

The Resource-Rich Region Paradox: Education Gaps and Local Employment Opportunities in Teluk Bintuni Regency

Syahid Muzaat^{1*}, Fardan Abdillah M.^{2*}

^{1,2}Institut Agama Islam Negeri Sorong, Indonesia

*Corresponding author: fardhan289@gmail.com

ARTICLE INFO

Article history

Received August 24, 2026

Revised September 27, 2026

Accepted October 24, 2026

Keywords: Education gap, Indigenous Papuans, Local employment, Resource curse, Teluk Bintuni

ABSTRACT

Teluk Bintuni Regency in West Papua ranks among Indonesia's richest regions by gross regional domestic product (GRDP) per capita, yet a quarter of its population is poor. This study examines how education gaps shape local people's access to employment in an economy dominated by the Tangguh liquefied natural gas (LNG) project. It uses a qualitative case study based on document analysis of official statistics for 2023–2025, regional government documents, an independent panel report on Tangguh, special autonomy regulations, and published field studies, cross-checked through source triangulation. Three linked findings emerge. First, GRDP per capita of IDR 574.98 million in 2024, about seven times the national figure, coexists with a poverty rate of 25.34 percent in 2025. Second, mean years of schooling are 8.77 years and about 7 percent of residents hold post-secondary qualifications, whereas long-term LNG jobs number fewer than 2,000 and require certified skills. Third, oil and gas revenue earmarked for education has not yet been converted into educational capability. These relationships are associations rather than causal estimates, and the data are not disaggregated by tribe. The study contributes a three-layer framework linking enclave production, educational capability, and fiscal governance, from which policy directions are derived.

1. INTRODUCTION

Natural resource wealth is often regarded as the main asset for regional prosperity. However, the experience of many countries shows that resource abundance does not automatically translate into broadly shared prosperity. Economies that rely on natural resource exports have tended to grow more slowly and to underinvest in education, a phenomenon known as the resource curse (Gylfason, 2001; Sachs & Warner, 2001). More recent literature reviews confirm that the empirical evidence on this phenomenon is mixed and depends heavily on the observation period, the measure of resource dependence, the scale of analysis, and the quality of institutions (Alssadek & Benhin, 2023; Dou, Yue, Xu, Wei, & Li, 2022). Findings in Indonesia are likewise inconsistent. A provincial panel analysis found signs of a resource curse whose negative effect can be mitigated by financial deepening (Ridena, Nurarifin, Hermawan, & Komarulzaman, 2021), whereas a national time-series analysis concluded that natural resources contribute positively to economic growth (Wahyudi & Palupi, 2023). These differences suggest that the resource paradox is better examined at the local level, where extraction takes place and where communities experience its consequences directly. Teluk Bintuni Regency in West Papua Province is one of the most striking examples of this paradox. The regency hosts the Tangguh liquefied natural gas (LNG) plant, whose capacity has been expanded through the *Tangguh Expansion Project*, also known as Train 3 (Tangguh Independent Advisory Panel, 2023). In 2024, Teluk Bintuni's gross regional domestic product (GRDP) per capita at current prices reached IDR 574.98 million, up from IDR 438.81 million in the previous year (Garda Papua, 2025). This figure is more than seven times Indonesia's gross

domestic product (GDP) per capita in the same year, which stood at IDR 78.62 million (Kamalina, 2025). Nevertheless, the share of the regency's population living in poverty was still 25.34 percent in 2025 (Katadata Insight Center, 2026b), almost three times the national rate of 8.47 percent (Badan Pusat Statistik, 2025). Teluk Bintuni's Human Development Index (HDI) in 2024 was only 69.79, which remains in the medium category (Pemerintah Kabupaten Teluk Bintuni, 2025). The paradox concerns not only economic figures but also the relationship between education and employment. Modern extractive industries are capital-intensive, so the direct jobs they create are relatively few and mostly require specialised technical skills (Dietsche, 2020). Such economies tend to form enclaves, that is, production pockets that are secured and tightly connected to global capital networks but spatially and socially separated from surrounding communities (Ferguson, 2005). At the subnational level in Indonesia, natural resource revenue-sharing funds have not been shown to drive economic growth in regencies and cities (Hidayat et al., 2024); they have no significant effect on poverty overall and are even associated with higher poverty in some regions (Nurmala, Hartono, & Sumiyati, 2025). Households in mineral-dependent districts also face a higher risk of illness without improvements in basic health services (Pramudianti, Papyrakis, & Rieger, 2024).

In such an economy, education functions as a filter that determines who can enter the extractive sector. Resource rents can create a false sense of security that leads to neglect of investment in human capital (Gylfason, 2001), even though labour demand in extractive industries is concentrated in specific technical skills (Dietsche, 2020). Local content policies are designed to bridge this gap, but their benefits are limited when enforcement is weak and local capacity is low (Gbadago, 2025). In Indonesia, the *link and match* policy in vocational education has likewise not fully resolved the mismatch between graduates' skills and industry needs (Ningrum, 2025). The relationship between resource windfalls and education can also run in two directions: oil royalty transfers have been shown to increase primary and secondary school completion but to reduce tertiary enrolment, because rising labour demand raises the opportunity cost of staying in school (Acuna, Balza, & Gomez-Parra, 2024). The problem is that studies of educational development in the Land of Papua show that two decades of special autonomy have not produced education services that are equitable and responsive to the geographical, social, and cultural conditions of Indigenous communities (Afriansyah, 2022; Kusumaningrum & Muslim, 2023). Barriers such as teacher shortages and uneven teacher distribution, limited infrastructure, a curriculum that lacks contextual relevance, poverty, and even armed conflict persist to this day (H. Setiawan & Choirunnisa, 2026; Simbolon, Murniarti, & Simbolon, 2026). Normatively, the special autonomy framework allocates 35 percent of oil and gas revenue-sharing funds (DBH) to education spending and 10 percent to the empowerment of Indigenous communities (Pemerintah Republik Indonesia, 2021). However, the implementation of special autonomy is still constrained by communication, resources, implementer disposition, and bureaucratic structure (Salmawati, Purnomo, Ula, Rais, & Ikhwan, 2024), while the quality of the personnel managing the budget contributes to the low absorption of funds (Manibuy, Fitriani, & Teturan, 2025). The education finance literature likewise stresses that the size of funding improves service quality only when accompanied by equitable distribution, transparency, accountability, and adequate managerial capacity (El Famoës, Arifin, & Sutrisno, 2026). Several studies have addressed parts of this problem. In West Papua, GRDP at the regency/city level is in fact positively associated with poverty, which has been interpreted as a reflection of the unequal distribution of growth (Yulianti & Projo, 2025). In Teluk Bintuni itself, realized special autonomy spending on education and the people's economy has been shown to have a positive effect on the HDI over 2011–2021 (Fimbay, Salle, & Hafizrianda, 2026), while a migration study in the villages around the Tangguh project found that migrants captured most production and service jobs, pushing Indigenous residents to the margins (Setiadi & Sumini, 2023).

Studies in other regions reveal similar patterns: large-scale industrial operations reshape the socio-economic structure of coastal communities (Damayanti, Fadlurrohman, & Osira, 2026), dominant development narratives in resource downstreaming tend to marginalise local perspectives (Siregar & Shu'udin, 2026), and the socio-economic relations of Papuan Indigenous communities are shaped by land scarcity and the role of customary institutions (Amatullah et al., 2026).

Taken together, these studies leave four gaps. First, they examine one dimension at a time: special autonomy spending and the HDI (Fimbay et al., 2026), migration and job competition around the Tangguh project (Setiadi & Sumini, 2023), or GRDP and poverty across regencies (Yulianti & Projo, 2025). None of them explains why very high output, earmarked revenue, and low open unemployment can coexist with high poverty in the same regency. Second, much of the local evidence covers periods before the Tangguh expansion project entered its operational phase, such as 2011–2021 for fiscal spending (Fimbay et al., 2026) and fieldwork from the late 2000s and early 2010s for migration (Setiadi & Sumini, 2023), so the post-construction labour market has not yet been examined. Third, studies of special autonomy governance focus on implementation and budget absorption (Manibuy et al., 2025; Salmawati et al., 2024) but do not trace how these constraints connect with residents' educational capability and their access to industrial jobs. Fourth, most public indicators are not disaggregated by Indigenous status or tribe, so the conditions of Indigenous communities are usually inferred from regency averages, a problem that the principles of Indigenous data governance explicitly highlight (Carroll et al., 2020). The novelty of this article lies in combining these dimensions in a single three-layer analytical framework, consisting of the enclave economic structure, the educational capability of the population, and fiscal and affirmative governance, and in applying it to post-expansion data for 2023–2025. The framework contributes in two ways. Conceptually, it treats the paradox as the outcome of interactions between layers rather than of any single factor, so it can show how a large production base, a thin layer of credentialed local workers, and unimplemented revenue rules reinforce one another. Methodologically, it separates the links that are supported by the available data from those that remain hypotheses, which makes the framework testable in future research with primary and disaggregated data. The study is also urgent because, once the construction phase of the expansion project is over, Tangguh operations are expected to require fewer than 2,000 employees, almost all of whom must hold skills credentials (Tangguh Independent Advisory Panel, 2023), while Papua's 70 percent share of oil and gas DBH will fall to 50 percent from 2042 (Pemerintah Republik Indonesia, 2021). Accordingly, this study addresses three questions: (1) how wide is the gap between economic output and welfare indicators in Teluk Bintuni after the expansion project; (2) how does the education gap relate to local people's access to employment in the LNG economy; and (3) how far has the governance of oil and gas revenue-sharing funds converted resource revenues into educational capability and employment opportunities, and which policy directions follow from this?

2. METHODS

This study uses a qualitative approach with a descriptive-analytical case study design based on document analysis (Morgan, 2022). Teluk Bintuni Regency was purposively selected as the case because it shows an extreme contrast between very high per capita economic output and a high poverty rate, so that the mechanisms of the resource paradox can be clearly observed. The regency is located in West Papua Province and hosts the Tangguh LNG plant. The focus of analysis is the position of local communities, namely Indigenous Papuans and the customary communities living around Bintuni Bay, in the regional economy, with the regency as the unit of analysis. Because the study is document-based, these communities are examined through the statistics and documents that describe them rather than through direct engagement. The study uses secondary data collected

through documentation in October 2026. The data sources fall into five groups. The first group consists of official statistics from Statistics Indonesia (BPS) and civil registration data published through regional government documents, namely the Regent Regulation on Key Performance Indicators 2025–2029 and the Regent’s Accountability Report (LKPJ) for the 2024 fiscal year, as well as through the public data portal Databoks. The second group is the 2023 report of the *Tangguh Independent Advisory Panel* (TIAP), an independent panel that evaluates the implementation of the Tangguh project’s social commitments, including its employment commitments. The third group consists of regulations, particularly Government Regulation Number 107 of 2021. The fourth group consists of relevant peer-reviewed journal articles, most of them published in 2021–2026. The fifth group consists of published field studies in Teluk Bintuni that record the views of local and Indigenous residents: a study of migration and livelihoods in the villages around the Tangguh project (Setiadi & Sumini, 2023), a case study of the implementation of the regency regulation on the recognition of Indigenous peoples, based on interviews with 11 informants including the Sebyar tribal chief in October–November 2024 (Merina & Bawulang, 2025), and a study of the political culture of the Moskona tribe (Wahid, Mardiyah, Ula, Purwanti, & Subhan, 2025). The TIAP report also summarises the panel’s March 2023 meetings with north shore village leaders, Papuan business owners, apprentices, and civil society organisations (Tangguh Independent Advisory Panel, 2023). The indicators analysed include GRDP per capita, the sectoral structure of GRDP, the poverty rate, the HDI, mean years of schooling, expected years of schooling, the educational composition of the population, the open unemployment rate, and the composition of the Tangguh project workforce, covering the years 2023–2025. Data were analysed using a three-layer framework derived from the literature review (Figure 1). The first layer is the enclave economic structure, which generates high value added but absorbs little local labour. The second layer is the educational capability of the population, which determines the ability of local people to enter high value-added jobs. The third layer is fiscal and affirmative governance, which should convert resource revenues into education services and economic opportunities.

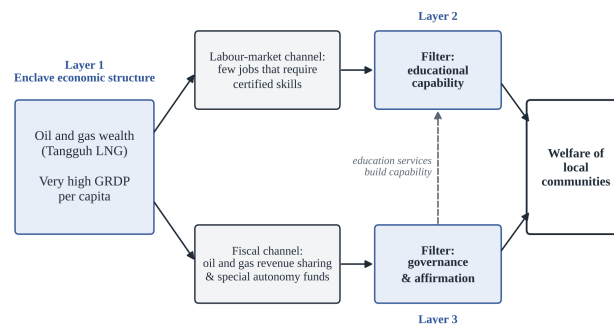


Figure 1. Analytical Framework of the Resource-Rich Region Paradox
Source: Compiled by the authors based on the literature review (2026).

Data were analysed interactively in three stages. In the data reduction stage, indicators and information were sorted into the three layers of the analytical framework, namely economic structure, educational capability, and governance. In the data display stage, the data were presented in tables and figures comparing Teluk Bintuni’s indicators with benchmark values. In the conclusion-drawing stage, the emerging patterns were interpreted using the concepts of the resource curse, the enclave economy, and human capital, and then compared with the findings of previous studies. Data credibility was maintained through source triangulation, that is, by cross-checking the same figure across more than one document. Where discrepancies were found, each figure was traced to its source, checked for consistency with related data, and compared with

compilations of BPS publications. The most consequential discrepancy concerns GRDP per capita in 2024 (Table 1).

Table 1. Cross-Check of GRDP per Capita Figures for Teluk Bintuni Regency

Source	Year	GRDP per capita (IDR million)	Consistency check
Appendix of the Regent Regulation on key performance indicators (Pemerintah Kabupaten Teluk Bintuni, 2025)	2024	474.98	Total GRDP of IDR 52.36 trillion divided by this figure implies about 110,000 residents
Regent's Accountability Report (LKPI), fiscal year 2024 (Garda Papua, 2025)	2024	574.98	Implies about 91,000 residents
Databoks compilation of BPS publications (Katadata Insight Center, 2026a)	2024	574.98	Reported together with the same total GRDP of IDR 52.36 trillion
Databoks, Katadata Insight Center (Katadata Insight Center, 2026c)	2025	621.18	Continues the upward trend from the 2024 level
Civil registration, December 2024 (Katadata Insight Center, 2025a)	2024	–	Population benchmark of about 84,000 residents

Source: Compiled by the authors from the documents listed (2026).

The figure of IDR 574.98 million is used in this article because it appears in two independent documents, is reported together with the same total GRDP in a compilation of BPS publications, and is consistent with the 2025 figure. The lower figure in the Regent Regulation is most likely a transcription error, since it implies a population about 30 percent larger than the civil registration count. A sensitivity check shows that the choice does not change the conclusion: GRDP per capita is about 6.0 times the national GDP per capita of IDR 78.62 million (Kamalina, 2025) if the lower figure is used and about 7.3 times if the higher figure is used. The design has three limitations that shape how the findings should be read. First, no primary data were collected, so the lived experiences of Indigenous communities are represented only indirectly, through the field studies and the panel report listed above; these sources reflect the questions and informants chosen by their authors and cannot be generalised to all tribes. Second, publicly available data are generally not disaggregated by Indigenous Papuan status or by tribe, and the indicators come from different years and sources. Third, the design can identify co-occurring patterns and plausible mechanisms but cannot establish cause-and-effect relationships. These limitations are taken into account in interpreting the findings and are restated in the conclusion.

3. RESULTS AND DISCUSSION

RESULTS

This section presents the results of the secondary data analysis for Teluk Bintuni Regency for 2023–2025. The results follow the three layers of the analytical framework, while their interpretation is set out in the discussion. Because the indicators refer to different reference years and come from different types of sources, they are compared as orders of magnitude rather than as a single time series, and the year and source of each indicator are shown explicitly (Table 2).

3.1 Portrait of the Paradox: Statistical Prosperity and Persistent Poverty

Table 2 summarises the main economic and social indicators of Teluk Bintuni Regency together with their benchmarks, reference years, and sources. The sharpest contrast appears

between GRDP per capita and the poverty rate. Teluk Bintuni's GRDP per capita is about 7.3 times the national GDP per capita, yet its poverty rate is about three times the national rate.

Table 2. Economic and Social Indicators of Teluk Bintuni Regency

No.	Indicator (reference year)	Teluk Bintuni	Benchmark (year)	Source
1.	GRDP per capita at current prices, 2024 (IDR million)	574.98	78.62 (national GDP per capita, 2024)	(Garda Papua, 2025; Kamalina, 2025; Katadata Insight Center, 2026a)
2.	Share of manufacturing in GRDP at current prices, 2023 (%)	56.85	–	(Katadata Insight Center, 2025b)
3.	Poverty rate, 2025 (%)	25.34	8.47 (national, March 2025)	(Badan Pusat Statistik, 2025; Katadata Insight Center, 2026b)
4.	Human Development Index, 2024	69.79	70.00 (lower bound of the high category)	(Pemerintah Kabupaten Teluk Bintuni, 2025)
5.	Mean years of schooling, 2025 (years)	8.77	8.07 (West Papua); 9.07 (national), 2025	(Katadata Insight Center, 2026d)
6.	Expected years of schooling, 2024 (years)	12.62	12.44 (Teluk Bintuni, 2023)	(Garda Papua, 2025)
7.	Open unemployment rate, 2024 (%)	2.22	3.52 (Teluk Bintuni, 2023)	(Garda Papua, 2025)

Source: Compiled by the authors from the sources listed in the last column. Indicators refer to different years and are compared as orders of magnitude.

Teluk Bintuni's economic structure is highly concentrated. Manufacturing, which in this regency is dominated by the processing of gas into LNG, accounted for 56.85 percent of GRDP at current prices in 2023, followed by mining and quarrying (Katadata Insight Center, 2025b). In 2024, the economy reportedly grew by 29.22 percent at constant prices (Garda Papua, 2025), shortly after the construction phase of the Tangguh expansion project neared completion (Tangguh Independent Advisory Panel, 2023). The poverty rate has indeed fallen from its peak of 51.91 percent in 2009 to 25.34 percent, or about 18,480 people, in 2025 (Katadata Insight Center, 2026b), but the 2025 figure remains slightly above the regional government's target of 25.00 percent for that year (Pemerintah Kabupaten Teluk Bintuni, 2025). The Tangguh independent panel noted that Teluk Bintuni ranks second nationally in per capita fiscal transfers, yet it is also among the regions with the highest poverty rates (Tangguh Independent Advisory Panel, 2023). Meanwhile, the open unemployment rate was only 2.22 percent in 2024, down from 3.52 percent in 2023 (Garda Papua, 2025).

3.2 Educational Attainment and Quality

The mean years of schooling of the population aged 25 and over in Teluk Bintuni was 8.77 years in 2025, up from 8.67 years in 2024 (Garda Papua, 2025; Katadata Insight Center, 2026d). This is higher than the West Papua provincial average (8.07 years) but still below the national average (9.07 years) (Katadata Insight Center, 2026d). In other words, the average adult has not completed junior secondary school. By contrast, the expected years of schooling of school-age children reached 12.62 years in 2024 (Garda Papua, 2025). There is thus a gap of almost four years between expected and mean years of schooling. The same picture emerges from the educational composition of the population based on civil registration data (Figure 2). As of December 2024, residents who had completed tertiary education, from diploma to doctorate, accounted for only about 7.1 percent of the total population, while senior secondary graduates accounted for 21.72 percent (Katadata Insight Center, 2025a). The no/not yet schooling category (27.72 percent)

includes children who have not reached school age and therefore cannot be read as a dropout rate. Nevertheless, the shares of residents who did not complete primary school (13.83 percent) and who completed only primary school (16.06 percent) reveal a large group with very limited education for entering formal jobs in the industrial sector. In terms of quality, the literacy rate was recorded at 98.28 percent in 2024 (Garda Papua, 2025). However, the Tangguh independent panel noted that retaining teachers in schools around the project area remains difficult and that progress in education services on the north shore of the bay has been minimal (Tangguh Independent Advisory Panel, 2023).

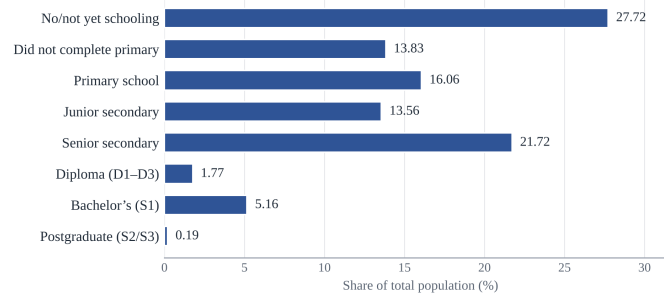


Figure 2. Population of Teluk Bintuni Regency by Educational Attainment, December 2024

Note: The no/not yet schooling category includes children who have not reached school age.

Source: Civil registration data, compiled from (Katadata Insight Center, 2025a).

3.3 The Structure of Labour Demand in the LNG Industry

On the demand side, Table 3 summarises employment data for the Tangguh project based on the independent panel's 2023 report. The panel reports workers mainly by origin rather than by tribe: "Papuan" refers to workers from anywhere in the Land of Papua, while a narrower category of Indigenous People (IP) is reported for only a few indicators. Table 3 therefore distinguishes the two categories, and neither represents the seven tribes of the Bintuni Bay area specifically.

Table 3. Employment Indicators of the Tangguh LNG Project, 2023

Aspect	Indicator	Value
Operations (as of March 2023)	Workers of Papuan origin in the operations workforce	72%
	Papuan skilled workers	61% (460 people)
	Papuan managers and supervisors	42% (73 people)
Expansion project (Train 3)	Post-pandemic peak construction workforce	±12,500 people
	Papuans employed since 2016	>5,400 people
	Papuan share of skilled workers and managers	±9% and ±6%
	Indigenous People (IP) workers still employed at the time of the panel's visit	278 people
	Workers from Bintuni and Fakfak	395 people
	Planned demobilisation by mid-2023	±6,000 people, including 1,271 Papuan workers
Outlook and commitments	Workforce needed after construction	<2,000 people, almost all credentialed
	AMDAL target for Papuan workers by 2029	85% (including supervisors and managers)
	Papuan technician apprenticeship programme	>100 trained; programme discontinued

Source: Compiled from (Tangguh Independent Advisory Panel, 2023). Note: "Papuan" follows the panel's definition (origin anywhere in the Land of Papua) and is not specific to the Indigenous communities of Bintuni Bay; tribe-level figures are not reported.

These data reveal three things. First, the category of Papuan workers is broad because it includes residents from many regencies in the Land of Papua, so it is not identical to Indigenous

Papuans, let alone to the customary communities of the seven tribes of the Bintuni Bay area. At the time of the panel's visit, 278 workers classified as Indigenous People were still employed on the expansion project, while workers from Bintuni and Fakfak numbered 395 (Tangguh Independent Advisory Panel, 2023), small numbers compared with the construction peak of about 12,500 workers. Even the IP category does not show which tribes benefit, so the distribution of jobs among customary communities, including those on the north shore, cannot be assessed from the available data. Second, large-scale employment is temporary and concentrated in the construction phase, with the Papuan share of skilled workers and managers on the expansion project at only about 9 percent and 6 percent. Third, long-term jobs are very limited and require credentials; the panel judged that very few new long-term jobs would be available to local Indigenous people. The Papuan technician apprenticeship programme, which trained more than one hundred people, most of whom now work as skilled technicians, was discontinued because of limited openings (Tangguh Independent Advisory Panel, 2023).

3.4 The Fiscal Framework and the Governance of Revenue-Sharing Funds

The special autonomy framework gives Papua a 70 percent share of oil and natural gas DBH until 2041 and 50 percent from 2042. Its use is earmarked affirmatively: 35 percent for education spending, 25 percent for health and nutrition, 30 percent for infrastructure, and 10 percent for assistance to empower Indigenous communities (Pemerintah Republik Indonesia, 2021). However, the Tangguh independent panel noted that the portion of DBH whose distribution is to be regulated through a special regional regulation (Perdatus) has not been implemented for more than a decade and has become the first and primary cause of political complaint in Teluk Bintuni. The same panel judged that these revenues have not yet been spent on improving the lives of Papuans, and pointed to the need for implementing regulations governing allocations to each of the seven tribes, limits on use, and accountability (Tangguh Independent Advisory Panel, 2023).

DISCUSSION

Before the findings are interpreted, two cautions are necessary. First, the relationships discussed below are inferred from the co-occurrence of indicators within one regency and from their consistency with earlier studies; they are associations and plausible mechanisms, not estimated causal effects. Other factors, such as geographical remoteness, the timing of population data, and the presence of skilled workers from outside the region, may also contribute to the patterns observed. Second, the perspectives of Indigenous communities are drawn from published field studies rather than from this study's own fieldwork. Statements that go beyond the data are therefore presented as interpretations. The findings on the economic structure layer show that the high GRDP per capita must be interpreted with caution. GRDP measures the value added produced within a territory, not the income received by its residents. In an enclave economy, most value added flows out of the region in the form of shareholder profits, investment cost recovery, state revenues, and the wages of skilled workers, some of whom come from outside the region (Ferguson, 2005). Teluk Bintuni's GRDP per capita is therefore better read as a measure of production intensity than as a measure of welfare. This finding is consistent with a panel analysis in West Papua showing that high GRDP does not automatically reduce poverty when its distribution is unequal (Yulianti & Projo, 2025), and with evidence that natural resource revenue-sharing funds do not by themselves drive growth or reduce poverty (Hidayat et al., 2024; Nurmala et al., 2025). However, in line with recent literature, this does not mean that resource wealth is inevitably a curse; outcomes depend heavily on the quality of the institutions and policies that accompany it (Alssadek & Benhin, 2023; Dou et al., 2022). The fact that Teluk Bintuni is among the largest recipients of per capita fiscal transfers suggests that the problem does not lie in a shortage of

financial resources. The low open unemployment rate cannot be taken directly as evidence of decent work. Conceptually, a person who worked for at least one hour in the previous week is classified as employed, so residents engaged in subsistence farming, traditional fishing, or low-income informal work are not counted as unemployed. In a regency with a poverty rate above 25 percent, low open unemployment more likely reflects underemployment and low-productivity work than successful job creation. An analysis in West Papua even found that the open unemployment rate is negatively associated with poverty (Yulianti & Projo, 2025), suggesting that this indicator is not sensitive to job quality in the region.

In the capability layer, the results are consistent with the view that education acts as a filter on job access. The gap between expected and mean years of schooling indicates intergenerational improvement in access, but the current stock of adult workers is largely poorly educated. This condition meets an industrial labour demand concentrated in specialised technical skills (Dietsche, 2020). Reaching 72 percent Papuan workers in operations and 42 percent in managerial and supervisory positions is a noteworthy achievement, but it rests on a small employment base and is therefore insufficient to change the livelihood structure of tens of thousands of residents. This finding is consistent with a migration study around the Tangguh project showing that migrants were better able to take up the production and service opportunities that grew around the project, while Indigenous residents were marginalised (Setiadi & Sumini, 2023). The discontinuation of the apprenticeship programme also shows that training pathways tied to a single company are vulnerable to that company's hiring cycle. The education quality barriers recorded in Teluk Bintuni, particularly the difficulty of retaining teachers, are consistent with studies in the interior of Papua showing that teacher shortages and uneven distribution, limited infrastructure, a curriculum that lacks contextual relevance, and extreme geography are the main obstacles (Simbolon et al., 2026). Even after two decades of special autonomy, education quality and literacy outcomes in the Land of Papua remain low, with wide gaps between the interior and administrative centres (Afriansyah, 2022; H. Setiawan & Choirunnisa, 2026). Project labour market dynamics may also affect young people's educational decisions. Evidence from oil-producing areas in Ecuador shows that rising labour demand can reduce tertiary enrolment because the opportunity cost of schooling increases (Acuna et al., 2024). In Teluk Bintuni, a temporary construction boom may create a similar dilemma: young people are attracted by short-term wages but lose the chance to obtain the qualifications needed for long-term jobs. This conjecture cannot be tested with the available data and requires further research. In the governance layer, the affirmative design of oil and gas DBH does have leverage. Evidence from Teluk Bintuni shows that realized special autonomy spending on education has a positive effect on the HDI, while spending on health and infrastructure has no significant effect (Fimbay et al., 2026). The effectiveness of the funds thus depends heavily on the accuracy of allocation and on the regional government's ability to turn spending into human development outcomes. The absence of DBH implementing regulations, the constraints on implementing special autonomy (Salmawati et al., 2024), and the limited capacity of budget-managing personnel (Manibuy et al., 2025) are plausible reasons why the available funds have not yet been converted into capabilities. A performance-based funding model, which links allocations to service outcomes and demands transparency and accountability, is relevant for education spending financed by DBH (El Famoos et al., 2026). Lessons from a discourse analysis of nickel downstreaming also show that development narratives dominated by a state–corporate alliance tend to limit public participation (Siregar & Shu'udin, 2026), while a study in Bengkulu shows that the presence of large industry can reduce fish catches and weaken the social cohesion of coastal communities (Damayanti et al., 2026). Both findings warn that the participation of Indigenous communities and the protection of coastal livelihoods must be a core part of resource governance in Teluk Bintuni.

3.5 Community Perspectives and Policy Implementation

Published field studies and the independent panel report allow the community side of the paradox to be examined, although indirectly. In the villages around the Tangguh project, a migration study based on interviews with residents found that Indigenous residents felt that life became harder as more migrants arrived, because newcomers were better placed to take up production and service work (Setiadi & Sumini, 2023). In 2023, the independent panel, after meeting north shore village leaders, identified the unimplemented *Perdatus* on DBH as the first and primary cause of political complaint in the area; most village leaders were disappointed with special autonomy, and because government programmes and company commitments are easily confused, part of this disappointment was directed at the company (Tangguh Independent Advisory Panel, 2023). The same report recorded tensions over the slow delivery of housing and electricity in north shore villages, with only 97 of the 456 required houses completed as of March 2023, as well as difficulty in retaining teachers and slower progress on a flagship secondary school on the north shore than on the south shore, which the panel noted increases perceived disparities. Fishing remains the main commercial activity, and local cooperatives that supply the plant's catering are valued as a tangible benefit (Tangguh Independent Advisory Panel, 2023). Evidence on the implementation of the regency regulation on the recognition of Indigenous peoples in Tomu village points in the same direction. Interviews with the Sebyar tribal chief, officials, and community members show that the chief acts as policy formulator, rights negotiator, conflict mediator, and initiator of infrastructure, and that the regulation's success depends on his social legitimacy and on the socio-cultural conditions of the community; the main obstacles are weak administrative capacity, limited infrastructure, low corporate commitment to local culture, and shifting values among young people (Merina & Bawulang, 2025). A study of the Moskona likewise shows that tribal chiefs retain strong legitimacy in local politics (Wahid et al., 2025). Taken together, these accounts suggest that local communities experience the paradox less as a shortage of money than as a gap between promised benefits and visible services, and that customary leadership is a resource that existing programmes underuse. Because these accounts come from a small number of studies and informants, this reading should be treated as an interpretation to be tested in direct fieldwork. Table 4 compares the main policy instruments with the available evidence on their implementation. The pattern is similar across instruments: the normative design is in place, but the rules, data, and institutions needed to deliver benefits specifically to Indigenous communities are weak or missing.

Table 4. Policy Instruments, Implementation Evidence, and Implications

Instrument	Intended outcome	Implementation evidence	Implication
Special autonomy earmarks of oil and gas DBH (Pemerintah Republik Indonesia, 2021)	35% for education and 10% for the empowerment of Indigenous communities	<i>Perdatus</i> on distribution to the seven tribes not implemented for more than a decade; revenues not yet visible in local services (Tangguh Independent Advisory Panel, 2023)	Funds exist, but rules on allocation, limits on use, and accountability are missing
Special autonomy education spending	Higher human development	Positive association with the HDI in 2011–2021 (Fimbay et al., 2026); absorption constrained by personnel capacity and implementation factors (Manibuy et al., 2025; Salmawati et al., 2024)	Outcomes depend on allocation accuracy and management capacity
AMDAL target for Papuan workers	85% Papuan workers by 2029, including supervisors and managers	72% of the operations workforce, but about 9% of skilled and 6% of managerial jobs on the expansion project (Tangguh Independent Advisory Panel, 2023)	The target is set for Papuans in general, not for Indigenous communities or tribes

Instrument	Intended outcome	Implementation evidence	Implication
Papuan technician apprenticeship	A pipeline of certified local technicians	More than 100 trained, most now skilled technicians; discontinued because of limited openings (Tangguh Independent Advisory Panel, 2023)	Training tied to one company's hiring cycle
Regency regulation on the recognition of Indigenous peoples	Recognition and protection of customary communities	Depends on the tribal chief's legitimacy; hindered by weak administrative capacity and low corporate commitment to local culture (Merina & Bawulang, 2025)	Customary institutions can be partners but need administrative support

Source: Compiled by the authors from the sources cited in the table (2026).

These findings have theoretical and practical implications. Theoretically, they support the view in recent literature that resource outcomes depend on institutions rather than on resource abundance as such (Alssadek & Benhin, 2023; Dou et al., 2022), and they add that at the local level the relevant institutions include not only fiscal rules but also the pathway from education to employment and the role of customary leadership. Practically, they indicate that additional funding alone is unlikely to resolve the paradox unless implementing regulations, disaggregated data, and local delivery capacity are put in place. This is the basis for the policy directions below.

3.6 Policy Directions: From an Enclave Economy to Stronger Local Capabilities

Based on these three layers of findings, policy directions for resolving the Teluk Bintuni paradox can be formulated in four complementary groups. Table 5 summarises the links between the findings and the policy directions.

Table 5. Linking Findings to Policy Directions

Layer of the paradox	Main findings	Policy directions	Key actors
Enclave economic structure	GRDP per capita of IDR 574.98 million, concentrated in the LNG industry; poverty at 25.34%	Local economic diversification beyond oil and gas; development of local suppliers	Regional government, companies, local businesses
Educational capability	Mean years of schooling of 8.77; tertiary education $\pm 7\%$; fewer than 2,000 long-term credentialed jobs	Contextual basic education, equivalency programmes, vocational and certification pathways	Education office, schools, PKBM, universities, industry
Fiscal and affirmative governance	DBH allocations for education and Indigenous communities exist, but implementing regulations and absorption are inadequate	DBH implementing regulations, performance-based and partnership funding, data disaggregated by Indigenous status, pentahelix and customary collaboration	Provincial and regency governments, DPRK, customary institutions, civil society

Source: Compiled by the authors (2026).

First, contextual basic and secondary education. Improving the quality of basic and secondary education is the long-term foundation. The required policies include strengthening teacher capacity and distribution, a local-content curriculum relevant to the local natural and cultural environment, adaptive school infrastructure, and the use of distance learning technology in hard-to-reach areas (Kusumaningrum & Muslim, 2023; Simbolon et al., 2026). Documentation of mother tongues can provide a basis for culturally relevant teaching materials for customary communities (Qalyubi, Widiastuty, Adlina, & Misrita, 2026), so the languages and local knowledge of the tribes of Teluk Bintuni deserve to be integrated into local-content subjects. Teacher competence is also strengthened more effectively through practice-based learning, as

shown among prospective teachers in Nabire, Papua (Tahanina, Nurichsan, Nurhidayati, Kafara, & Hasibuan, 2026). For young people and adults who have already dropped out, the Package B and Package C equivalency programmes should be expanded with supportive learning environments (Rofi'atunnisa, Nurihsan, & Dahlan, 2026), alongside scholarships and transport support for students from remote villages (Sari & Riansi, 2024). Second, industry-linked vocational and certification pathways. Because long-term jobs in the LNG industry require credentials, the regional government needs to build vocational pathways that do not depend on a single company. The Tangguh independent panel itself recommended developing a vocational school in Bintuni, a skills training centre, and a scholarship programme through SKK Migas (Tangguh Independent Advisory Panel, 2023). These pathways should be designed around the *teaching factory* principle, work placements on real projects, and joint development of instructor competencies with industry (Ningrum, 2025). Nationally recognised competency certification would allow graduates to work not only at Tangguh but also in the energy, construction, logistics, and service sectors elsewhere. Local content policies should also be directed towards developing local businesses as suppliers of goods and services, accompanied by enforcement and capacity support (Gbadago, 2025).

Third, local economic diversification beyond oil and gas. The limited labour absorption of the LNG industry calls for the development of other livelihoods. Subnational studies recommend that resource-rich regions diversify their economies and invest in infrastructure, education, and technology (Hidayat et al., 2024; Nurmala et al., 2025). For Teluk Bintuni, diversification can be directed towards fisheries, agriculture, non-timber forest product processing, and services, supported by market access and financing. Resource wealth can serve as initial capital for regional development when it is managed by good institutions (Dou et al., 2022), so part of the oil and gas revenue should be invested in building an economic base that will endure as the oil and gas DBH share declines and gas reserves are depleted. Fourth, collaborative governance and financing of education. A partnership-based education financing model that brings together government, the private sector, communities, and educational institutions can broaden the funding base and increase flexibility and sustainability (P. Setiawan, Pujihartono, & Sutrisno, 2026). Collaboration among these stakeholders has also been shown to strengthen the transparency, accountability, and sustainability of education financing (Kurniawati, Tularsih, & Sutrisno, 2026), so oil and gas DBH, special autonomy funds, and company social programmes in Teluk Bintuni should be managed within a shared framework. A pentahelix model is effective only when institutional coordination and a shared communication strategy are strengthened (Yuliana, Wulandari, & Rupiarsieh, 2026). Tribal chiefs and customary institutions, as among the Moskona (Wahid et al., 2025) and the Sebyar (Merina & Bawulang, 2025), hold strong social legitimacy and can therefore be involved as partners in planning, monitoring, and dispute-resolution deliberations, just as customary institutions help maintain social harmony in other parts of Papua (Amatullah et al., 2026). The regional government also needs to finalise the DBH implementing regulations governing allocation, limits on use, and accountability (Tangguh Independent Advisory Panel, 2023), publish their realisation regularly, and provide education, employment, and poverty statistics disaggregated by Indigenous Papuan status and tribe, in line with the principles of Indigenous data governance (Carroll et al., 2020).

4. CONCLUSION

This study concludes that the Teluk Bintuni paradox reflects a weak link between very large economic output and the welfare of local communities. Three findings are directly supported by the data. First, GRDP per capita in 2024 was about seven times the national figure, while the poverty rate in 2025 remained above 25 percent and the HDI remained in the medium category. Second, the

average adult had not completed junior secondary school and only about 7 percent of residents held post-secondary qualifications, whereas long-term jobs in the LNG industry are few and require credentials. Third, oil and gas revenue-sharing funds are earmarked for education and Indigenous communities in regulation, but the implementing rules for distributing them have not yet been put in place. Beyond these data, the authors interpret the findings as three mutually reinforcing layers: an enclave production structure that generates value with little local employment, an education gap that filters local people out of credentialed jobs, and a governance gap that delays the conversion of revenue into capability. Published field studies suggest that communities experience this as a gap between promised benefits and visible services. This interpretation is consistent with the data but has not been tested causally. These conclusions are limited by their reliance on secondary data and published field studies. The data are not disaggregated by Indigenous status or tribe and come from different years and sources, so the conclusions do not represent the full range of experiences of the Indigenous communities of Teluk Bintuni. The regional government is advised to prioritise contextual basic and secondary education, expand equivalency programmes, and build vocational and certification pathways linked to industry but not dependent on a single company. Oil and gas companies and SKK Migas are advised to sustain apprenticeship and scholarship programmes and to widen opportunities for local suppliers, while provincial and regency governments need to finalise the DBH implementing regulations, open their realisation data, and involve customary institutions before the oil and gas DBH share declines from 2042. Future research should collect primary data through participatory fieldwork with the tribes of Bintuni Bay, household surveys disaggregated by tribe, tracer studies of apprenticeship and vocational graduates, and causal analyses of the effect of DBH education spending on learning outcomes.

5. REFERENCES

- Acuna, J., Balza, L. H., & Gomez-Parra, N. (2024). From wells to wealth? Government transfers and human capital. *Journal of Development Economics*, 166, 103206. <https://doi.org/10.1016/j.jdeveco.2023.103206>
- Afriansyah, A. (2022). Refleksi dua puluh tahun pembangunan pendidikan di Tanah Papua (2001–2021) [Reflections on twenty years of educational development in the Land of Papua (2001–2021)]. *Masyarakat Indonesia*, 48(1), 63–77. <https://doi.org/10.14203/jmi.v48i1.1170>
- Alssadek, M., & Benhin, J. (2023). Natural resource curse: A literature survey and comparative assessment of regional groupings of oil-rich countries. *Resources Policy*, 84, 103741. <https://doi.org/10.1016/j.resourpol.2023.103741>
- Amatullah, A. R. N., Putri, R. A. S., Zulfayani, Amelia, R., Khusnaeni, L., & Istiqomah, N. (2026). Dinamika sosial-ekonomi masyarakat multikultural di wilayah perbatasan Sota antara masyarakat adat Papua dan transmigran [Socio-economic dynamics of a multicultural society in the Sota border area between Papuan Indigenous communities and transmigrants]. *Jurnal Riset Sosial Humaniora dan Pendidikan (Soshumdik)*, 5(1), 96–110. <https://doi.org/10.56444/soshumdik.v5i1.3287>
- Badan Pusat Statistik. (2025). *Persentase penduduk miskin Maret 2025 turun menjadi 8,47 persen* [The percentage of poor people in March 2025 fell to 8.47 percent] [Official statistics news]. Retrieved from <https://www.bps.go.id/id/pressrelease/2025/07/25/2518/persentase-penduduk-miskin-maret-2025>
- Carroll, S. R., Garba, I., Figueroa-Rodríguez, O. L., Holbrook, J., Lovett, R., Materechera, S., ... Hudson, M. (2020). The CARE principles for Indigenous data governance. *Data Science Journal*, 19(1), 43. <https://doi.org/10.5334/dsj-2020-043>
- Damayanti, T. E., Fadlurrohm, I., & Osira, Y. (2026). Dampak operasional PLTU terhadap kondisi sosial ekonomi nelayan: Studi kasus Kelurahan Teluk Sepang [The impact of coal-fired power plant operations on the socio-economic conditions of fishers: A case study of Teluk Sepang Subdistrict]. *Jurnal Riset Sosial Humaniora dan Pendidikan (Soshumdik)*, 5(1), 143–160. <https://doi.org/10.56444/soshumdik.v5i1.3243>
- Dietsche, E. (2020). Jobs, skills and the extractive industries: A review and situation analysis. *Mineral Economics*, 33(3), 359–373. <https://doi.org/10.1007/s13563-020-00219-2>
- Dou, S., Yue, C., Xu, D., Wei, Y., & Li, H. (2022). Rethinking the “resource curse”: New evidence from nighttime light data. *Resources Policy*, 76, 102617. <https://doi.org/10.1016/j.resourpol.2022.102617>

- El Famoos, A. F., Arifin, Z., & Sutrisno. (2026). Performance based education funding models for improving the effectiveness of fund management. *EDUSOSHUM: Journal of Islamic Education and Social Humanities*, 6(2), 837–843. <https://doi.org/10.52366/edusoshum.v6i2.361>
- Ferguson, J. (2005). Seeing like an oil company: Space, security, and global capital in neoliberal Africa. *American Anthropologist*, 107(3), 377–382. <https://doi.org/10.1525/aa.2005.107.3.377>
- Fimbay, N., Salle, A., & Hafizrianda, Y. (2026). Pengaruh realisasi dana otonomi khusus bidang pendidikan, kesehatan, infrastruktur, dan ekonomi kerakyatan terhadap indeks pembangunan manusia di Kabupaten Teluk Bintuni tahun 2011–2021 [The effect of realized special autonomy funds for education, health, infrastructure, and the people's economy on the human development index in Teluk Bintuni Regency, 2011–2021]. *Management Studies and Entrepreneurship Journal*, 7(5), 1037–1061. <https://doi.org/10.37385/17gjc40>
- Garda Papua. (2025, September 1). Sidang paripurna DPRD, Bupati Teluk Bintuni paparkan LKPJ tahun anggaran 2024 [DPRD plenary session: Teluk Bintuni Regent presents the 2024 fiscal-year accountability report]. Retrieved from <https://gardapapua.com/2025/09/01/sidang-paripurna-dprd-bupati-teluk-bintuni-paparkan-lkpj-tahun-anggaran-2024/>
- Gbadago, F. Y. (2025). Analyzing local content and in-country spending requirements to advance technology transfers and support entrepreneurial development in Ghana's upstream petroleum sector. *Humanities and Social Sciences Communications*, 12(1), 275. <https://doi.org/10.1057/s41599-025-04549-w>
- Gylfason, T. (2001). Natural resources, education, and economic development. *European Economic Review*, 45(4–6), 847–859. [https://doi.org/10.1016/S0014-2921\(01\)00127-1](https://doi.org/10.1016/S0014-2921(01)00127-1)
- Hidayat, B. A., Apriliana, T., Faturohim, A., Wahyuni, R. N. T., Landekumandang, F., Judijanto, L., ... Saksono, H. (2024). Local government development policy: Natural resource revenue sharing and economic growth in Indonesia. *Journal of Infrastructure, Policy and Development*, 8(15), 10375. <https://doi.org/10.24294/jipd10375>
- Kamalina, A. R. (2025, February 5). PDB per kapita Indonesia 2024 capai Rp78,62 juta [Indonesia's GDP per capita in 2024 reached IDR 78.62 million]. *Bisnis.com*. Retrieved from <https://ekonomi.bisnis.com/read/20250205/9/1837016/pdb-per-kapita-indonesia-2024-capai-rp7862-juta>
- Katadata Insight Center. (2025a). 16.06% of Teluk Bintuni's population are elementary school graduates as of December 2024. *Databoks*. Retrieved from <https://databoks.katadata.co.id/en/demographics/statistics/7a4d71b4a421202/1606-of-teluk-bintunis-population-are-elementary-school-graduates-as-of-december-2024>
- Katadata Insight Center. (2025b). Sektor utama penggerak perekonomian di Kabupaten Teluk Bintuni pada 2023 [Main drivers of the economy of Teluk Bintuni Regency in 2023]. *Databoks*. Retrieved from <https://databoks.katadata.co.id/ekonomi-makro/statistik/a633bf5375d42a2/sektor-utama-penggerak-perekonomian-di-kabupaten-teluk-bintuni-pada-2023>
- Katadata Insight Center. (2026a). Gross regional domestic product (GRDP) at current prices by sector in Teluk Bintuni Regency in 2024. *Databoks*. Retrieved from <https://databoks.katadata.co.id/en/economics-macro/statistics/0d7ff428498fefe/gross-regional-domestic-product-grdp-at-current-prices-by-sector-in-teluk-bintuni-regency-in-2024>
- Katadata Insight Center. (2026b). Jumlah penduduk dan persentase kemiskinan di Kabupaten Teluk Bintuni 2004–2025 [Population and poverty rate in Teluk Bintuni Regency, 2004–2025]. *Databoks*. Retrieved from <https://databoks.katadata.co.id/demografi/statistik/ee56e2c3ca89b6e/jumlah-penduduk-dan-persentase-kemiskinan-di-kabupaten-teluk-bintuni-2004-2025>
- Katadata Insight Center. (2026c). PDRB ADHB per kapita Kabupaten Fak Fak Rp71,79 juta data per 2025 [GRDP per capita at current prices of Fakfak Regency reached IDR 71.79 million in 2025]. *Databoks*. Retrieved from <https://databoks.katadata.co.id/datapublish/2026/09/13/pdrb-adhb-per-kapita-kabupaten-fak-fak-rp-71-79-juta-data-per-2025>
- Katadata Insight Center. (2026d). Rata-rata lama sekolah di Kabupaten Teluk Bintuni sampai kelas VII pada 2025 [Average length of schooling in Teluk Bintuni Regency up to grade VII in 2025]. *Databoks*. Retrieved from <https://databoks.katadata.co.id/layanan-konsumen-kesehatan/statistik/7935fe68cc6a55a/ratarata-lama-sekolah-di-kabupaten-teluk-bintuni-sampai-kelas-vii-pada-2025>
- Kurniawati, M., Tularsih, S., & Sutrisno. (2026). The role of stakeholders in the management of sustainable education financing. *EDUSOSHUM: Journal of Islamic Education and Social Humanities*, 6(2), 818–828. <https://doi.org/10.52366/edusoshum.v6i2.359>
- Kusumaningrum, D. D., & Muslim, F. (2023). Model of inclusive education in strengthening affirmative policies for Indigenous Papuans. *Potensia: Jurnal Kependidikan Islam*, 9(1), 131–148. <https://doi.org/10.24014/potensia.v9i1.24109>

- Manibuy, M. M., Fitriani, & Teturan, Y. E. (2025). Analisis kualitas sumber daya manusia pengelola anggaran dalam meningkatkan penyerapan dana otonomi khusus Papua [An analysis of the quality of budget-managing human resources in improving the absorption of Papua's special autonomy funds]. *Musamus Journal of Public Administration*, 7(2), 282–290. <https://doi.org/10.35724/mjpa.v7i2.6689>
- Merina, B., & Bawulang, T. (2025). Indigenous leadership and local policy implementation: Evidence from the recognition of Indigenous peoples regulation in Teluk Bintuni, Indonesia. *Jurnal Bina Praja*, 17(3). <https://doi.org/10.21787/jbp.17.2025.2881>
- Morgan, H. (2022). Conducting a qualitative document analysis. *The Qualitative Report*, 27(1), 64–77. <https://doi.org/10.46743/2160-3715/2022.5044>
- Ningrum, M. (2025). Efektivitas kebijakan link and match dalam pendidikan vokasi: Menakar kesiapan lulusan memasuki dunia kerja [The effectiveness of the link and match policy in vocational education: Assessing graduates' readiness to enter the workforce]. *Jurnal Ilmu Manajemen dan Pendidikan*, 5(1), 51–58. <https://doi.org/10.30872/jimpian.v5i1.4729>
- Nurmala, S., Hartono, D., & Sumiyati, T. (2025). The impact of mineral resources windfall on poverty through fiscal transmission. *Efficient: Indonesian Journal of Development Economics*, 8(3), 281–293. <https://doi.org/10.15294/efficient.v8i3.32692>
- Pemerintah Kabupaten Teluk Bintuni. (2025). *Peraturan Bupati Teluk Bintuni Nomor 14 Tahun 2025 tentang Penetapan Indikator Kinerja Utama Pemerintah Kabupaten Teluk Bintuni Tahun 2025–2029* [Teluk Bintuni Regent Regulation Number 14 of 2025 on the determination of key performance indicators of the Teluk Bintuni Regency Government for 2025–2029]. Retrieved from <https://jdih.telukbintunikab.go.id/common/dokumen/9206pb2025014-sign.pdf>
- Pemerintah Republik Indonesia. (2021). *Peraturan Pemerintah Nomor 107 Tahun 2021 tentang Penerimaan, Pengelolaan, Pengawasan, dan Rencana Induk Percepatan Pembangunan dalam Rangka Pelaksanaan Otonomi Khusus Provinsi Papua* [Government Regulation Number 107 of 2021 on the receipt, management, supervision, and master plan for accelerated development in the implementation of special autonomy for Papua Province]. Retrieved from <https://peraturan.go.id/files/pp107-2021pjl.pdf>
- Pramudianti, D., Papyrakis, E., & Rieger, M. (2024). Health and extractive resources: A research note based on evidence from Indonesian districts. *Bulletin of Indonesian Economic Studies*, 60(3), 347–367. <https://doi.org/10.1080/00074918.2023.2295037>
- Qalyubi, I., Widiastuty, H., Adlina, F., & Misrita, M. (2026). Phonological and lexical change in Kudangan: Implications for mother-tongue-based education in Central Kalimantan. *EDUSOSHUM: Journal of Islamic Education and Social Humanities*, 6(1), 519–529. <https://doi.org/10.52366/edusoshum.v6i1.327>
- Ridena, S., Nurarifin, N., Hermawan, W., & Komarulzaman, A. (2021). Testing the existence of natural resource curse in Indonesia: The role of financial development. *Jurnal Ekonomi & Studi Pembangunan*, 22(2), 213–227. <https://doi.org/10.18196/jesp.v22i2.10977>
- Rofi'atunnisa, Nurihsan, J., & Dahlan, T. H. (2026). Dinamika psiko-sosial dalam pendidikan kesetaraan: Studi pemenuhan kebutuhan dasar psikologis [Psychosocial dynamics in equivalency education: A study of basic psychological need fulfilment]. *Jurnal Riset Sosial Humaniora dan Pendidikan (Soshumdik)*, 5(1), 19–38. <https://doi.org/10.56444/soshumdik.v5i1.3325>
- Sachs, J. D., & Warner, A. M. (2001). The curse of natural resources. *European Economic Review*, 45(4–6), 827–838. [https://doi.org/10.1016/S0014-2921\(01\)00125-8](https://doi.org/10.1016/S0014-2921(01)00125-8)
- Salmawati, S., Purnomo, A., Ula, S. N. N., Rais, L., & Ikhwan, S. (2024). Dampak otonomi khusus pada ekonomi orang asli Papua setelah implementasi kebijakan pemerintahan [The impact of special autonomy on the economy of Indigenous Papuans after the implementation of government policy]. *Jurnal Noken: Ilmu-Ilmu Sosial*, 10(1), 214–222. <https://doi.org/10.33506/jn.v10i1.3461>
- Sari, F., & Riansi, E. S. (2024). Peran stakeholder dalam mengatasi ketimpangan pendidikan di daerah terpencil: Tantangan dan solusi [The role of stakeholders in addressing educational inequality in remote areas: Challenges and solutions]. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 9(04), 275–300. <https://doi.org/10.23969/jp.v9i04.20436>
- Setiadi, S., & Sumini, S. (2023). The more people come, the harder lives become: Migration to the villages around the LNG Tangguh Project, Papua. *Kritika Kultura*, 40. <https://doi.org/10.13185/1656-152x.2038>
- Setiawan, H., & Choirunnisa. (2026). Analisis pendekatan aksesibilitas holistik pendidikan melalui akselerasi pemerataan pendidikan berkualitas di Tanah Papua [An analysis of a holistic educational accessibility approach through accelerating the equitable distribution of quality education in the Land of Papua]. *Jurnal Ilmiah Wahana Bhakti Praja*, 16(1), 45–60. <https://doi.org/10.33701/jiwbp.v16i1.6184>

- Setiawan, P., Pujihartono, S. T., & Sutrisno. (2026). Innovations in partnership based education financing models. *EDUSOSHUM: Journal of Islamic Education and Social Humanities*, 6(2), 844–853. <https://doi.org/10.52366/edusoshum.v6i2.369>
- Simbolon, S. E., Murniarti, E., & Simbolon, B. R. (2026). Merajut asa di Tanah Mutiara Hitam: Analisis faktor penghambat dan strategi peningkatan kualitas pendidikan di pedalaman Papua [Weaving hope in the Land of the Black Pearl: An analysis of inhibiting factors and strategies for improving education quality in the interior of Papua]. *Jurnal Ilmiah Global Education*, 7(1), 596–610. <https://doi.org/10.55681/jige.v7i1.5103>
- Siregar, M., & Shu'udin, A. (2026). Narasi green development dalam kebijakan hilirisasi nikel Indonesia: Analisis wacana kritis atas kebijakan dan kontestasi makna [The green development narrative in Indonesia's nickel downstream policy: A critical discourse analysis of policy and contested meanings]. *Jurnal Riset Sosial Humaniora dan Pendidikan (Soshumdik)*, 5(1), 161–181. <https://doi.org/10.56444/soshumdik.v5i1.3464>
- Tahanina, R., Nurichsan, Nurhidayati, Kafara, D. L. H., & Hasibuan, M. (2026). Strengthening the assessment competencies of prospective Islamic religious education teachers at STAI Asy-Syafi'iyah Nabire. *EDUSOSHUM: Journal of Islamic Education and Social Humanities*, 6(1), 446–454. <https://doi.org/10.52366/edusoshum.v6i1.329>
- Tangguh Independent Advisory Panel. (2023). *Final report on operations and Tangguh Expansion Project*. Retrieved from https://www.bp.com/content/dam/bp/country-sites/en_id/indonesia/home/news/reports/2023_en_tiap_report.pdf
- Wahid, B., Mardiyah, U., Ula, S. N. N., Purwanti, N., & Subhan, P. B. (2025). Bakar babi: Dari ritual budaya ke simbol politik suku Moskona dalam pemilihan legislatif di Teluk Bintuni, Papua Barat [Pig roasting: From cultural ritual to political symbol of the Moskona tribe in legislative elections in Teluk Bintuni, West Papua]. *Jurnal Noken: Ilmu-Ilmu Sosial*, 11(2), 398–410. <https://doi.org/10.33506/jn.v11i2.5001>
- Wahyudi, H., & Palupi, W. A. (2023). Natural resources curse in Indonesia. *International Journal of Energy Economics and Policy*, 13(2), 349–356. <https://doi.org/10.32479/ijeep.14077>
- Yuliana, F., Wulandari, S., & Rupiarsieh. (2026). The dynamics of multi-stakeholder collaboration: Challenges in integrating the pentahelix model in Bojonegoro Geopark. *Jurnal Riset Sosial Humaniora dan Pendidikan (Soshumdik)*, 5(1), 125–142. <https://doi.org/10.56444/soshumdik.v5i1.3345>
- Yulianti, Y., & Projo, N. W. K. (2025). Analisis pengaruh indeks pembangunan manusia, tingkat pengangguran terbuka dan PDRB terhadap kemiskinan di kabupaten/kota Provinsi Papua Barat [An analysis of the effect of the human development index, open unemployment rate, and GRDP on poverty in the regencies/cities of West Papua Province]. *Journal of Development Economic and Digitalization*, 4(2), 48–63. <https://doi.org/10.59664/jded.v4i2.9014>