Selection of the Use of Various Poverty Indicators in the Formulation of Development Policies in Papua Province 2002-2022

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ARTICLE INFORMATION

ABSTRACT

Poverty is a frequent topic of conversation. The purpose of this study is to examine the relationship between the poverty rate, the people living in poverty, the depth of the poverty index, and the severity of the poverty index in Papua Province from 2002 to 2022. Data analysis entails using descriptive analysis and correlation analysis techniques. While no clear association is found between the poverty rate indicator and the number of individuals living in poverty, a positive correlation exists between the poverty rate indicator and the poverty depth index. Additionally, there is a direct relationship between the poverty rate indicator and the poverty severity index, though with a low correlation coefficient. Conversely, no significant association is observed between the depth of the poverty index and the number of destitute individuals. Furthermore, a negative link is noted between the poverty severity index and the population of individuals living in poverty. Notably, a highly significant correlation exists between the depth and severity of the poverty index in Papua Province. The government of Papua Province should prioritize poverty reduction activities by selecting one of the four available alternatives. These tasks are required to achieve this requirement.

INTRODUCTION

The phenomenon of rapid economic growth contributes to the political acceptance of efforts to combat unemployment. This is primarily due to the fact that economic growth creates an increased demand for production, expands the capacity of the labor force, and facilitates the exploration of new economic sectors. The financial compensation that workers receive as a result of this phenomenon ultimately increases. According to Tambunan (2011) and Runtunuwu & Kotib (2021), economic growth serves as a benchmark for effective development and is essential for poverty reduction. The issue of poverty is characterized by its complexity and the existence of different points of view. Economic growth is commonly regarded as a necessary condition for the reduction of poverty. The high incidence of this issue can be ascribed to the inadequate financial resources of the populace, which hinders their ability to meet fundamental necessities such as housing, clothes, and sustenance. Furthermore, the inadequate caliber of human resources within the community worsens the situation. The World Bank (n.d.) defines poverty as the state of lacking prosperity. Roring & Rondonuwu (2022) and Aziz, Royani, & Syukriati (2021) said that poverty could be defined as a condition in which people live in constrained conditions, especially financially, leading to difficulties in meeting their various life needs. People with low purchasing power find it more difficult to meet their needs, including access to healthcare and education, which lowers the standard of living in the community. According to Uwizeye, Irambeshya, Wiehler, and Nuragire (2022), poverty is a condition characterized by limited access to essentials such as clean water, food, education, health care, and housing. According to Suryawati (2005), there are four types of poverty: absolute, relative, culture, and structural poverty. According to Kuncoro (2006), there are three types of poverty, they are relative, moderate, and extreme.

The challenges faced by the Papuan administration and the federal government are remarkably similar, especially in the form of a high poverty rate. Therefore, poverty alleviation is a collective obligation, especially given the fact that the government strongly supports improving the quality of life of individuals. Consequently, the government must immediately develop an effective action plan, establish comprehensive and strategic measures, and make diligent efforts to reduce poverty. And population has become one of the most important issues in regional economic development. This is because uncontrolled population growth can make it difficult to achieve economic development goals such as improving community welfare and reducing poverty. According to Sukirno (2005), Nelson and Leibenstein posit a causal connection between population growth and the extent of public welfare. The new economic paradigm asserts that economics encompasses not only the attainment of significant economic growth, but also the resolution of concerns pertaining to job generation and the mitigation of wealth inequality (Todaro & Smith, 2006).

The aim of this study was to examine the relationships between several elements that impact poverty, such as the poverty rate, the number of individuals in poverty, the poverty depth index (P1), and the poverty severity index (P2). If all poverty indicators are interconnected and consistent, then the government can only employ one of the four indicators to tackle poverty in Papua. If there is no correlation identified among these poverty indicators, the government of Papua should exercise more caution in picking these indicators or consider using alternative measures to effectively fight poverty. According to the above explanation, poverty in Indonesia persists currently and is influenced by policies enacted by both local and national governments. Nevertheless, the percentage of the people residing in poverty is exceedingly elevated and has minimal indications of decrease. The government is actively working to reduce the number of

poor citizens in the region through many initiatives, including tax policy and direct engagement with the underprivileged community. Selecting poverty indicators for development policy in Papua Province is essential for understanding socio-economic conditions and identifying the most vulnerable populations. Policy makers can use indicators to strategically plan actions and allocate resources in order to effectively alleviate poverty and enhance the general well-being of the people. Papua Province utilizes various widely known poverty indicators to gain insights into the socioeconomic situation of the province. The poverty rate is a crucial measure that indicates the proportion of people living below the officially defined poverty line. Although there has been a decrease in the poverty rate over time, it nevertheless remains high in numerous places, especially in rural and remote areas. Another significant metric is the poverty headcount, which measures the precise number of individuals residing below the poverty threshold, providing a more concrete understanding of the magnitude of poverty in the province. In addition, the poverty depth index quantifies the extent of poverty by taking into account the degree of deprivation across multiple dimensions, including health, education, and living standards. The Poverty Severity Index offers a comprehensive evaluation of poverty by measuring the level of deprivation faced by individuals living in poverty, providing valuable insights that go beyond a basic tally of the poor. These indicators can be used in combination to gain a more comprehensive understanding of poverty in Papua Province and to develop targeted measures to reduce poverty and improve the overall welfare of the population.

LITERATURE REVIEW

Poverty

Poverty is characterized as the incapacity to meet the customary level of material well-being within a particular location. This state of incapacity is characterized by a deficiency of financial resources to fulfill essential needs such as sustenance, attire, and housing. The limited financial resources also impact an individual's capacity to sustain a typical quality of life, particularly in terms of public health and education.To effectively combat poverty and enhance the general welfare of the community, it is crucial to implement focused interventions and distribute resources efficiently. Papua Province utilizes various widely-used poverty indicators to gain insights into the socioeconomic situation of the province. The poverty rate is a crucial measure that indicates the proportion of people living below the officially defined poverty line. Although there has been a decrease in the poverty rate throughout time, it nevertheless remains high in numerous areas, especially in rural and isolated regions. Another significant metric is the poverty headcount, which measures the precise number of individuals residing below the poverty threshold, providing a more concrete understanding of the magnitude of poverty in the province. In addition, the poverty depth index quantifies the extent of poverty by taking into account the degree of deprivation across multiple dimensions, including health, education, and standard of life. The Poverty Severity Index offers a comprehensive assessment of poverty by measuring the level of deprivation experienced by those living in poverty, providing valuable insights that go beyond a basic count of the poor. Poverty, according to Nurwati (2008), is a social issue that people encounter every day. Poverty is as old as humanity, and its basic causes are tied to several facets of human life. In other words, poverty is a life-changing issue that affects everyone. This means that poverty has become a global concern with repercussions that vary by country. Poverty, as defined by the Central Agency of Statistics (BPS, 2024) is the failure to meet fundamental economic, material, and physical needs for food and other products as measured by expenditure.

Number of Poor People
People are considered poor if their average monthly per capita spending falls below the poverty line (Garis Kemiskinan), which is calculated using survey findings (samples). The poverty rate, released by BPS (20214) is a macro statistic derived from the National Socio-Economic Survey (Susenas) that represents the percentage of impoverished persons in a region's total population. Current social thinking is increasingly focused on the causes of poverty and the factors that are assumed to influence the number of poor individuals in a given location. These aspects of wealth or poverty are then utilized to calculate the size of the poor population (Saleh, 2002).

Poverty Depth Index
According to Beik in the study by Firstiana (2012), it is explained that poverty indicators can be analyzed using different types of poverty indices, namely (1) Headcount Ratio, a measure that indicates the percentage of poor people in the population, (2) Poverty Gap Ratio (P1) and Income Gap Ratio (I), which describe the difference between the average income of the poor and the poverty line, and (3) Sen Poverty Index (P2) and FGT Index (P3), which represent the income/expenditure distribution among the poor.

Furthermore, Beik in Firstiana (2012) added that a moderate tool for analyzing poverty is the poverty gap ratio (P1), which measures the gap between the average income of the poor as a whole and the poor as a whole.

Poverty Severity Index
The distribution of expenditures by the poor is summarized by the Poverty Severity Index (P2). The disparity in spending among the impoverished increases with an index value. The variety of expenditures made by the impoverished in an area is ascertained using the Poverty Severity Index. Tambunan (2011) claims that the Poverty Severity Index illustrates how the impoverished divide their expenses.

RESEARCH METHOD

The research was carried out in Indonesia, with a focus on Papua. The decision to focus on the "Papua region" as a research topic was taken after careful analysis of the data acquired from BPS. In 2022, this region's poverty depth index will be the highest in Indonesia. This study utilized a descriptive analysis using SPSS version 27. The primary aim of this research is to examine the correlations in Papua between the poverty rates, the total population living in poverty, the measures of poverty depth, and the indices of poverty severity. After careful consideration, it can be concluded that correlation analysis was the most appropriate analytical method for this investigation. Widarjono (2015) states that the main objective of correlation analysis is to examine the characteristics and extent of a relationship between two variables. The goal of correlation analysis is to collect empirical evidence of the degree of a relationship between two variables, as well as information regarding the nature of that association. This evidence and information may be:
Description:

$$r = \frac{n\Sigma xy - \Sigma x\Sigma y}{\sqrt{[(n(\Sigma x^2) - (\Sigma x^2) - (\Sigma y^2)]}}$$

r   : Correlation coefficient
n   : Number of samples
xy   : Poverty Rate, Number of Poor People, Poverty Depth Index, Poverty Severity Index

Σ : Total sum

Once the correlation between these variables is known, the researcher will determine the implications of the correlation coefficient. The implications of the correlation are based on guidelines by Sugiyono (2017), as seen in Table 1.

Table 1. Correlation Coefficient Category

Correlation Coefficient	Relationship Level
0.00-0.199	Very low correlation
0.20-0.399	Low correlation
0.40-0.599	Medium correlation
0.60-0.799	Strong correlation
0.80-1.000	Very strong correlation

The research findings presented in Table 1 offer valuable insights into the correlation between various poverty indicators, namely the poverty rate, poverty headcount, poverty depth index, and poverty severity index. The interpretation of correlation coefficients reveals the strength of relationships among these variables. A correlation coefficient ranging from 0.00 to 0.199 suggests a very low correlation, indicating minimal association between the poverty-related metrics. When the coefficient falls within the range of 0.20 to 0.399, it signifies a low level of correlation, reflecting modest associations among the indicators. In contrast, coefficients ranging from 0.40 to 0.599 indicate a moderate correlation, suggesting more substantial connections between the poverty metrics. A coefficient between 0.60 and 0.799 points to a strong correlation, highlighting significant relationships between the variables. Finally, coefficients from 0.80 to 1.000 denote a very strong correlation, indicating robust associations among the poverty rate, headcount, depth index, and severity index. If all these poverty indicators are interrelated and consistent, then the government can only use one of the four indicators to overcome poverty in Papua. On the other hand, if there are no interrelationships between the poverty indicators, then the government must choose these indicators more carefully or use indicators other than those specified to overcome poverty in Papua.

RESULTS

Descriptive Analysis of Research Variables
The purpose of this study is to investigate the degree to which the many indices that are utilized to measure poverty, such as the poverty rate, the number of individuals who are living in poverty, the depth of poverty index, and the poverty severity index, are consistent with one another. 2002 was singled out for further investigation and evaluation, and it was brought to the forefront. Contrary to the trend of a consistent annual drop, the statistics that were shown earlier demonstrated fluctuations. The numbers for all indicators, on the other hand, show a steady declining tendency until the year 2020, which is a trend that is frequently referred to as a negative trend. Based on the results of the descriptive analysis, the results are shown in the following table.

Table 2. Descriptive Analysis of Research Variables

	N	Minimum	Maximum	Mean
AK	21	27.00	42.00	33.1429
JPM	21	709300.00	1028200.00	898254.2857
IKLM	21	5.00	12.00	8.4286
IKPM	21	2.00	5.00	3.2381

According to Table 2 above, it is known that in the variable poverty rate in Papua Province

in 2002-2022, the lowest poverty rate case with a ratio of 27% was in 2014, the highest poverty rate case with a ratio of 42% was in 2006, while in 2002-2022 the poverty rate in Papua was still fluctuating. The author sees that in the period 2002-2022, the poverty rate in Papua Province tends to decrease from 2016 to 2022.

In the variable number of poor people in Papua in 2002-2022, The lowest recorded figure of 709,300 individuals occurred in 2008, while the highest recorded figure of 1,028,200 individuals was seen in 2005. The mean ratio of impoverished individuals to one thousand inhabitants in Papua Province is 898,254. The author observes a decreasing trend that was noticeable during the period that spans from 2005 to 2020, based on the available data that pertains to the number of people living in poverty in Papua Province between the years 2002 and 2022. The time periods under consideration are 2008 as well as 2010–2012. The aforementioned problem can be attributed to the disparity that exists between the economic levels and population size within Papua Province.

In the poverty depth index in Papua Province for 2002-2022, the lowest poverty depth index case with a ratio of 5% was in 2022. Meanwhile, the highest poverty depth index case with a ratio of 12% was in 2006. A decrease in the poverty depth index was seen in the province of Papua during the course of the ensuing years. This convergence of the average spending of impoverished persons towards the poverty line and a reduction in expenditure disparity among the poor is indicative of a reduction in expenditure inequality. Between 2008 and 2014, a negative trend was detected in the poverty depth index, and a decline was recorded in this index in comparison to the data from earlier years.

The poverty severity index in Papua Province from 2002 to 2022 revealed that the lowest case of poverty severity index occurred in 2013, with a ratio of 2%. Meanwhile, in 2004, the poverty severity index reached its highest recorded level, with a ratio of 5%. In subsequent years, Papua had a decrease in the poverty severity index, indicating that the gap in spending among the poor is gradually moving towards a more equitable direction, thanks to an improvement in the welfare of the poor. The decline in the number of individuals residing in abject poverty within the province provided as concrete evidence of this phenomenon. Between 2002 and 2022, the poverty severity index had fluctuations. However, there was a notable decrease in the poverty severity index from 2010 to 2013.

Correlation between Poverty Rate and the Number of Poor People
The correlation coefficient between the poverty rate and the number of poor individuals is 0.856 > 0.05.

Table 3. Correlation between Poverty Rate and the Number of Poor People

Pearson Correlation	-0.042
Sig. (2-tailed)	0.856
N	21

Correlation between Poverty Rate and Poverty Depth Index
Based on the correlation coefficient of 0.000 <0.05, there is a statistically significant relationship between the poverty rate and the poverty depth index. This is exemplified by the fact that the latter has a value of 0.000. Given the positive association value of 0.785 for Papua Province, it is quite likely that a high poverty rate will be accompanied by a high poverty depth index. The correlation coefficient of 0.785 falls within the range of 0.60–0.799, suggesting a robust association between the two variables.

Table 4. Correlation between Poverty Rate and Poverty Depth Index

Pearson Correlation	0.785
Sig. (2-tailed)	0.000
N	21

Correlation between Poverty Rate and Poverty Severity Index
The significance of the correlation between the poverty rate and the poverty severity index is statistically significant at 0.008 <0.05. This indicates that there is a substantial association between the poverty rate and the poverty severity index. Papua Province's poverty severity index is also high if the poverty rate of the province is high. This is due to the fact that the correlation coefficient is positive (0.561), which indicates that the correlation is positive. The correlation is considered to be moderate due to the fact that the coefficient of correlation, which is 0.561, is within the range of 0.40-0.599.

Table 5. Correlation between Poverty Rate and Poverty Severity Index

Pearson Correlation	0.561
Sig. (2-tailed)	0.008
N	21

Correlation of the Number of Poor People with the Poverty Depth Index
The link between the number of individuals living in poverty and the poverty depth index is statistically insignificant since the significance value of 0.088 exceeds the threshold of 0.05. This suggests that there is no statistically significant correlation between the number of individuals living in poverty and the poverty depth index. The implication is that if the Papua Provincial government devises economic strategies to tackle poverty, these strategies must be created separately, one to control the number of impoverished individuals and the other to control the severity of the poverty index.

Table 6. Correlation of the Number of Poor People with the Poverty Depth Index

Pearson Correlation	-0.382
Sig. (2-tailed)	0.088
N	21

Correlation of the Number of Poor People with the Poverty Severity Index
The link between the number of impoverished poor people and the poverty severity index is substantial (p-value = 0.021 < 0.05). Because the correlation coefficient is negative (-0.500), a high number of poor people in Papua Province results in a low poverty severity index. Because the correlation value of -0.500 falls between 0.40 and 0.599, it is classified as moderate.

Table 7. Correlation of the Number of Poor People with the Poverty Severity Index

Pearson Correlation	-0.500
Sig. (2-tailed)	0.021
N	21

Correlation between Poverty Depth Index and Poverty Severity Index
The poverty depth index and poverty severity index show a significant association (p-value < 0.05). Given the positive connection coefficient (0.912), Papua Province's poverty severity index will also be high if its poverty depth index is high. The correlation coefficient of 0.912 falls between 0.80 and 1.000, indicating that the association is quite strong.

Table 8. Correlation between Poverty Depth Index and Poverty Severity Index

Pearson Correlation	0.912
Sig. (2-tailed)	0.000
N	21

DISCUSSION

The administration is still pursuing poverty as a problem, a talking point, and a political goal. Due to its multifaceted nature, poverty is impacted by a number of variables, two of which are unemployment and education levels. Because education, the capital of human resources, influences the formation of human character, which in turn influences the output of economic activity, education has an impact on the poverty rate. This indicates that there is no substantial association between the total number of individuals living in poverty and the poverty rate. The administration of the Papua Territory must use a diverse range of strategies in order to formulate an economic policy that effectively tackles poverty. These techniques should incorporate a reduction in the percentage of the population facing poverty, together with a targeted approach to lowering the overall poverty rate. These two methods should be employed in conjunction. This association implies that if the poverty index decreases, it will be in line with the Papua Provincial Government's aim to reduce the poverty rate. Put simply, the poverty strategy being used in the Papua Province has the ability to decrease both the overall poverty rate and the intensity of poverty as indicated by the poverty index. The study's results are consistent with Siregar's research (2006) which shows that economic growth is not only necessary but also enough to eliminate poverty.

This implies that growth needs to be distributed among all income levels, even the lowest ones. This directly implies that the industries where the impoverished are employed need to provide growth. It implies, indirectly, that the benefits of growth must be fairly redistributed by the government. Because of this association, the government of Papua Province's policy to lower the poverty rate will also likely result in a lower poverty index. Stated differently, Papua's poverty policy can lower both the country's poverty index and rate at the same time. Because of this association, the provincial government of Papua must exercise caution when selecting which of the two metrics to employ in formulating its program for ending poverty. Implementing a successful strategy to reduce the poverty rate may inadvertently lead to an increase in the poverty index. Due to this correlation, the implementation of any governmental initiative in Papua Province that targets poverty reduction is expected to result in a decrease in the poverty index. In other words, the poverty policy implemented in Papua Province has the ability to simultaneously reduce both the severity and depth indices of poverty.

After conducting a correlation test, the researchers found that the poverty rate indicator and the severity and depth of the poverty index have a positive association, meaning they move in the same direction. Consequently, the economic policies implemented by the Papua Province government have the potential to reduce the poverty rate, poverty severity index, and poverty depth index simultaneously. Consequently, if the Papua Provincial Government reduces the poverty rate, the depth and severity of the poverty index will correspondingly decrease. Furthermore, the poverty rate indicator and the poverty severity index exhibit only a negative association. This suggests that a decrease in the aggregate number of individuals living in poverty does not guarantee a comparable decrease in other indicators of poverty. Given that the poverty index does not exhibit the same pattern as other poverty indicators such as the poverty rate, poverty intensity index, and poverty severity index, there is a possibility that it will increase.

CONCLUSION

Based on the research findings and the outcomes of the talk, several conclusions can be drawn regarding poverty indicators in Papua Province from 2002 to 2022. Firstly, there appears to be no discernible association between the poverty rate indicator and the number of individuals living in poverty during this period. However, a notable correlation emerges between the poverty rate indicator and the poverty depth index, suggesting a positive relationship between 2002 and 2022. Additionally, there is a direct relationship between the poverty rate indicator and the poverty severity index in Papua Province, albeit with a low correlation coefficient. Contrarily, no significant association is found between the depth of the poverty index and the number of destitute individuals. Furthermore, a negative link is observed between the poverty severity index and the population of individuals living in poverty during the same timeframe. Notably, the correlation between the depth and severity of the poverty index in Papua Province is highly significant, characterized by a strong positive correlation coefficient.

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DECLARATION OF CONFLICTING INTERESTS
The authors declared no potential conflicts of interest.

REFERENCES

Aziz, A. A., Royani, R., & Syukriati, S. (2021). The implementation of family hope program in social protection and welfare in West Lombok. *Journal of The Community Development in Asia, 4*(3), 1-11. doi:10.32535/jcda.v4i3.1176

Central Agency of Statistics (BPS). (2024, January 25). *Indeks Kedalaman Kemiskinan (P1) Menurut Kabupaten/Kota (Persen), 2023*. Badan Pusat Statistik Provinsi Papua. Retrieved from https://papua.beta.bps.go.id/id/statistics-table/2/NDcjMg==/indeks-kedalaman-kemiskinan-p1-menurut-kabupaten-kota.html

Firstiana, D. (2012). Analisis indeks kemiskinan dengan menggunakan pendekatan FGT Index sesudah program ikhtiar (Studi kasus: Program Ikhtiar Masyarakat Mandiri di Desa Tegal dan Desa Babakan Sabrang, Kecamatan Ciseeng, Kabupaten Bogor). *Media Ekonomi, 20*(1), 63-82. doi:10.25105/me.v20i1.777

Kuncoro, M. (2006). *Ekonomika Pembangunan*, *Teori, Masalah, dan Kebijakan* (4th ed.). Yogyakarta: UPP STIM YKPN.

Nurwati, N. (2008). Kemiskinan: Model pengukuran, permasalahan dan alternatif kebijakan. *Jurnal Kependudukan Padjadjaran, 10*(1), 1.

Roring, G. D. J., & Rondonuwu, D. B. (2022). The effect of education and unemployment rate on poverty rate of 4 cities in North Sulawesi. *Journal of International Conference Proceedings, 5*(2), 212-221. doi:10.32535/jicp.v5i2.1686

Runtunuwu, P. C. H., & Kotib, M. (2021). Analysis of the effect construction costs, Human Development Index and investment: Does it have an impact on economic development?. *International Journal of Accounting & Finance in Asia Pasific, 4*(3), 100-113. doi:10.32535/ijafap.v4i3.1210

Saleh, S. (2002). Faktor-faktor penentu tingkat kemiskinan regional di Indonesia. *Economic Journal of Emerging Markets, 7*(2). doi:10.20885/ejem.v7i2.643

Siregar, H. (2006). Perbaikan struktur dan pertumbuhan ekonomi: Mendorong investasi dan menciptakan lapangan kerja. *Jurnal Ekonomi Politik dan Keuangan*.

Sugiyono, S. (2017), *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung:

Alfabeta.

Sukirno, S. (2005). *Makroekonomi Modern:Perkembangan Pemikiran Dari Klasik Hingga Keynesian Baru*. Jakarta: Raja Grafindo Pustaka.

Suryawati, C. (2005). Memahami kemiskinan secara multidimensional. *Jurnal Manajemen Pelayanan Kesehatan, 8*(03). doi:10.22146/jmpk.v8i03.2927

Tambunan, T. T. H. (2011). *Perekonomian Indonesia: Kajian Teoritis dan Analisis Empiris.* Jakarta: Ghalia Indonesia

The World Bank. (n.d.). *Understanding Poverty*. The World Bank. accessed from Retrieved from https://www.worldbank.org/en/topic/poverty

Todaro, M. P., & Smith, S. C. (2006). *Pembangunan Ekonomi di Dunia Ketiga* (11th ed.). Jakarta: Erlangga.

Uwizeye, D., Irambeshya, A., Wiehler, S., & Niragire, F. (2022). Poverty profile and efforts to access basic household needs in an emerging city: a mixed-method study in Kigali's informal urban settlements, Rwanda. *Cities & Health, 6*(1), 98-112. doi:10.1080/23748834.2020.1764301

Widarjono, A. (2015). *Statistika Terapan Dengan Excel dan SPSS*. Yogyakarta: UPP STIM YKPN.