Method

In this study, the analytical method used was descriptive and quantitative analysis, namely confirmatory factor analysis (CFA), multiple linear regression

## 4. RESULT AND DISCUSSION

### 4.1 CFA Data Analysis Results

To analyze data from the research results that researchers have done and apply descriptive analysis techniques, namely by analyzing and grouping, then interpreted so that the actual picture of the problem being studied will be obtained. Furthermore, factor analysis is conducted, which aims to find a way of summarizing the information in the original variable (initial) into a new set of dimensions or variables (factors). Data processing uses the SPSS program, with the following results:

**Table 1.** KMO and Bartlett's Test

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .559 |
|---|---|---|
| Bartlett's Test of Sphericity | Approx. Chi-Square | 53.866 |
| | Df | 29 |
| | Sig. | .002 |

The method used in this factor analysis is the Main Component method. From the KMO and Bartlett's Test table, obtained the Kaiser Mayer Olkin (KMO) value of 0.547 can be seen that the value is more significant than 0.5. It means that this value indicates that the data is valid for further analysis by factor analysis. Bartlet test value is 53,965 with a significant value of 0.002 below 5%, then the correlation matrix formed is an identity matrix, or in other words, the factor model used is suitable. Furthermore, to see which variables have communalities correlation values above or below 0.5 or above 50% can be seen in the following communities table.

**Tabel 2.** Communalities

| | Initial | Extraction |
|---|---|---|
| Age | 1.000 | .465 |
| Income | 1.000 | .733 |
| Education | 1.000 | .547 |
| Health | 1.000 | .578 |
| Housing | 1.000 | .567 |
| Environment | 1.000 | .474 |
| Social Support | 1.000 | .762 |
| Employment Opportunity | 1.000 | .567 |

Extraction Method: Principal Component Analysis

The results of the data analysis show that the higher the communalities of a variable, the more closely related to the factors formed. The communalities table shows that the results of individual extractions have six variables that have contributions that exceed 0.5 or 50%, namely income, education, health, housing, social support, and employment while the age and environmental variables have extraction values below 0.5 or 50%. However, further feasibility must be tested with variance Explained.

**Tabel 3.** Total Variance Explained

|   | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|---|-------|---------------|--------------|-------|---------------|--------------|-------|---------------|--------------|
|   | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 1.881 | 23.513 | 23.513 | 1.881 | 23.513 | 23.513 | 1.597 | 19.966 | 19.966 |
| 2 | 1.520 | 18.998 | 42.511 | 1.520 | 18.998 | 42.511 | 1.582 | 19.775 | 39.741 |
| 3 | 1.208 | 15.104 | 57.615 | 1.208 | 15.104 | 57.615 | 1.430 | 17.874 | 57.615 |
| 4 | .976 | 12.202 | 69.817 |  |  |  |  |  |  |
| 5 | .766 | 9.579 | 79.396 |  |  |  |  |  |  |
| 6 | .653 | 8.164 | 87.560 |  |  |  |  |  |  |
| 7 | .533 | 6.657 | 94.217 |  |  |  |  |  |  |
| 8 | .463 | 5.783 | 100.000 |  |  |  |  |  |  |

Extraction Method: Principal Component Analysis

**Tabel 4.** Component Matrix[a]

|  | Component | | |
|---|---|---|---|
|  | 1 | 2 | 3 |
| Age | .355 | .307 | .488 |
| Income | -.512 | .488 | -.461 |
| Education | .574 | .458 | .085 |
| Health | .677 | -.184 | -.304 |
| Housing | -.592 | -.057 | .454 |
| Environment | -.387 | .411 | .419 |
| Social Support | .368 | .775 | .088 |
| Employment Opportunity | -.295 | .435 | -.526 |

Extraction Method: Principal Component Analysis

The next process is the factor rotation or rotation of the factors formed. The purpose of rotation is to clarify the variables that enter into certain factors.

**Tabel 5.** Rotated Component Matrix[a]

|  | Component | | |
|---|---|---|---|
|  | **1** | **2** | **3** |
| Age | .575 | .129 | -.311 |
| Income | -.044 | .207 | .823 |
| Education | .687 | -.252 | -.044 |
| Health | .123 | -.730 | -.173 |
| Housing | -.227 | .707 | -.101 |
| Environment | .239 | .653 | .103 |
| Social Support | .818 | -.002 | .230 |
| Employment Opportunity | .020 | -.016 | .741 |
| Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. | | | |

### 4.2 CFA Analysis Results

The analysis of CFA results shows that from the KMO and Bartlett's Test table, the Kaiser Mayer Olkin (KMO) value of 0.559 is obtained where the value is more significant than 0.5. This value indicates that the data is valid for further analysis by factor analysis. Bartlet test value is 53,866 with a significant value of 0.002 below 5%, then the correlation matrix formed is an identity matrix, or in other words, the factor model used is excellent. Furthermore, to see which variables have communalities correlation values above or below 0.5 or above 50% can be seen in the communalities table showing the results of individual extraction there are six variables that have contributions that exceed 0.5 or 50%, namely income, education , health, housing, social support and employment while the age and environmental variables have extraction values below 0.5 or 50%. However, further feasibility must be tested with variance Explained. The results of the total variance explained in the initial Eigenvalues table; it is known that there are only three components of the variable which influence the quality of life of coastal fishers. Eigenvalues show the relative importance of each factor in calculating variance to the eight variables analyzed. From the table above it can be seen that there are only three factors formed. The three factors have a total value of eigenvalues above 1, that is, 1,881 for factor 1, 1,520 for factor 2, and 1,208 for factor 3 So the factoring process stop at three factors that will participate in the next analysis.

### 4.3 Analysis of the Results of Multiple Linear Regression

#### Effect of Income on the Quality of Life of Coastal Fishers

The Pearson correlation results show the relationship of income with quality of life of 0.559 is at the level of moderate relationship. The results of multiple linear regression show that income has a significant positive effect on the quality of life where the priority is to support the development of alternative sources of income or processing of fishery products and catch results is in Heroes Village. The income received by fishing communities is used to meet all the needs of consumers in each of their households. For example, to buy household supplies, paying for water, paying monthly electricity, paying interest on loans or other debts, buying fishing facilities and infrastructure, costs to go fishing ( such as gasoline for those who have machines, ice, cigarettes, etc.), to be used to finance their children's education. However, the income earned by fishers is not entirely derived from fishing results but can be obtained from the results of other economic activities as a side job to fill spare time. In addition, the role of wives and children is also needed to support work to increase the amount of income and government interference is also very important in overcoming the problem of increasing fishers's income, for example creating fishers work programs and at the same time providing assistance to fishers in the form of boats, machinery and rafts.

The fishing community has a different lifestyle compared to urban communities. It is indicated by limited access to production, limited capital, lack of facilities in terms of fishing and is influenced by socio-cultural factors and traditions that have been passed down from generation to generation. The potential for fish farming in Pahlawan Village is quite a chance to be developed. Fish indicate the development of fisheries sector income in Heroes Village catches as well as the production value of the fishers's catches currently experiencing a decline due to declining fisheries production values, increasing operational costs and fishers's supplies for once fishing, especially since the fuel price increase. Fishers communities depend on the fisheries sector, where there is a lack of financial capacity for fishing communities to fulfill their basic needs. To overcome economic problems is certainly not as easy as thought but must be done with effort and hard work. However, what is meant by actions that lead to changes and improvements in economic conditions is by establishing a business and wanting to develop a business that has been built.

#### Effect of Housing on the Quality of Life of Coastal Fishers

The results of the Pearson correlation show that the relationship between housing and quality of life is 0.380, which is at a low level of relationship. Then the results of multiple linear regression show that housing has a positive and significant effect on the quality of life of coastal fishers where if housing in Pahlawan Village gets better. The quality of life increases significantly. So the results of the hypothesis test also show that the hypothesis is accepted, meaning that housing has a significant effect on the quality of life of fishers. Housing or settlements of coastal fishers are described as a settlement where the majority of the population are people who have jobs as fishers. The conditions of fishers's dwelling houses in Pahlawan Village are generally part of the fishing houses that are not habitable and do not meet the standards of healthy homes proclaimed by the government at present, especially fishing houses near the sea due to their lack of financial capacity to build healthy houses even though they own land for the construction of houses. When viewed from the condition of the structure of building construction, the fishing settlements in the environment tend to use non/semi-permanent construction structures. Also, the houses of fishing communities do not have large yards, so they appear irregular and chaotic. The development of sustainable quality of life is seen through the development of existing settlements or housing. The imbalance between population growth and income increases will

affect the quality of life of the community. Efforts to improve the quality of life of the community are increasingly severe if the population increases every year.

**Effect of Social Support on the Quality of Life of Coastal Fishers**

The results of the Pearson correlation indicate a relationship between social support and the quality of life of coastal fishers of 0.043 at a shallow level of relationship. Then the results of multiple linear regression show that social support has a negative effect but not significantly on the quality of life of fishers. Social support consists of social support from families, neighbors, and community institutions/government institutions. Local governments need to further strengthen the establishment of fishing cooperatives as a means to improve the capabilities and welfare of fishers, which is a driving force for a shift from fisheries management. Strengthening human resources for coastal fishers are expected to change the concept of exploitation arbitrarily towards a process that produces the ability and expertise to produce new (innovative) works. This optimization can be done by fishers if from upstream to downstream is supported by policies, budgets, and programs that favor the interests of fishers. This step can be carried out if it starts with data collection and registration of small fishers together in their respective regions. The support of the government and other parties is very much needed in Pahlawan Village because the main weakness of fishers is the problem of using technology, fishers do not own access to information about the points of the existence of fish, so the number of catches of fishers is always limited. The need for fishing communities has mastery of aspects of information in terms of weather and location. Usually, fishers only predict the weather from which sea breeze or moon can get the most fish.

**5. CONCLUSION:**

The analysis of CFA results shows that from the KMO and Bartlett's Test table, the Kaiser Mayer Olkin (KMO) value of 0.559 is obtained where the value is more significant than 0.5. This value indicates that the data is valid for further analysis by factor analysis. Bartlet test value is 53,866 with a significant value of 0.002 below 5%, then the correlation matrix formed is an identity matrix, or in other words, the factor model used is excellent. Furthermore, to see which variables have communalities correlation values above or below 0.5 or above 50% can be seen in the communalities table showing the results of individual extraction there are six variables that have contributions that exceed 0.5 or 50%, namely income, education , health, housing, social support and employment while the age and environmental variables have extraction values below 0.5 or 50%. However, further feasibility must be tested with variance Explained. The results of the total variance explained in the initial Eigenvalues table; it is known that there are only three components of the variable which influence the quality of life of coastal fishers. Eigenvalues show the relative importance of each factor in calculating variance to the eight variables analyzed. From the table above it can be seen that there are only three factors formed. Because the three factors have a total value of eigenvalues above 1, that is, 1,881 for factor 1, 1,520 for factor 2, and 1,208 for factor 3 So the factoring process stop at three factors that will participate in the subsequent analysis. Adjust R Square value of 0.368 or 36.8% means that the variation in the quality of life of coastal fishers can be explained by 36.8% by income, housing, and social support while the remaining 63.2% is influenced by other variables not included in the research model.

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