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Integration of Change Theory and Evidence-Based Policies for Equitable Welfare in Mountainous Papua, Indonesia

[1]*Ira Meiyenti*, [1]*Ihwan Sudrajat*, [1]*Afif Syarifudin Yahya*, [1]*Wildan Maulana Assani Mualim*, [2]*Nur Sari Bulan*

[1]Institut Pemerintahan Dalam Negeri, Jalan Ir. Soekarno No. KM 20, Cibeusi, Jatinangor, Kabupaten Sumedang, Jawa Barat 45363, Indonesia
[2]University of Strathclyde, United Kingdom

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CORRESPONDENCE

Name: Ira Meiyenti
Email: irameiyenti@ipdn.ac.id

A B S T R A C T

This research aims to integrate population administration projections with the Theory of Change (ToC) and Evidence-Based Policy (EBP) frameworks to strengthen policy formulation for the equitable distribution of welfare across districts in Mountainous Papua Province. The research used mixed methods with a sequential explanatory design. In the quantitative phase, population, Human Development Index (HDI), and district-level education indicators are projected for the period 2025–2045 using arithmetic and exponential methods, and the results are then compared across eight districts. In the qualitative phase, the projection findings were interpreted to assess the feasibility of policy assumptions, identify intervention needs, and formulate evaluation mechanisms in the spatial context of Mountainous Papua, using ToC as a prospective analytical tool. The results showed variations in trajectories across districts and misalignments between population growth and HDI increases: Yahukimo is projected to have the largest population but the slowest increase in HDI, whereas Jayawijaya and Central Mamberamo show a stronger upward trend in HDI. Education projections indicate uneven progress and declining participation in vocational education, which contributes to the missing middle skill gap. These findings confirm the need to differentiate district-profile-based interventions and to strengthen monitoring as a policy feedback mechanism. It was concluded that equitable distribution of welfare in Mountainous Papua requires predictive planning and data-driven adaptive governance, with ToC–EBP as a framework to test causal logic, target interventions, and strengthen policy evaluation.

INTRODUCTION

Data-driven public administration is a prerequisite for fair, targeted, and accountable policies, especially in areas with geographic barriers and inequality of basic services. In Indonesia, population data serves not only for administration but also as a basis for development planning, budget allocation, program evaluation, and law enforcement (Muhtar & Priadi, 2017; Ulhaq & Wahid, 2022). The Ministry of Home Affairs encourages cross-sectoral data integration to strengthen needs-based welfare interventions, but in complex areas such as Mountainous Papua, data often remain within administrative functions and have not been fully translated into effective policies. Development inequalities in the region are caused more by structural inequalities such as access to education, health services, and employment opportunities than by population growth alone, while extreme topography demands predictive and projective planning, making medium-long term population projections a relevant instrument (Dharmaputra, 2025). Therefore, medium-long-term population projections are relevant as an instrument to be able to formulate various policies and programs that are on target, efficient, and sustainable Gustyari et al., (2022), as an intervention to change various positive aspects of life and improve governance, especially the equitable distribution of welfare in mountainous Papua Province. Referring to the latest population data for the Mountainous Papua Province, population projections provide a clearer view of future population dynamics and enable more effective, data-driven decision-making regarding the distribution of welfare and equitable development (Devi & Hidayati, 2021). This projection can also identify potential challenges and opportunities that inform the formulation of public policies across education, health, infrastructure, and other sectors to adapt to the needs of a growing population (Hardinandar, 2019).

Data from the last five years of the Ministry of Home Affairs and projections until 2045 show contrasting demographic and human development disparities between eight districts. Yahukimo is projected to have the largest population but experience the slowest increase in HDI, while Jayawijaya and Central Mamberamo show a stronger increase in HDI, emphasizing that population size is not automatically proportional to the quality of human development and reflects structural barriers in the distribution of resources and access to basic services.

In local policy practice, the main challenge is not the availability of data, but the translation of demographic evidence into contextual interventions. Uniform policies tend to be ineffective in dealing with spatial heterogeneity and variation in needs between districts, so long-term projections need to be combined with a policy framework that is able to explain and test the causal chains of change (Kusumaningrum & Muslim, 2023; Nurdin, 2017).

In the global discourse, data-driven governance is promoted as the foundation for achieving the Sustainable Development Goals, especially in disadvantaged regions and vulnerable groups. Demographic projections are recommended to anticipate the burden on public services, support needs-based budgeting, and reduce access inequality (World Bank, 2019). Conceptually, the Theory of Change maps the causal relationships between inputs, activities, outputs, outcomes, and policy impacts (Mayne & Johnson, 2015), while the Evidence-Based Policy emphasizes the use of relevant and testable evidence in decision-making (Cairney, 2016; Chhetri & Zacarias, 2021). However, in the context of remote and heterogeneous areas such as mountainous

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Papua, research and policy practice still show significant fragmentation, where population projections tend to be treated as statistical outputs, while programme planning is sectoral and has not explicitly linked policy targets and mechanisms of change to available demographic evidence

Previous research has mostly focused on top-down development models or sector-specific issues, such as vocational education or affirmative action, without integrating long-term multidimensional data into coherent policy designs (Bol et al., 2019; Indrawati & Kuncoro, 2021; Suharno et al., 2020). Research by Septiyana et al., (2024), emphasizing the importance of vocational education, but has not addressed the integrative aspects of local industries in remote areas. On the other hand, criticism of affirmation programs that lack empirical evidence and thus fail to address the specific needs of regions such as mountainous Papua (Fahmiyah & Ningrum, 2023; Pertiwi et al., 2023; Wibowo et al., 2019). The fragmentation claim of this study is strengthened by visuals through the results of bibliometric analysis using VOSviewer of related literature. This is evident in the image below.

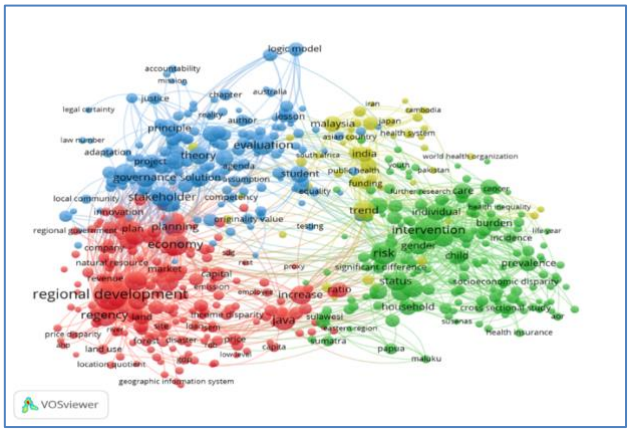

Figure 1. VOSviewer visualization of the Scopus database, processed by researchers, 2026

The conceptual map based on the Scopus bibliometric analysis (2015–2026) above shows a clear fragmentation of knowledge into three main clusters: governance and policy legal frameworks; theoretical development and evaluation (including Theory of Change); and contextual studies of socio-economic disparities and regional development. The weak connectivity between theoretical and contextual clusters suggests that integration of change theory frameworks, evidence-based policy approaches, and specific spatial contexts, such as Mountainous Papua, remains limited in the literature. The separation of policy discourse from regional empirical analysis further emphasizes the existence of conceptual gaps that are the main foothold of this research. For the equitable distribution of welfare in complex areas, this integration allows for accountable, adaptive, and evidence-based policy design, with mechanisms for change and resource allocation that can be tested and adjusted, and requires synergy between central and local governments (Hidayati et al., 2023; Salmawati et al., 2024).

Based on these backgrounds and gaps, this study asks the main question: how population administration projections can be used as evidence to inform the design of welfare equity policies in mountainous Papua Province through the integration of the Theory of Change and Evidence-Based Policy. More specifically, this study examines how variations in population, HDI, and education projections across districts through 2045 give rise to different intervention needs, and how ToC and EBP can be integrated to guide program targeting, indicator selection, and spatially sensitive evaluation mechanisms.

In line with these questions, this study aims to: first, present projections of population administration data (population, HDI, and education) until 2045 as the basis for identifying inequality and inter-regional service needs; second, formulate the integration flow of ToC and EBP to translate these projections into a measurable logic of welfare equity policy interventions; and third, discussing the implications of data governance and evidence design so that regional policies are no longer based on a uniform approach, but based on the demographic profile and human development achievements of each district.

This study contributes theoretically by extending the ToC and EBP to predictive, spatial, and long-term public policy. In contrast to the retrospective conventional ToC, this study shows how long-term demographic projections can be used to test causal assumptions, intermediate targets, and impact trajectories prior to policy implementation. Thus, the ToC serves as a dynamic analytical instrument that accommodates demographic uncertainty and spatial variation, whereas EBP shifts from historical data to projective evidence to support adaptive decision-making in the context of structural inequality. In practical terms, the study developed a welfare policy framework that integrates ToC and EBP, informed by population projections, the HDI, and education data through 2045. Demographic projections play a dual role: testing ToC assumptions while strengthening EBP practices, resulting in scalable, adaptive, and replicable policy models in remote areas with limited planning capacity and spatial barriers.

METHOD

This study utilizes projections based on demographic data and human development indicators to map the trajectory of district welfare during 2025–2045, so that the analysis is prospective for policy formulation, not just historical trends. The main data sources include population administration from the Directorate General of Population and Civil Registration, the Ministry of Home Affairs and district-level human development indicators, which are processed by cleaning, definition alignment, and standardisation of time periods.

Arithmetic and exponential projection methods were used in parallel to assess the trajectory's sensitivity, and the results were then compared across districts to highlight variations in demographic profiles and welfare outcomes. The indicator of "declining vocational education participation" is operationalized as a downward trend in the proportion of vocational education, which is interpreted as a symptom of the missing middle when secondary skills are not adequately formed.

A mixed-methods approach with a sequential explanatory design is employed. The quantitative phase is carried out first, with projections of population, HDI, and district education, which are analyzed comparatively to identify differences in growth trajectories and educational achievements. These quantitative results are then interpreted qualitatively to assess the feasibility of policy assumptions, intervention needs, and evaluation mechanisms in the spatial context of mountainous Papua (eight districts).

The ToC framework is used to link long-term quantitative dynamics with the logic of welfare equity policies. Each component of the ToC is operationalized through projected

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quantitative indicators, so that the mismatch between the policy target and the projection trajectory becomes an analytical basis for sharpening program targeting, performance indicator selection, and policy implementation strategy (Nahavandi et al., 2011).

The EBP-based qualitative phase was conducted through in-depth interviews with 17 key informants, including regional officials, development planners, and sectoral experts, between February and December 2024. Thematic analysis refers to the ToC component and the principles of EBP, capturing how projective evidence is understood, used, and negotiated in decision-making. Quantitative and qualitative findings are synthesized to produce empirical evidence-based conclusions, policy recommendations and contextual understanding. The flow of the research is shown in the following image

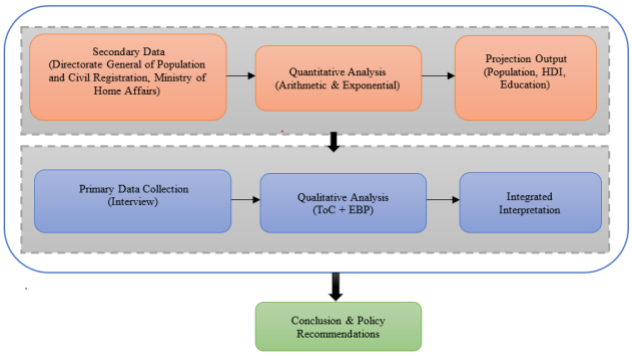

Figure 2. Research Flow

This study explicitly acknowledges the limitations of population administration data, particularly regarding the length of the time series, the consistency of recording across regions, and the availability of supporting variables. Therefore, the projections are exploratory rather than deterministic. The projection results are intended to guide policy formulation by identifying potential mismatches between policy assumptions and long-term demographic dynamics; therefore, they should be interpreted carefully, with attention to structural changes, new policy interventions, and external shocks that could affect the trajectory of future welfare indicators.

RESULTS AND DISCUSSION

Interpreting Demographic Evidence through the Theory of Change and Evidence-Based Policy Framework

The interpretation of demographic projections across districts in Mountainous Papua indicates that variations in welfare trajectories are shaped less by population size per se than by implementation-related constraints, including service affordability, provider capacity, geographical isolation, and fragmented intersectoral coordination. Although population, HDI, and education projections provide early signals of inequality risks, qualitative evidence reveals that such projections often function merely as an "alarm" of future needs when they are not embedded within an operational policy logic. Consequently, improvements in projected indicators particularly in education do not automatically translate into welfare gains in the absence of enabling conditions such as effective service delivery systems and viable school-to-work transition pathways. This finding aligns with broader evidence showing that demographic and social indicators only generate development outcomes when mediated by institutional quality and policy coherence (Cairney, 2016).

Within this context, the integration of the Theory of Change (ToC) and Evidence-Based Policy (EBP) provides an analytical framework to interpret demographic evidence beyond descriptive trends. ToC enables the explicit mapping of causal pathways from inputs to long-term impacts, while EBP ensures that each link in this chain is grounded in empirical evidence and subject to evaluation (Taplin et al., 2013). Applied to Mountainous Papua, this integrated framework demonstrates that uniform policy interventions risk reinforcing inequality by relying on homogeneous assumptions about needs across districts with markedly different demographic profiles and service capacities. Instead, demographic projections must be interpreted as conditional evidence whose policy relevance depends on the feasibility of underlying causal assumptions in specific spatial and institutional contexts (Mayne & Johnson, 2015).

A critical insight emerging from this integrated interpretation concerns the decline in vocational education participation and the resulting "missing middle" skill gap. Rather than being treated as an isolated education-sector issue, this trend represents a weak point in the intermediate outcome stage of the ToC, where the transition from education to productive employment fails to materialize. Empirical studies in developing and remote regions consistently show that improvements in educational attainment do not yield welfare gains unless education systems are closely aligned with labour market demand and local economic structures (Bol et al., 2019; Suharno et al., 2020). In this sense, demographic and education projections reveal not only outcome gaps but also bottlenecks in the causal chain that must be addressed through targeted, evidence-informed interventions.

The ToC framework further clarifies how population projections, HDI trajectories, and education trends function as key inputs for policy design, resource allocation, and program prioritisation aimed at equitable welfare distribution. However, qualitative evidence highlights that each input–activity–output–outcome linkage is highly sensitive to implementation prerequisites, including administrative capacity, data integration, and cross-sectoral collaboration. These findings reinforce arguments in the policy literature that evidence-based interventions are effective only when supported by adaptive governance mechanisms capable of learning from implementation feedback and adjusting policy assumptions accordingly (Andrews et al., 2017; De Silva et al., 2014).

Interpreted through the combined ToC–EBP lens, demographic projections thus serve a dual role. First, they identify spatially differentiated risks of welfare inequality across districts. Second, they provide a basis for testing the plausibility of policy assumptions before large-scale implementation. Evidence-based program planning, therefore, requires not only identifying priority issues but also diagnosing their root causes and formulating measurable, context-sensitive objectives. Targeted allocation of resources financial, human, and infrastructural becomes essential to ensure that interventions effectively improve access to the three core pillars of well-being: education, health services, and income opportunities. When these conditions are met, demographic evidence can meaningfully inform adaptive welfare policies and contribute to reducing persistent regional disparities, as reflected in sustained

improvements in the Human Development Index (HDI) (World Bank, 2019).

Evidence-Based Policy Implications Derived from Integrated Projections

a. EBP Based on Population Projection Data

The population projections for Mountainous Papua Province, covering eight districts, are presented in the graph below.

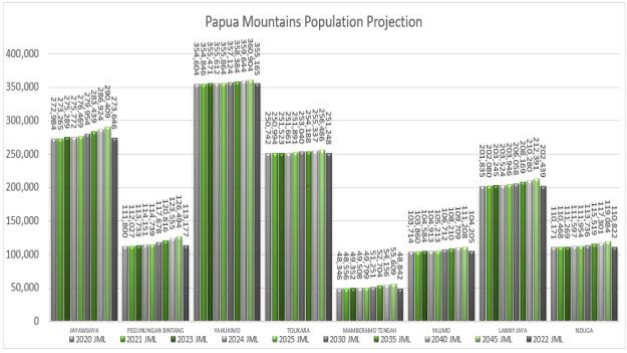

Figure 3. Projected Population of Mountainous Papua Province Until 2045, Processed by Researchers, 2024

Population projections for eight districts in mountainous Papua Province indicate varied growth patterns. Yahukimo Regency is projected to have the highest population (354,000–361,000), followed by Jayawijaya (272,000–291,000) and Tolikara (250,000–257,000). In contrast, Central Mamberamo Regency has the smallest projected population (49,000–56,000). The variation in population projections across districts in mountainous Papua Province reflects demographic fragmentation that warrants policy differentiation based on regional functions rather than solely on population size. Districts with large populations, such as Yahukimo, Jayawijaya, and Tolikara, may face pressure on public services and the job market if population concentration is not balanced by an adequate economic base. In contrast, a small population district like Central Mamberamo requires a non-conventional development approach that emphasizes service precision, functional connectivity, and adaptation to geographical and social conditions.

Projections of the population of mountainous Papua show an increasing trend in the number and distribution of genders. The impact depends on district management: without appropriate policies, growth can precipitate a crisis, whereas effective management can turn it into an opportunity to improve economic and social welfare. Based on population projection data, Yahukimo Regency has the highest projected population (354,604–360,904), followed by Jayawijaya and Tolikara. On the other hand, Central Mamberamo Regency has the lowest population (48,346–55,609 people).

The implications of EBP-based policies show that districts with large populations, such as Yahukimo and Jayawijaya, require labour-intensive infrastructure interventions and job creation to optimise demographic potential. On the other hand, small districts such as Central Mamberamo are in need of empowerment and skills development policies to prevent marginalization. This is in line with the view of development economics that places human resource development as the foundation of inclusive (Barro, 2001).

The other literature also shows that upskilling is an important prerequisite for a fair distribution of welfare (Nurdin, 2017). Skills training programs are systematically designed to enhance workforce capabilities and productivity, and open up new job opportunities amid industry transformation and changing employment landscapes (Notoatmodjo, 2015; Meiyanto & Huda, 2022).

b. EBP Based on HDI Projection Data

The HDI projection for mountainous Papua Province is used to help governments and policymakers monitor and plan measures to improve the community's quality of life in a sustainable manner. The following trends are observed in the development of HDI projections for all districts in mountainous Papua Province.

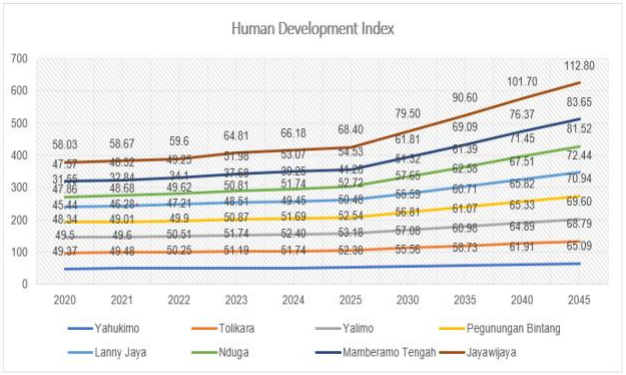

Figure 4. Projected Human Development Index of Mountainous Papua Province Until 2045, Processed by Researchers, 2024

Based on the graph above, the HDI projections indicate an overall upward trend across all districts, indicating improvements in health, education, and living standards. Jayawijaya and Central Mamberamo Regencies show the most significant growth trajectories. In contrast, Yahukimo County, despite having the largest population, exhibited the slowest growth in HDI. This paradox underscores that large populations do not automatically translate into better human development outcomes, a finding consistent with research that argues that, in addition to size population, institutional quality, and effective policies are important determinants of development success (Aiyar & Ebeke, 2016).

The projection results indicate that the largest upward trend in the HDI is observed in the Jayawijaya and Central Mamberamo Regencies. Meanwhile, Yahukimo Regency has the lowest HDI growth, despite having the largest population. Research shows that population size alone cannot determine the success of human development. This is in line with research by Mahmud et al., 2023), shows that while populations are often seen as development assets, a high population size alone does not guarantee the success of human development. According to (Suparta & Malia, 2020), several complex, interacting elements determine the effectiveness of human development, and populations are only one component among them.

The stagnation of the HDI in Yahukimo Regency, despite its large population, indicates systemic problems in resource distribution and service delivery. These findings resonate with studies of regional inequality in Indonesia, which often attribute disparities to geographic isolation and institutional weakness (Resosudarmo et al., 2014).

The EBP policy implies that the government should implement affirmative programs targeting low-HDI districts, such as Yahukimo and Tolikara, with a focus on improving access to basic services. This approach is supported by (Kusumaningrum & Muslim, 2023; Nilla et al., 2021), which

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emphasizes that affirmation programs must be context-specific and consider local socio-cultural dimensions to be effective.

c. EBP Based on Education Projection Data

Educational projections are used for planning and decision-making in education by governments, educational institutions, and the community. The following trends in the development of Education Projections for all districts in mountainous Papua Province are presented.

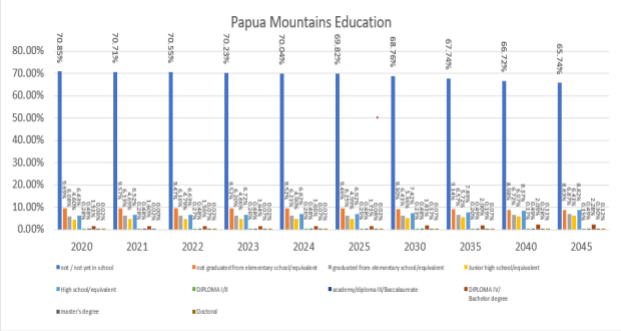

Figure 5. Education Projection of Mountainous Papua Province Until 2045, Processed by Researchers, 2024

The graph shows a downward trend in the percentage of unschooled individuals from 69.82% (2025) to 65.74% (2045), and a decrease in the percentage of elementary school graduates who have not graduated from 9.46% to 8.83% over the same period. Diploma I/II also decreased from 0.25% (2025) to 0.15% (2045). Meanwhile, all other indicators, such as elementary school graduates/equivalent, junior high school/equivalent, high school/equivalent, and academy/diploma III/Baccalaureate, show an increasing trend. Overall, this pattern illustrates a slow and asymmetrical educational transition. Improvements occurred primarily in the lower tier of the distribution (basic access and graduation), whereas vocational pathways and transitions to employment skills remained weak. This indicates that the main challenge ahead is no longer merely to expand access but rather to shift the educational system from survival-level schooling to productive, economically relevant education.

The decline in vocational education participation (Diploma I/II) requires the government of mountainous Papua to launch a competency-based revitalization program, involving local industries, and integrating technology and local wisdom, in order to reduce youth unemployment and encourage inclusive growth. This is especially important because vocational education is a key driver to reduce youth unemployment and foster inclusive growth (UNESCO, 2020).

Furthermore, the government can expand access to Strata I–III higher education, which is important to produce a skilled workforce and get out of the middle-income trap (Indrawati & Kuncoro, 2021). If policy projections are implemented in a sustainable trend, Indonesia, especially in mountainous Papua Province, can reduce illiteracy, increase the Gross Enrollment Rate (GER) of universities, and fulfil the country's constitutional obligation to ensure access to quality education for all citizens (Syamsurijal, 2024).

Not only that, but equitable and quality access to education is the main foundation for improving the welfare of the community as a whole (Hadianto et al., 2024). Governments can realize the expansion of access to education in disadvantaged areas by adopting a multidimensional approach that takes into account the unique characteristics and specific challenges faced by each disadvantaged region (Puspita & Sugiyono, 2021).

Integrating ToC and EBP for Adaptive and Equitable Welfare Governance

Findings in Mountainous Papua confirm that inequality in human development persists due to spatial and institutional barriers, including extreme topography, isolation, high logistics costs, limited public service capacity, and weak interagency coordination. This pattern aligns with subnational evidence from West Bengal, which shows clusters of developed areas around economic centres, while remote areas lag behind due to limited access to key social and economic facilities, reflecting spatial inequities in the distribution of welfare (Dey et al., 2024).

In the global policy debate, HDI inequality is increasingly understood as a matter of spatial justice, where geographic location systematically shapes inequalities in access to basic services, education, and employment. The OECD shows that such inequality of access is likely to persist in the long term, reinforcing the need for policies that emphasize affordability and space mobility (OECD, 2025).

In the vocational education sector, various studies indicate weak Technical and Vocational Education and Training outcomes in developing countries due to mismatches with the local labour market, low-quality infrastructure, and limited use of data in policy formulation. Responding to these challenges, a uniform input-based policy approach needs to be complemented by the integration of ToC and EBP, which allows for the mapping of causal assumptions, the identification of implementation failure points, and the adjustment of empirical evidence-based interventions to real obstacles in the field (De Silva et al., 2014).

Based on projective evidence indicating the failure of HDI convergence across regions and weak outcomes, particularly in vocational education pathways, the integration of ToC and EBP was used to formulate data-driven, adaptive policies. The policy places local contexts, spatial barriers, and outcome indicators at the centre of intervention design and evaluation. Within this framework, the strategy of equal distribution of welfare in Mountainous Papua is not reduced to a single policy instrument, but is operationalized through three main programs with complementary causal logic, namely: (1) affirmation programs designed to reach the groups and regions with the most persistent disadvantages; (2) revitalization of vocational education as a path to increase the capacity of productive human resources; and (3) the development of real-time monitoring systems to overcome the limitations of static ToC and strengthen policy learning capacity.

The causal structure of welfare equity policies designed based on this logic in Mountainous Papua is summarized in the following table.

Table 1. Theory of Change Integrated Evidence-Based Policy

Programs	Level ToC	Components	EBP
Affirmation	Input	Affirmative resources	HDI projections show that areas with low HDI have increased absolutely, but remain relatively lagging behind
	Activities	Precision implementation	Weak uptake of programs in remote areas due to administrative barriers

			(Wajdy, 2025)(Dinda R Sibagariang et al., 2024)
	Output	Reach between	Sector output grows more slowly in low-HDI districts
	Outcome	IPM Components	The rate of increase in HDI is not uniform between districts
	Impact	Equitable distribution of well-being	HDI convergence does not occur automatically without intervention
Revitalization of Vocational Education (D-I/II)	Early Problems	Failure of outcomes between	Diploma I/II Participation Stagnant Until 2045
	Input	Vocational education resources	Vocational pathways currently have a weak contribution to HDI
	Activities	Contextual implementation	Education-vocational fit & job market determine effectiveness (Effendy, 2016)
	Output	Immediate results	The output of vocational graduates is currently weak
	Outcome	Productive human resource capacity	Stagnation of vocational pathways reflects educational and employment incompatibility
	Impact	Equitable distribution of well-being and HDI	Education pathways have not sufficiently encouraged convergence
Real-Time Monitoring System	Early Problems	Limitations of static ToC	Population & HDI projections show a varied trajectory until 2045
	Input	Data infrastructure & institutional capacity	Adaptive M&E systems are essential for accountability & performance (Andrews et al., 2017)
	Activities	Policy monitoring & learning	Participatory monitoring improves resource distribution (T et al., 2024)
	Output	Up-to-date policy information	Information delays weaken the accuracy of budget allocation
	Outcome	Adaptive & responsive policies	More effective data-driven adaptive decisions
	Impact	Equitable distribution of welfare and accountability	Community participation strengthens policy legitimacy & fairness

Source: Processed by Researcher, 2024

The ToC in this study is based on projective HDI evidence, indicating the failure of welfare convergence across districts, and the need for differentiated inputs and data-driven policy activities. Revitalization of vocational education is positioned as an intervention to correct intermediate outcome failures, particularly the stagnation of the Diploma I/II pathway, while the real-time monitoring system serves as a feedback loop for adaptive adjustment of change pathways. Policy recommendations include the equitable distribution of education and health infrastructure in high-population districts with low HDI, strengthening vocational education through industrial partnerships to increase labour productivity, and health interventions that target early outcomes to prevent increases in HDI. The entire path of change is supported by multi-sectoral collaboration, emphasizing that equitable welfare is achieved through evidence-based adjustments, not uniformity of interventions, with ToC and EBP as dynamic policy learning instruments.

CONCLUSION

This study shows that development inequality in Mountainous Papua Province is multidimensional and cannot be overcome through uniform policies. Long-term projections emphasize the need for differentiated strategies according to the demographic dynamics and human development achievements of each region. The mismatch between population growth and the increase in the HDI, as in Yahukimo, which has a large population but the slowest HDI, indicates structural barriers in resource distribution and access to basic services.

Education projections also indicate unequal progress, with increases in general education participation not matched by increases in vocational education participation. This creates a missing middle skill that could weaken long-term productivity. The integration of ToC and EBP enables the mapping of intervention-impact causal pathways, emphasising the importance of region-based affirmative policies, vocational revitalisation connected to the labour market, and data-driven monitoring to break the reproduction of inequality.

Overall, these findings underscore the need for a shift from normative planning to data-driven adaptive governance. The ToC–EBP model offers a results-oriented policy roadmap that can be iteratively adjusted to local dynamics. The limitations of the study include uncertainty in projections and the absence of an integrated fiscal feasibility analysis. Further studies are recommended to deepen qualitative analysis and to develop policy simulations that incorporate a broader range of variables, including gender, climate resilience, and customary land tenure, to enhance the relevance of future policies.

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