

# Primary Sector Performance as a Leveraging Variable for Welfare Enhancement Under Socio-Demographic Pressure and Environmental Degradation: Application of Structural Equation Modelling

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## ABSTRACT

Well-being is a state in which individuals or groups of people can adequately meet their basic needs. This study aims to analyse the influence of environmental and social demographic variables on well-being and the performance of key economic sectors in Lampung Province. The approach used is Structural Equation Modelling with the Partial Least Square method. The results of the study indicate that the direct influence of 1) environmental variables accounts for 47.9% ( $p=0.004$ ) of the performance of the main sectors, 2) the performance of the main sectors accounts for 24.7% ( $p=0.031$ ) of welfare, and 3) social demographics account for 55.2% ( $p=0.05$ ) of welfare. Meanwhile, the results of the indirect influence on the model through the main sector showed no significant effect ( $\alpha=0.05$ ). This study provides a scientific basis for formulating regional development policies oriented towards environmental sustainability and improving the quality of life of the community. It is recommended that local governments optimise resource management and data-based development planning.

**Keywords:** Welfare, Environment, Social Demographics, Main Sector Performance

## INTRODUCTION

Lampung Province has a strategic role in national development, especially in the agricultural, industrial and service sectors. Meanwhile, the welfare conditions and performance of the main sectors in Lampung Province still face various challenges influenced by environmental factors and social demographics. Environmental factors include geographical conditions, access to natural resources, and environmental policies implemented by the government. In addition, social demographic factors include the level of education, population density, unemployment rate, and social characteristics of the community, which affect the dynamics of economic growth in Lampung Province and thus have an impact on welfare or a decent quality of life. Improving household welfare and, in general, poverty alleviation, is currently one of the main objectives of economic development in the world (Mahadevan & Hoang, 2016).

The growth of the agricultural sector in Lampung Province in the second quarter of 2022 reached 2.39% on an annual basis, triggered by an increase in cassava and rice production. This sector remains the main contributor to Lampung Province's GRDP with a share of 28.65%. In addition, the agricultural sector also absorbs the largest number of workers, namely 42.54%. Over the past 10 years, Lampung Province's agricultural sector has shown positive progress, with the achievement of ranking 1st nationally in cassava production in 2020 (BPS, 2021). Kuznets' classic theory reveals that the agricultural sector has an important role in national economic growth for developing countries. This role is realized in the form of product contribution, market contribution and foreign

exchange contribution. The contribution of labor production factors from the agricultural sector to the non-agricultural sector is the sectoral mobility of labor. One of the most famous models of structural change theory by Arthur Lewis is the theory of two surplus labor sectors (Todaro, 2000).

According to Shalihah et al (2025) Indonesia's economy is one of the largest economies in Southeast Asia, with a diverse and dynamic economic structure. As a developing country with a population of more than 270 million, Indonesia has great challenges and potential in creating inclusive and sustainable economic growth. Indonesia's economy relies on the performance of several key sectors, such as agriculture, manufacturing, extractive industries (mainly oil and gas), and services, all of which play an important role in creating jobs and driving economic growth (Shalihah et al., 2025). Key sectors are essentially related to economic performance, economic growth, and income. According to the Lampung Province Central Bureau of Statistics (BPS), the GRDP per capita of Lampung Province in 2021 reached IDR 10,175,000 to IDR 10,965,000 per year, depending on the district/city (BPS, 2022).

The national economic growth rate is the cumulative of economic growth in the regions. The rate of economic growth both nationally and regionally is closely related to the performance of the production of goods and services, in this case being a fixed parameter measured by the amount in Gross Domestic Product (GDP) for the national and Gross Regional Domestic Product (GRDP) for the region. The high economic growth performance of Lampung Province, on the other hand, must be paid for by land conversion (Bakri, 2017).

In 2020, the 2020 population census (SP2020) recorded Indonesia's population in September 2020 as 270.20 million. Since Indonesia held its first population census in 1961, the population has continued to increase. The SP2020 results compared to SP2010 showed an increase in population of 32.56 million people or an average of 3.26 million every year. In the last ten years (2010 to 2020), Indonesia's population growth rate was 1.25 percent per year. There is a slowdown in the population growth rate of 0.24 percentage points when compared to the population growth rate in the 2000-2010 period which amounted to 1.49 percent (BPS, 2021). The population growth rate of Lampung Province for 10 years (2010-2020) is 1.65% per year, an increase of 0.41% when compared to the 2000-2010 period which amounted to 1.24% (BPS Lampung Province, 2021). In general, the increase in population and density affects income inequality (gini ratio). Inequality in income distribution is the difference in the size of income received by different individuals, which causes a gap between the upper and lower classes of society. Income distribution inequality is a problem that often occurs in both developed and developing countries. Income inequality will cause social problems that will have an impact on high income inequality can cause economic instability (Maesza et al., 2022). Income inequality can be caused by various factors, including education, employment opportunities, and economic policies. The impact of these inequalities can create social tensions, reduce social mobility, and hinder economic growth. Therefore, it is important for the government and society to address the issue of income inequality.

This is through policies that support income equality and improved access to education and employment opportunities. Lampung Province, located at the southern tip of Sumatra Island, has various challenges and opportunities in terms of community welfare. In general, welfare in Lampung is influenced by economic, education, health and infrastructure factors. Overall, the welfare condition in Lampung Province shows progress, but still requires attention and continuous efforts from the government and the community to achieve better welfare.

Environmental variables are external factors that affect the life and development of an organism, system or process. In an ecological context, these variables include elements such as temperature, humidity, light and nutrient availability, all of which can affect the interactions between species and their habitats. Also, in the field of business, environmental variables can refer to the economic, social, and political conditions that affect a company's operations. Understanding environmental variables is essential for effective and sustainable decision-making.

The linkage of social demography to welfare reveals a strong correlation, in general, an increase in population brings new colors in economic growth and welfare. Welfare theory generally adopts Adam Smith's theory of individuals who have the drive to fulfill needs and wants, through three approaches namely, classical utilitarianism, neoclassical welfare theory, and the new social contract approach. Every individual has a high

drive to fulfill his needs and desires, thus giving an impact on the performance of the industrial, agricultural, and service sectors (Aronsson & Löfgren, 2007). Lampung Province is a strategic area of national trade and as a shipping route to the provinces on the island of Sumatra. In addition, Lampung Province is one of the provinces with the largest horticultural agricultural products in Indonesia.

Based on the Pattern of Development theory, the more developed a country is, the role of the agricultural sector in GRDP will decrease. Of course, this condition is very ironic for developing countries, where most developing countries dominated by the agricultural sector are unable to compete and even depend on developed countries (Syrquin, & Chenery, 2021). In addition, the industrial and services sectors have a significant impact on welfare, with the industrial sector often seen as the driver of economic growth and employment, while the services sector plays an important role in supporting and improving the quality of the economy.

Play an important role in supporting and improving quality of life (Hajighasemi, et, al., 2022). Environmental issues such as climate change, resource depletion and pollution can directly affect social demographics, including health outcomes, access to resources and community resilience. Conversely, social demographics, such as population growth and urbanization, can exacerbate environmental challenges and affect economic sectors (Lee & Suh, 2022). Therefore, it is important to understand how these variables interact with each other and contribute to welfare improvement and key sectors in Lampung Province. One approach that can be used to analyze the complex relationships between these variables is Structural Equation Modeling (SEM). SEM is a multivariate analysis technique that allows simultaneous testing of causal relationships between latent and measured variables (Byrne, 2010).

This study aims to examine the influence of environmental and socio-demographic variables on the welfare and performance of the main sectors in Lampung Province using the SEM method. The results of this study are expected to provide recommendations for local governments and stakeholders in formulating more effective policies to improve community welfare and the main sectors in the region through environmental and social-demographic aspects to provide quality of life and economic growth in Lampung Province.

## LITERATURE REVIEW (11 PT)

### Welfare theory

The grand theory of Welfare, the Welfare State according to Bentham (1748-1832), promotes the idea that governments have a responsibility to ensure the greatest happiness (or welfare) of the greatest number of their citizens. Bentham used the term 'utility' to explain the concept of happiness or welfare. Based on the principle of utilitarianism that he developed, Bentham argued that something that can cause extra happiness is good. Conversely, something that causes pain is bad. (Oman, 2016).

Based on social welfare theory (Pigou, 1920), increased welfare provides opportunities for people to invest in education and health, thereby improving quality of life while reducing poverty levels and encouraging better family planning.

better family planning. According to Todaro and Smith (2020), the human development index plays a strategic role in determining the quality of life of a region, which contributes directly to efforts to reduce poverty and control population growth.

### Second Literature (10pt)

Convey concisely and clearly the literature review in your article (10 pt)

### Demographic theory

According to Donald J. Bogue (1993) Demography is the statistical and mathematical study of the size, composition, and distribution of the population, as well as changes over time through major components such as birth, death, and migration. Demography is a quantitative description or analysis of human characteristics. In the context of services, demographics are an important factor that influences the assessment of service quality. Lim et al. (2008), categorize demographic aspects including gender, age, income, and occupation. According to

Wade and Tavis (2007), "sex" is the physiological and anatomical attributes that distinguish between men and women, while "gender" is used to indicate learned differences between men and women.

## Ecological theory

In the conceptual framework, the author raises the theory of human ecology, proposed by sociologist Robert E. Duncan in 1959, which is an approach that examines the interaction between humans and the environment or reciprocal relationships. This theory provides important insights into how humans interact with their environment and how changes in one aspect can affect another.

## METHODS

This research was conducted in November 2024 - January 2025. The location and place of this research were carried out at the University of Lampung Postgraduate Laboratory 2025. The types and sources of data used in the implementation of this research are secondary data. The data was obtained from several relevant agencies in fourteen cities and districts in Lampung Province in 2009, 2012, 2015, 2018 and 2021.

Statistical modeling involving relationships between variables and also indicator models simultaneously is called structural equation modeling (SEM). SEM analysis is a partial representation of the system under study that should be able to explain system behavior close to real conditions (Fernandes, 2017). This model serves to describe the relationship between variables, properties, or components of the symptoms to be studied. Models are used to explain predictions and help researchers understand complex causes and effects. The following is a model in research using structural equation modeling, as follows;

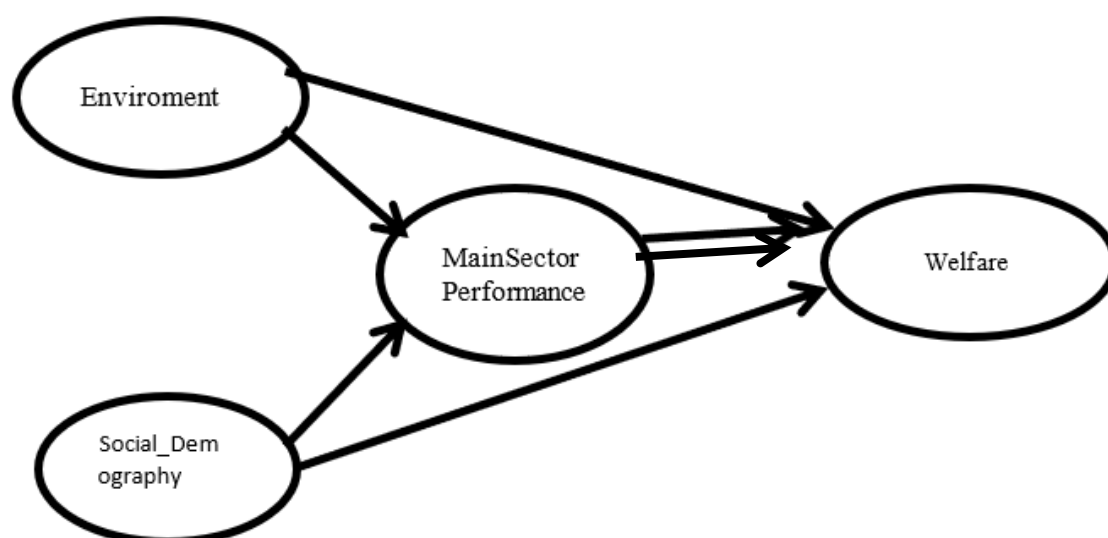


Figure 1: Research Model Algorithm.

## Stages of model analysis

Evaluation of the measurement model or outer model is carried out to assess the validity or reliability of the model. Measurement of instrument validity and reliability is carried out by conducting internal consistency (Cronbach's Alpha & Composite Reliability), convergent validity (loading factor and AVE) and discriminant validity (Fornell-Lacker Criterion and cross loading) tests. The loading factor value shows the correlation between measurement items (indicators). Outer model testing is done using with the help of the PLS Algorithm procedure. To assess reliability, it can be seen from the Cronbach's Alpha value. This value reflects the reliability of all indicators in the model. The minimum value is 0.7. In addition to Cronbach's Alpha, the pc (composite reliability) value is also used which is interpreted the same as the Cronbach's Alpha value.

**Structural Model Evaluation (Inner Model)** In this study, in order to predict the relationship between latent variables, structural model testing was carried out by looking at the R-square value for the dependent construct

and the significance test of the structural path parameter coefficient (Ghozali, 2016). The following are the stages in evaluating the inner model; 1) Multicollinearity Test Results. The value model used for the model collinearity test is looking at the Variance Inflation Factor (VIF) value (Hair et al., 2017). 2) Adjust R-Square (R<sup>2</sup>). The R-square value is interpreted the same as the R-square interpretation in linear regression where the amount of variability in the dependent variable can be explained by the independent variable. The criteria for the R-square value, namely 0.75, 0.50 and 0.25, categorize the predictive ability of a model as strong, medium / moderate and weak (Ghozali, 2016). 3) Q-Square (Q<sup>2</sup>) According to Musyaffi et al., (2021) the criteria for the Q-square (Q<sup>2</sup>) value, namely the Q<sup>2</sup> value is less than 0, which means that the exogenous latent structure as an explanatory variable can be interpreted as a prediction of the existing structure. The Q-square test aims to predict whether the model is good or not.

In hypothesis testing research using the t test. This t test aims to test how far the influence of one independent variable on the dependent variable is by holding the other independent variables constant (Ghozali, 2017: 23). The t test is used to test the effect of the impact of environmental variables and social demographics on welfare and the main sector. There are several criteria in this t test using the significant level of t-table (1.671) and p value ( $\alpha = 5\%$ ).

## RESULTS AND DISCUSSION (11 PT)

Lampung Province is located at the southern tip of Sumatra Island, Indonesia. The province has an area of approximately 35,570 km<sup>2</sup> and borders Bengkulu Province to the north, Jambi Province and South Sumatra Province to the east, and the Sunda Strait to the south and west. Lampung Province has a diverse topography, ranging from beaches, lowlands, to mountains. Mount Tanggamus is one of the highest mountains in Lampung Province, with an altitude of about 2,100 meters above sea level. The average temperature in Lampung Province ranges from 20-30°C. Lampung Province has several large rivers, such as Way Seputih River, Way Tulangbawang River, and Way Sekampung River. These rivers play an important role in providing water for irrigation, industry, and community needs. Lampung has abundant natural resources, such as petroleum, natural gas, coal, and forest products. In addition, Lampung Province is also famous for its agricultural production, such as coffee, chocolate and cassava. In 2024, the number of sub-districts in Lampung Province is 229 sub-districts. Meanwhile, the number of sub-districts and villages in Lampung Province is 2,654 sub-districts or villages. The following are districts / cities in Lampung Province, which can be seen in Table 4 below;

Table 1 District and City Data in Lampung Province.

### Results of structural equation modeling analysis

PLS-SEM analysis is used as a first step in determining the validity of each relationship between indicators and their constructs or latent variables. The results of the value of convergent validity seen in the measurement model with reflexive indicators are assessed based on the correlation between item scores and latent variable scores estimated by the PLS program. The following are the results of SEM analysis using the Smart-PLS application;

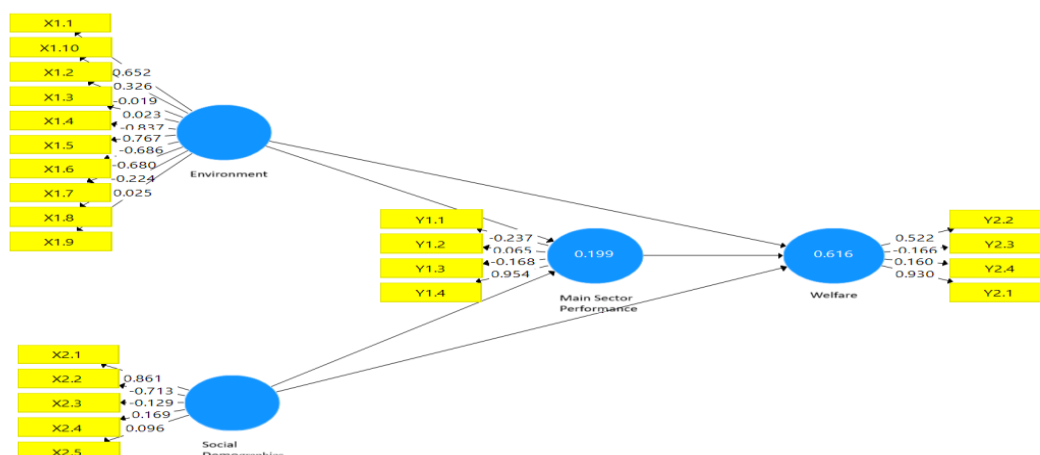


Figure 2 Results of Initial Stage PLS\_SEM Model Processing.



Based on table 10, Indicators X1.2, X1.3, X1.8, X1.9, and X1.10 (Environment), X2.3, X2.4, and X2.5 (Social Demographics), Y1.1, Y1.2, Y1.3 (Main sector), and Y2.3, and Y2.4 (Welfare) outer loading value  $< 0.5$ , then it does not meet the requirements of convergent validity. If the outer loading value  $> 0.5$  is a variable that has explained 50% or more of the variance of its indicators, these results are found in indicators (X1.1, X1.4 X1.5, X1.6, X1.7, X2.1, X2.2, Y1.4, Y2.1, and Y2.2). This study can also use the opinion of Chin & Wynne (1999), if the outer loading value between 0.5 to 0.6 can be considered sufficient for convergent validity requirements. The results used by  $>$  outer loading value of 0.5, it can be concluded that the indicator whose value meets the requirements of convergent validity.

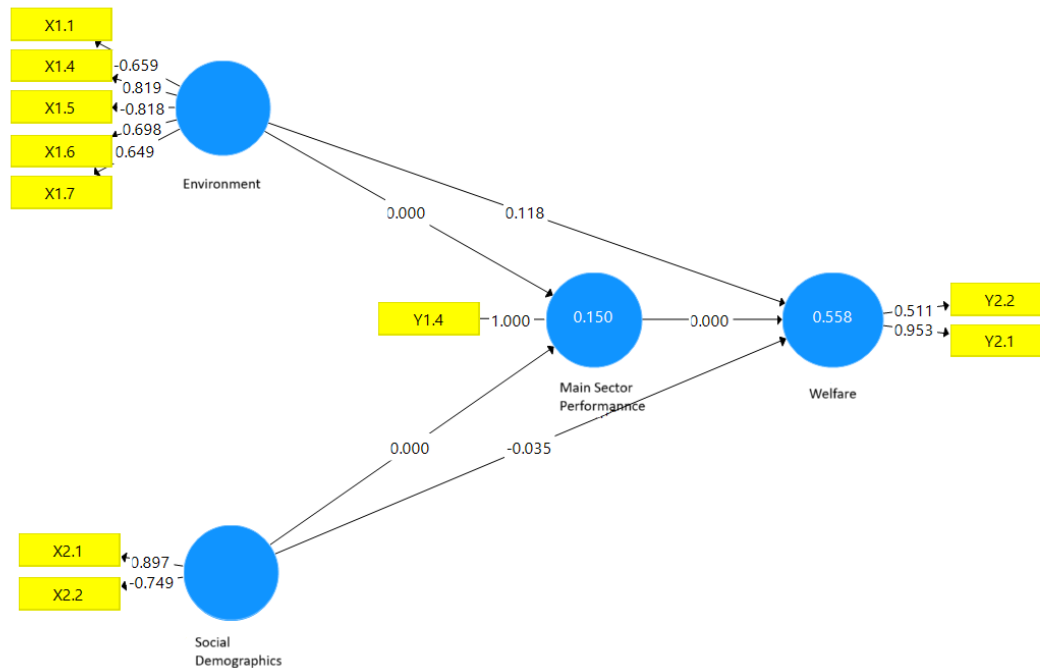


Figure 3 Modified Path Analysis.

Figure 3 above is a representation of this model describing the causal relationship between latent variables, which is represented by connecting lines and path coefficient values. The following is the relationship shown in the model built. Environment (X1) to Main sector Performance (Y1) (0.000), Environment has a positive influence on changes in the main sector. Environment (X1) to Welfare (Y2) (0.118), the Environment has a positive influence on the main Sector meaning. Social Demographics (X2) on the main Sector (Y1) (0.000), the latent variable Social Demographics has a positive influence on changes in the main Sector. latent Social demographics have a positive influence on the main sector. Social Demographics (X2) on Welfare (Y2) (-0.035), Social demographics also have a negative effect on welfare. Main sector (Y1) on Welfare (Y2) (0.000), The latent variable Main sector has a positive influence on welfare. The coefficient value results show the direction and strength of the relationship between latent variables.

Table 2 Discriminant Validity Value.

Symbol	Indicator	Social Demografi	Environment	Welfare	Main Sector Performance
X1.1	Hutan Neagara	-0.324	-0.659	-0.155	-0.333
X1.4	Settlement	0.925	0.819	0.721	0.254
X1.5	Agriculture	-0.407	-0.818	-0.343	-0.454
X1.6	Rice	0.295	0.698	0.503	0.212

X1.7	Minimum Temperature	0.516	0.649	0.268	0.114
X2.1	population density (people/km <sup>2</sup> )	0.897	0.586	0.669	0.201
X2.2	Sex ratio (Gender)	-0.749	-0.643	-0.447	-0.128
Y1.4	GRDP per capita	0.205	0.375	0.406	1.000
Y2.2	Gini Ratio	0.354	0.210	0.511	-0.092
Y2.1	HDI	0.659	0.625	0.953	0.493

(Processed in 2025).

Based on the results of the table, it can be seen that the estimated value of cross loading in table 11 above shows that the loading value of each indicator item on its construct starting from (X1.1, X1.5, X1.6, X1.7, X2.1, X2.2, Y1.4, Y2.1, and Y2.2) is greater than the cross loading value, thus it can be concluded that all constructs or latent variables have good discriminant validity. Then for the value that does not have poor discriminant validity is the indicator item (X1.4). The results of the discriminant validity test can also be obtained through the Average Variant Extracted (AVE) value. A good measurement model is when the latent construct value has an AVE value.

> 0,5. The AVE value from table 12 shows the following results;

Table 3 Results of Average Variant Extracted (AVE) Value.

Variabel	Average Variance Extracted (AVE) ( > 0.5)	Keterangan
Social Demographics	0.683	Good construct
Environment	0.536	Good construct
Welfare	0.585	Good construct
Main sector Performance	1.000	Good construct

(Processed in 2025).

Table 4 Results of R-Square (R2) Analysis.

Variabel Endogen	R-Square
Welfare	0.558
Main sector	0.150

(Processed in 2025).

Based on the results of the calculation of R2 on each endogenous latent variable in table 15 above, it shows that the calculated R2 value in the main sector of 0.150 (15%) is weak. While the calculated R2 result on Welfare of 0.558 (55.8%) is classified as moderate.

Table 5 Q-Square Analysis Results (Q2).

Variabel Laten	SSO	SSE	Q <sup>2</sup> (=1-SSE/SSO)
Social Demographics	140.000	140.000	
Environment	350.000	350.000	
Welfare	140.000	103.509	0.261
Main sector Performance	70.000	63.733	0.090

(Processed in 2025).

Based on the Q2 results in table 16 above, it can be interpreted that the results on the endogenous latent variable Main sector (Y1) have good predicate relevance with a result of (0.090). Then for the results on the endogenous variable Welfare (Y2) explains the relevance of a good predicate with a result of (0.261). According to Ghazali (2014), the Q2 value can be used to measure how well the observation value is produced by the model and also the parameter estimate.

### Hypothesis Test Results

A hypothesis test in which specific hypotheses are generated about population parameters and sample statistics are used to judge whether the hypothesis is acceptable or has a real effect. In general, this quantity can be interpreted as the probability that  $\beta$  belongs to a distribution with mean zero and standard deviation  $\sigma$ . If the P-value  $\leq 0.05$  the hypothesis is accepted, otherwise it is rejected. While the t-count (t-Statistics  $> 1.671$ ), there is a significant effect of endogenous variables on exogenous variables. The results of hypothesis testing related to the effect of Welfare (Y2) and the main sector (Y1) on the Environment (X1) and Social Demographics (X2) can be seen from the direct effects, indirect effects, and indirect effects. Indirect effects and total effects. The following are the results of hypothesis testing using the Structural Equation Modeling approach can be seen in table 17 and table 18 below, as follows;

Table 6 Hypothesis testing results direct effects.

Variabel	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P-Values
Environment (X1) > Welfare (Y2)	0.123	0.122	0.128	0.960	0.337
Environment (X1) > Main sector Performance (Y1)	0.479	0.491	0.167	2.863	0.004
Social Demographics (X2) > Welfare (Y2)	0.552	0.531	0.196	2.817	0.005
Social Demographics (X2) > Main sector Performance (Y1)	-0.143	-0.153	0.173	0.826	0.409
Main sector Performance (Y1) > Welfare (Y2)	0.247	0.257	0.115	2.153	0.031

(Processed in 2025).



Table 7 Indirect effects hypothesis testing results.

Variabel	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P-Values
Environment (X1) > Main sector Performance (Y1) > Welfare (Y2)	0.118	0.129	0.079	1.499	0.134
Social Demographics (X2) > Main sector Performance (Y1) > Welfare (Y2)	-0.035	-0.042	0.056	0.625	0.532

(Processed in 2025).

Based on tables 17 and 18, it can be explained the direct relationship between variables (direct effects) and indirect relationships as follows;

The direct effect of Environment (X1) on Welfare (Y2) with the results of the Coefficient value of 0.123 indicates that the effect of Environment (X1) on Welfare (Y2) is weak and positive. The t-value (0.960) < t-table, and p-value (0.337) > 0.05, so the effect of Environment (X1) on Welfare (Y2) is not significant (H0 accepted) and there is no real effect between Environment (X1) on Welfare (Y2). In the context of this study, although there is a positive effect, the contribution of the environment to improving HDI is not significant enough to show a strong relationship. This may be due to other factors that are more dominant in influencing welfare, such as government policies, access to education, and infrastructure. This is in line with the results of research described by Leuwol et al (2023) stating that highlighting the importance of green spaces for well-being and concerns about environmental pollution (Leuwol et al., 2023).

The direct effect of Environment (X1) on the main sector (Y1) with a coefficient value of 0.479, the positive effect is quite strong. The t-count value (2.863) > t-table, and p-value (0.004) < 0.05, so that the effect of the Environment (X1) on the Main Sector (Y1) can be concluded to be significant (H0 Rejected) and has a real effect between the Environment (X1) on the main sector (Y1). This is in line with the results of research by Amelia et al (2024) which states that the implementation of Green Economy strategies can also have a positive impact on Per Capita Income by creating new job opportunities in environmentally oriented sectors. Thus, the results given by provided by environmental factors in this model proved to be a key factor that significantly influenced the main sectors.

The direct effect of Social Demographics (X2) on Welfare (Y2) with the results of the Coefficient value of 0.552, shows that Social Demographics has a positive influence on Welfare. Meanwhile, the t-count value (2.817) is greater than the t-table (1.671), and the p-value (0.005) < 0.05, so it can be concluded that the effect is significant (H0 Rejected) and has a real effect between Social Demographics (X2) on Welfare (Y2). This is in line with the results of the study which state that together, economic growth and the Gini ratio do not have a significant effect on the poverty rate in Parepare City, with a coefficient of determination of 55.5%. This finding suggests that other factors may play a greater role in determining the poverty rate in the region (Suhardi & Rival, 2024). Socio-demographic factors and economic activity have a positive and significant effect on welfare (Wiyatna et al., 2015). In addition, elements such as age, gender, education level, and employment status play an important role in determining an individual's quality of life.

The direct effect of Social Demographics (X2) on the main sector (Y1) with the result of the coefficient value of 0.143, it can be concluded that the effect of Social Demographics (X2) on the main sector (Y1) is weak and positive. The results of the t-count value (0.826) < t-table, and p-value (0.409) > 0.05. It is concluded that it is not significant (H0 accepted) and has no real effect between Social Demographics (X2) on the main Sector (Y1). In this case, social demographic factors include indicators of population density and sex ratio contained in the built model. In general, the relationship between social demographics and the main sector has a significant effect,

but different indicators have different indicators that reflect this, for example, in this study it has no significant effect.

The direct effect of the main sector (Y1) on welfare (Y2) with the results of the coefficient value of 0.270 Indicates a positive influence on welfare. Then the t-count value (2.183) > t-table, and p-value (0.031) < 0.05, so that the effect of the main sector (Y1) on Welfare (Y2) is significant (H0 Rejected) and has a real effect between the main sector (Y1) on Welfare (Y2). This research supports the theory of sustainable development which places the growth of the productive sector as the main point in improving the quality of life and welfare. This research is also in line with Marcal et al (2024) which states that the positive impacts of economic growth include increased production levels, increased levels of community welfare, and increased social values of the community.

Indirect influence Environment (X1) on Welfare (Y2) through the main sector (Y1). The result of the t-Statistic value of  $1.499 < t\text{-table}$  and p-value (0.134) > 0.05, so that the indirect effect of Environment (X1) on Welfare (Y2) through the main Sector (Y1) is not significant (H0 accepted) and there is no real influence. Thus it can be stated that according to the statistical significance test criteria, it can be concluded that this indirect effect is not significant and there is no real influence from the Environmental factor on welfare through the main sector. In this case, although Environmental factors such as air quality and land use are expected to improve the main sector and ultimately have an impact on welfare, the indirect analysis involving the role of the main sector is not statistically proven in this study. This suggests that improvements in Environmental factors alone are not sufficient to influence welfare unless accompanied by other factors that strengthen the effectiveness of related sectors. This research is in line with Bangsawan's research (2024) which states that there is a need for local community empowerment and integration of environmental and social aspects in every development policy. By strengthening community capacity, protecting the environment, and promoting social inclusion, island regions can achieve sustainable economic growth while ensuring environmental sustainability and social welfare.

The indirect effect of Social Demographics (X2) on Welfare (Y2) through the main Sector (Y1). t-Statistic of  $0.625 < t\text{-table}$  and p-value (0.532) > 0.05, meaning that the indirect effect of Social Demographics (X2) on Welfare (Y2) through the main Sector (Y1) is not significant (H0 accepted) and there is no real effect. According to Malik (2018), this condition shows that there are still problems with the distribution of welfare, thus presenting a "missing link" between economic performance and social welfare. Prasetyantoko et al (2012) stated, "There is currently a 'missing link' between economic performance and social welfare. As is known, there is a kind of paradox in Indonesia's economic performance; high economic performance is not accompanied by an adequate improvement in the quality of human life. Thus, Indonesia's economic prospects must include an important agenda, namely efforts to improve social welfare. The fact that there is no connection between economic performance and social welfare is not only a concern for economists and politicians, but also for policy makers and social activists".

## CONCLUSION (11 PT)

The content of the conclusion should be an answer to the question and research objectives. Conclusions are presented in one paragraph, not bullet points, and are expressed not in statistical sentences. The conclusion is equipped with one paragraph of research results suggestions (10pt).

## ACKNOWLEDGEMENTS (10 PT)

Author thanks ... . In most cases, sponsor and financial support acknowledgments (10pt).

## REFERENCES (10 PT)

The main references are international journals and proceedings. All references should be to the most pertinent, up-to-date sources **and the minimum of references are 25 entries** (for original research paper) and **50 entries** (for review/survey paper). References are written in **IEEE style**. For more complete guide can be accessed at (<http://ipmuonline.com/guide/refstyle.pdf>). Use of a tool such as **EndNote**, **Mendeley**, or **Zotero** for reference

management and formatting, and choose **IEEE style**. Please use a consistent format for references-see examples (8 pt):

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J. K. Author, "Title of paper," Abbrev. Title of Journal/Periodical, vol. x, no. x, pp. xxx-xxx, Abbrev. Month, year, doi: xxx.

Examples:

- M. M. Chiampi and L. L. Zilberti, "Induction of electric field in human bodies moving near MRI: An efficient BEM computational procedure," IEEE Trans. Biomed. Eng., vol. 58, pp. 2787–2793, Oct. 2011, doi: 10.1109/TBME.2011.2158315.
- R. Fardel, M. Nagel, F. Nuesch, T. Lippert, and A. Wokaun, "Fabrication of organic light emitting diode pixels by laser-assisted forward transfer," Appl. Phys. Lett., vol. 91, no. 6, Aug. 2007, Art. no. 061103, doi: 10.1063/1.2759475.

### Conference Proceedings

Basic Format:

J. K. Author, "Title of paper," in Abbreviated Name of Conf., (location of conference is optional), year, pp. xxx–xxx, doi: xxx.

Examples:

- G. Veruggio, "The EURON roboethics roadmap," in Proc. Humanoids '06: 6th IEEE-RAS Int. Conf. Humanoid Robots, 2006, pp. 612–617, doi: 10.1109/ICHR.2006.321337.
- J. Zhao, G. Sun, G. H. Loh, and Y. Xie, "Energy-efficient GPU design with reconfigurable in-package graphics memory," in Proc. ACM/IEEE Int. Symp. Low Power Electron. Design (ISLPED), Jul. 2012, pp. 403–408, doi: 10.1145/2333660.2333752.

### Book

Basic Format:

J. K. Author, "Title of chapter in the book," in Title of His Published Book, X. Editor, Ed., xth ed. City of Publisher, State (only U.S.), Country: Abbrev. of Publisher, year, ch. x, sec. x, pp. xxx–xxx.

Examples:

A. Taflove, Computational Electrodynamics: The Finite-Difference Time-Domain Method in Computational Electrodynamics II, vol. 3, 2nd ed. Norwood, MA, USA: Artech House, 1996.

R. L. Myer, "Parametric oscillators and nonlinear materials," in Nonlinear Optics, vol. 4, P. G. Harper and B. S. Wherret, Eds., San Francisco, CA, USA: Academic, 1977, pp. 47–160.

### M. Theses (B.S., M.S.) and Dissertations (Ph.D.)

Basic Format:

J. K. Author, "Title of thesis," M.S. thesis, Abbrev. Dept., Abbrev. Univ., City of Univ., Abbrev. State, year.

J. K. Author, "Title of dissertation," Ph.D. dissertation, Abbrev. Dept., Abbrev. Univ., City of Univ., Abbrev. State, year.

Examples:

- J. O. Williams, "Narrow-band analyzer," Ph.D. dissertation, Dept. Elect. Eng., Harvard Univ., Cambridge, MA, USA, 1993.
- N. Kawasaki, "Parametric study of thermal and chemical nonequilibrium nozzle flow," M.S. thesis, Dept. Electron. Eng., Osaka Univ., Osaka, Japan, 1993.

\*In the reference list, however, list all the authors for up to six authors. Use et al. only if: 1) The names are not given and 2) List of authors more than 6. Example: J. D. Bellamy et al., Computer Telephony Integration, New York: Wiley, 2010.

See the example

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## BIOGRAPHIES OF AUTHORS (10 PT)

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