

# Structural Equation Modeling in the Environmental Economic Approach To Reduce Poverty Numbers Pahlawan Village Tanjung Tiram District

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**Abstract:** SEM analysis will be used to determine the best model of environmental economic approach in reducing poverty in Pahlawan Village, Tanjung Tiram District. In line with public awareness regarding the environment as a limited resource that belongs to everyone, the environmental economy is proposed as an approach that is more in line with the goal of environmental preservation for human welfare. The activities of the Pahlawan Village community in utilizing their limited natural resources and environment can be maintained both in terms of their function and use of natural resources (SDA) and the environment in the long term or in a sustainable manner. The method used in collecting data is a quantitative method that is supported by SEM with the help of AMOS 22 software. Based on the results of research, education, fishermen access, environmental management, health level, and income level of fishermen. The Education variable has a significant effect on the economic environment and reducing poverty, while on fishermen access it does not have a significant effect on the environmental economy or reducing poverty. At the level of health significantly influence the economic environment and reduce poverty. Environmental economics has an effect on poverty reduction, so the level of income of fishermen has a significant effect on the approach to environmental economics and on poverty reduction, because the  $P$  value  $< 0.05$ .

**Key Words:** Economic Environment, Poverty, Education, Access, Environmental Management, Income.

## 1. INTRODUCTION:

Associated environmental economy with poverty reduction is to prosper the lives of fishing communities related to environmental management. Efforts to manage the environmental economy that have been promoted through laws that have been issued have not been meaningless without the support of public awareness in order to improve the quality of the environment as well as the awareness that the existing environment is a deposit for future generations [1]. Annisa Ilmi Faried's research (2018) said that in order to overcome environmental pollution to socio-economic factors in reality, their social position remained marginal in the process of unequal and exploitative economic transactions so that as producers, fishermen did not get a large share of income [2]. Communities in Pahlawan Village are not much different from the general conditions of coastal communities in other regions, almost all people are still in poverty, with income from going to sea, they can only bring home Rp.30,000 up to Rp.50,000 /day. Imagine if you do not go to sea due to various other obstacles. Automatically the community seeks the needs of families by borrowing money from middlemen to meet the needs of family life with large interest loans. The condition of coastal communities in general is still far behind, both in terms of income, health and education levels. Efforts to remove coastal communities from poverty have long been carried out by the government with a variety of policies such as expansion of business fields, modernization of fishing gear, and capital assistance [3]–[5]. It's just that programs made by the government are more aid than empowering the people. In line with the community's awareness of the environment as a limited resource that belongs to everyone, the environmental economy is proposed as an approach that is more in line with the goals of environmental preservation for the welfare of the community.

## 2. LITERATURE REVIEW:

### Environmental Economics

Environmental economics is the study of human behavior and activities in utilizing Natural Resources (SDA) and their limited environment so that the functions or roles of natural resources and the environment can be sustained and their use can also be improved in the long term or sustainable (sutrisno 2014) [6]. The link between environmental economics and poverty reduction is to prosper the lives of the fishing communities of Tanjung Tiram District, Batu Bara District. Environmental economics is also related to management. environment is a science that discusses the behavior or activities of humans themselves in utilizing Natural Resources (SDA) and their limited environment so that the function or role of natural resources and the environment can survive and even their use can be improved in the long term or sustainable. In this case the researchers tried to link the way to overcome poverty with an environmental

economic approach, by looking at how the influence of environmental economic linkages in reducing poverty in Pahlawan Village, Tanjung Tiram District, Batu Bara District. Efforts to manage the environmental economy that have been promoted and the laws that have been issued have not been meaningless without the support of human awareness of the importance of the environment in order to improve the quality of the environment and the awareness that the current environment is a deposit for future generations. Environmental economics must be solved with a holistic approach. An approach that sees influence as a unit that is interrelated, dependent, diverse, harmonious and sustainability. Therefore, the solution must be that the totality cannot be done in half.

### Reducing poverty

Alleviation aimed at reducing poverty is a major problem that needs to be considered in development in Indonesia and the quality of economic growth is the key solution. The main problem in efforts to overcome poverty in coastal areas is the fact that economic growth in coastal areas is not evenly distributed as evidenced by the high income gap in the area. In this study, the author tries to discuss the environmental economic approach to overcome poverty in one of the coastal regions.

### 3. METHODOLOGY:

For data analysis from this study Structural equation modeling (SEM) was used. SEM is a statistical modeling technique that is very cross-sectional, linear and general. Included in this SEM are factor analysis, path analysis and regression.

### 4. DISCUSSION AND RESULT:

SEM gives an advantage in estimating measurement error and parameter estimation. In other words, data analysis with SEM considers simultaneous measurement model errors and structural equation models.

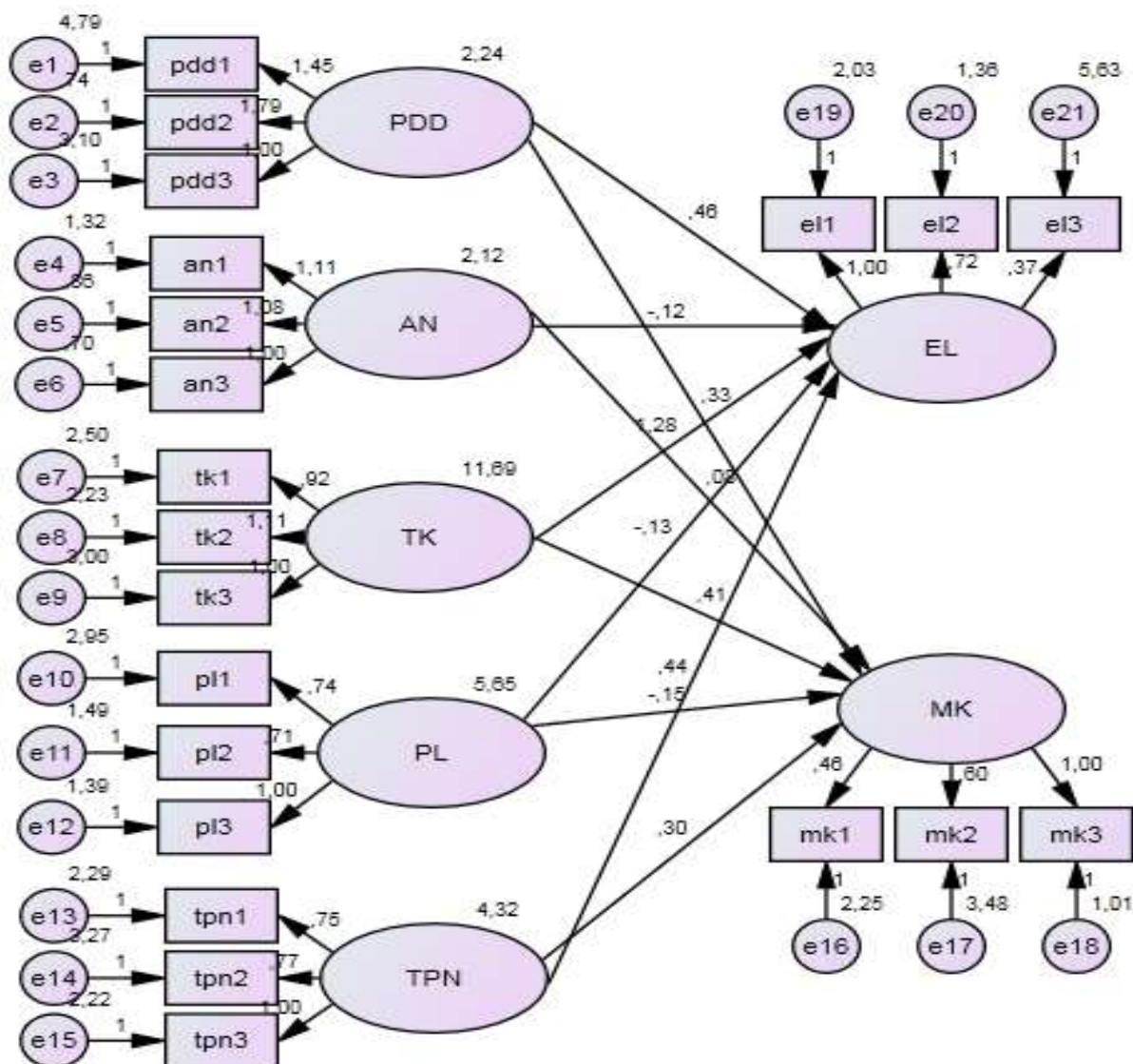
**Tabel 4.1 : Normalitas Data Nilai critical ratio**

Variable	Min	Max	Skew	c.r.	kurtosis	c.r.
tpn1	3,000	15,000	-1,408	-8,129	3,336	9,631
tpn2	3,000	15,000	,856	4,941	,548	1,583
tpn3	4,000	15,000	-,605	-3,491	,024	,068
pl1	3,000	15,000	-,645	-3,724	1,534	4,427
pl2	4,000	15,000	-1,915	-11,056	3,859	11,140
pl3	3,000	15,000	-1,270	-7,331	1,307	3,774
tk1	3,000	15,000	,575	3,319	-,677	-1,955
tk2	3,000	15,000	,551	3,184	-,917	-2,648
tk3	3,000	15,000	,496	2,864	-,841	-2,427
an1	4,000	15,000	-2,550	-14,720	6,944	20,046
an2	4,000	15,000	-2,986	-17,242	10,340	29,850
an3	4,000	15,000	-3,603	-20,799	14,673	42,358
pdd1	3,000	15,000	,054	,310	-1,043	-3,010
pdd2	3,000	15,000	1,399	8,078	1,656	4,781
pdd3	4,000	15,000	,133	,766	,017	,050
mk1	5,000	13,000	1,433	8,275	2,120	6,119
mk2	3,000	13,000	,855	4,935	,623	1,800
mk3	4,000	13,000	,947	5,465	,115	,332
el3	4,000	15,000	1,022	5,899	,042	,121
el2	3,000	15,000	,657	3,796	-,914	-2,638
el1	5,000	20,000	,362	2,087	-1,299	-3,749
<b>Multivariate</b>					<b>131,526</b>	<b>29,923</b>

Source: Output AMOS 22

The criteria used are if the score contained in column C.R is greater than 2.58 or smaller than minus 2.58 (-2.58) then it is evident that the data distribution is normal. This study totally uses 200 observational data, so that it can be said that the assumption of normality can be met.

*Goodness of Fit Model*

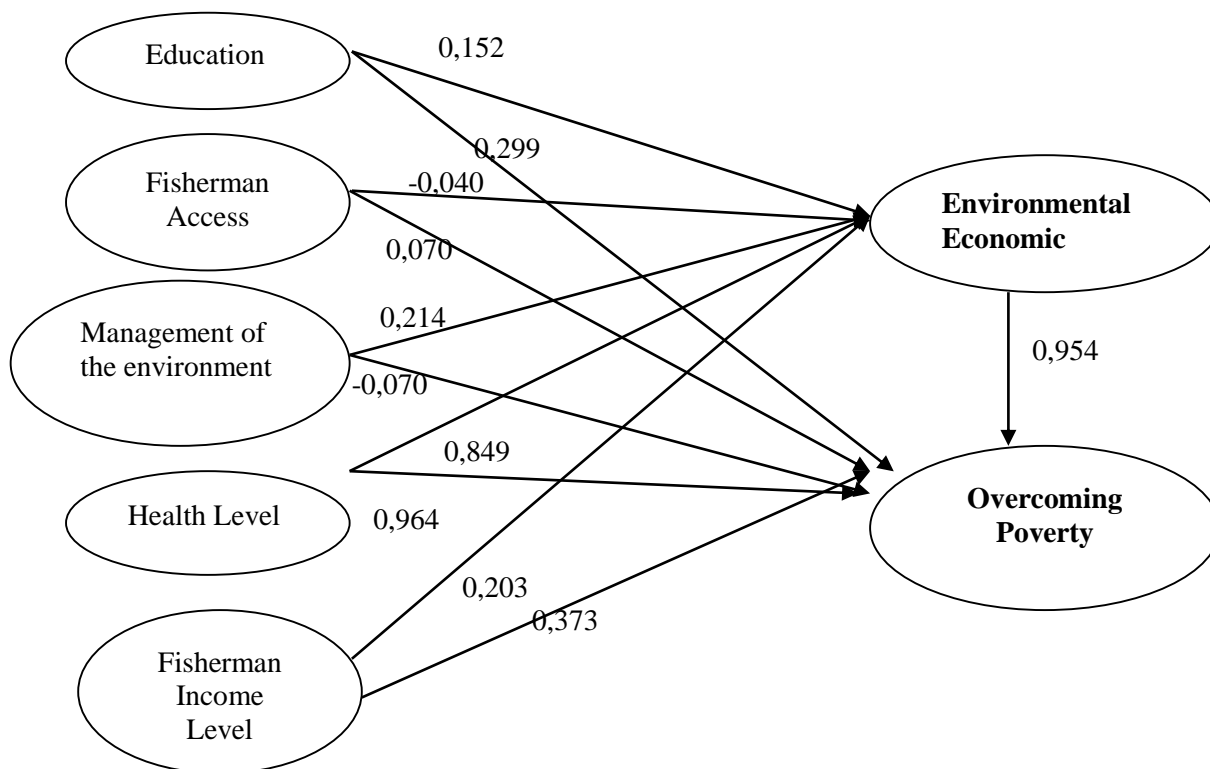


**Tabel 4.2 : Feasibility Test Results for the Research Model SEM Analysis**

Goodness of Fit Indeks	Cut of Value	Analysis Results	Model Evaluation
Min fit function of chi-square	p>0,05	(P =0.080)	Fit
Chisquare	Carmines & Melder (1981) Df=168 = 129.69	1299,206	Fit
Non Centrality Parameter (NCP)	Penyimpangan sample cov matrix dan fitted kecil<Chisquare	1118,206	Fit
Root Mean Square Error of Approx (RMSEA)	Browne dan Cudeck (1993) < 0,08	.050	Fit
Model AIC	Model AIC >Saturated AIC <Independence AIC	1399,206>Saturated AIC (462) <Independence AIC (1090,897)	Fit

Model CAIC	Model CAIC <<Saturated CAIC <Independence CAIC	1614,122<Saturated CAIC (1454) <Independence CAIC (1317,910)	Fit
Normed Fit Index (NFI)	>0,90	0.979	Fit
Parsimoni Normed Fit Index (PNFI)	0,60 – 0,90	0.685	Fit
Parsimoni Comparative Fit Index (PCFI)	0,60 – 0,90	0.611	Fit
PRATIO	0,60 – 0,90	0.862	Fit
Comparative Fit Index (CFI)	>0,90 (Bentler (2000))	0.909	Fit
Incremental Fit Index (IFI)	>0,90 (Byrne (1998))	0.911	Fit
Relative Fit Index (RFI)	0 – 1	0.628	Fit
Goodness of Fit Index (GFI)	> 0,90	0.928	Fit
Adjusted Goodness of Fit Index (AGFI)	>0,90	0.996	Fit
Parsimony Goodness of Fit Index (PGFI)	0 – 1,0	0.474	Fit

The results of indirect effects in the above table can be described as follows:



Based on the picture above it is known that, all exogenous variables affect endogenous totally. The results of the total influence show that the greatest influence in total in overcoming poverty is the health level of 0.964 while the biggest effect on the total economic environment is the health level of 0.849.

**5. CONCLUSION:**

- Education significant influence on environmental economic approaches and poverty reduction in the community of Pahlawan Village, Tanjung Tiram District, Batu Bara District, where the probability value has a three star.

- Fishermen's access has no significant effect on the environmental economic approach where the probability value is  $0.137 > 0.05$  and the fishermen's access has no significant effect on poverty reduction whereas the probability value is  $0.140 > 0.05$  so it is known that fishermen's access does not significantly influence the environmental economic approach.
- The level of health has a significant influence on the approach to environmental economics and poverty reduction in the community of Pahlawan Village, Tanjung Tiram District, Batu Bara District, where the probability value has a three star.
- Environmental management has no significant effect on the environmental economic approach in the community of Pahlawan Village, Tanjung Tiram District, Batu Bara District, where the probability value is  $0.009 > 0.05$  so it is known that environmental management does not significantly influence poverty alleviation. And environmental management has a significant influence on poverty reduction in the community of Pahlawan Village, Tanjung Tiram District, Batu Bara Regency, where the probability value has a three star.
- The level of income of fishermen is significant to the approach of environmental economics and poverty reduction in the community of Pahlawan Village, Tanjung Tiram District, Batu Bara Regency, where the probability value has a three star.

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