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Absorption without reach: a qualitative case study of Special Autonomy health programming in two customary over-water villages of South Jayapura District, Papua, Indonesia

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Author contributions

T.S. conceived and designed the study, led the field verification and drafted the manuscript. K.Y. contributed to data collection, the literature search, and the analysis of the verification matrix and perception scores. A.R.H contributed to data interpretation, the preparation of tables and figures, and critical revision of the manuscript. All authors read and approved the final version and agree to be accountable for all aspects of the work.

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Abstract

Special Autonomy (Otonomi sesu) channels affirmative fiscal transfers to Papua, Indonesia, with the objective of improving the wellbeing of Indigenous Papuans. However, the link between high budget absorption and lived outcomes remains poorly understood at the village scale. The present article examines the manner in which Special Autonomy health programming and related interventions were delivered and experienced in two customary over-water villages of South Jayapura District, Tobati and Tahima Soroma (Kayopulau), in Youtefa Bay. A collective qualitative case study was conducted, drawing on a structured field-verification instrument covering twenty-one health programme items, a facility and service inventory, a perception scoring sheet and semi-structured interviews with village secretaries, health-post cadres, village heads and customary leaders, conducted in July 2026. The analysis of the data was conducted through a combination of reflexive thematic analysis, descriptive scoring, and triangulation across respondents and agency records. Of the forty-two programme observations made, nineteen (45.2%) were confirmed as having been delivered. The study revealed that the reach of primary and preventive services was between 71% and 100% of items, whereas referral, specialised and emergency services were between 14% and 36%. The analysis showed that there was one specialist visit per year and no maritime emergency capability. Services were delivered without disaggregation by Indigenous status, beneficiary records were largely unavailable, sanitation units and fisheries assistance had ceased to function, and cadre incentives recorded as Special Autonomy outputs were reported as village-funded. The perceived benefit exhibited variation in intensity across the villages, yet converged at the productive pillar. The effectiveness of the initiative was found to be more closely

associated with factors such as reach, beneficiary visibility, and the durability of transferred assets, as opposed to financial considerations.

Keywords Special Autonomy · Indigenous Papuans · Fiscal decentralisation · Health service delivery · Qualitative case study · Indonesia

1 Introduction

Fiscal transfers are among the most visible instruments that states use to address spatial and ethnic inequality. However, the distance between a disbursed rupiah and a healthier child is considerable and easily broken. The Special Autonomy policy for Papua, first enacted in 2001 and renewed in 2021, is a significant and explicitly affirmative transfer intended to advance the health, education and productivity of the indigenous Papuan population, known as Orang Asli Papua. In the city of Jayapura, Special Autonomy expenditure between 2021 and 2025 grew almost sixfold and reached an aggregate realisation of roughly 95.7% of the allocated ceiling, an absorption rate that, in isolation, signals strong administrative capacity. However, it is noteworthy that several city-level outcome indicators exhibited an unfavourable trend during the same period, including an increase in the maternal mortality ratio and a decline in immunisation coverage. This prompts the question that the absorption figures are unable to address: did the designated funds reach and benefit the intended recipients?

The question is most acute at the periphery of the city, where the intersection of geography, customary governance and administrative data systems becomes particularly salient. The South Jayapura District is home to two indigenous over-water villages in Youtefa Bay: Tobati and Tahima Soroma (Kayopulau). The residents of these villages must cross water to reach referral care services, the records of which are incomplete, and customary institutions remain central to community life. These villages represent a critical setting for observing the relationship between affirmative transfer and reach, given their status as a nexus of claims to special

autonomy on the part of indigenous communities, juxtaposed against the most constrained conditions for conventional service delivery. A thorough examination of the subject reveals that it does not provide a comprehensive representation of Papua as a whole. However, it does offer a concise illustration of the mechanisms that are instrumental in determining the success or failure of affirmative policy initiatives at the final stage of implementation.

Consequently, the focus of this article shifts from the ledger to the village. The inquiry deviates from the conventional approach of investigating the utilisation of Special Autonomy funds by posing a more fundamental question: namely, how were health and associated programmes delivered and experienced in areas where implementation is most challenging, and what are the underlying reasons for discrepancies between documented outcomes and the actual experiences of the communities? The study is guided by three research questions. Firstly, the paper will examine the implementation of Special Autonomy health programmes and related cross-pillar interventions at the village level in the two over-water villages of South Jayapura District. Secondly, the question must be posed: what factors account for the discrepancy between the recorded programme outputs and the village-level realities, including confirmation, targeting and the risk of double counting? Thirdly, it is necessary to consider how village officials and customary leaders perceive the benefits of special autonomy across development pillars. Furthermore, the reasons for the divergence in their judgments must be identified?

2 Background and theoretical framework

2.1 Fiscal decentralisation, implementation and the street level

It is evident that the developmental value of a transfer is contingent on the quality of governance surrounding it, as opposed to its size. This assertion is supported by research which indicates that devolved health systems yield inconsistent results across sub-national units

(Mahmood et al., 2024; Morales-Casetti et al., 2024). Consequently, a high absorption rate may be observed in conjunction with weak outcomes, as absorption metrics are designed to gauge execution rather than effectiveness. The implementation-gap tradition, and in particular the street-level bureaucracy perspective, provides a comprehensive explanation for this phenomenon. The meaning of a policy is interpreted and enacted by frontline actors and institutional conditions. In weak-state or remote settings, the gap between formal rules and delivered services widens rather than closes (Peeters & Campos, 2023). Community participation research posits that plans formulated without the involvement of the target communities tend to misread needs and erode ownership (Mamokhere & Meyer, 2023; Yang et al., 2024).

2.2 Accountability, records and Indigenous data visibility

In the domain of public finance, the prevailing school of thought, as articulated by prominent scholars such as Ferry et al. (2023), Krah and Mertens (2023), and Mahmud (2024), posits that effective oversight by citizens and oversight bodies is contingent upon transparency in reporting, the efficacy of external audit processes, and the maintenance of credible records. This assertion underscores the significance of these three factors in enabling citizens to hold public institutions accountable for their actions. Furthermore, the literature emphasises that the establishment of trust in public institutions is predicated on the perception of responsiveness and performance. In instances where administrative data are incomplete or untimely, both accountability and planning are found to be deficient (Aron et al., 2024; Lundin et al., 2022). For Indigenous populations, this predicament is characterised by an absence of visibility, which is compounded by the dearth of disaggregated data. This absence of data renders communities epidemiologically and administratively invisible, thereby obscuring the very inequities that affirmative policy exists to correct (Glover, 2025; Oronce & Nguyen, 2025). However,

constructive alternatives do exist in the form of approaches led by Indigenous communities and data-sovereign approaches (Baxter et al., 2024).

2.3 Geography, service access and the sustainability of interventions

The distance and the friction of terrain, especially across water bodies, shape access independently of facility counts (Leyso & Umezaki, 2024; Macharia et al., 2023), and small-island and coastal communities face compounding climatic and infrastructural risks (Hernández-Delgado, 2024). Maternal, newborn and immunisation services are particularly sensitive to this friction and to the depth of the health workforce(Bacciaglia et al., 2023; Dickson et al., 2022; Dimitrova et al., 2023; Harris et al., 2026; Morgan & M Breau, 2024; Noya et al., 2021; Williams et al., 2024) , and service systems that were already thin proved fragile under the shock of the pandemic (Ahmed et al., 2022). The burden of malaria, tuberculosis and HIV, and the rise of non-communicable disease, further test primary systems in such places (Wang et al., 2024; Woldesenbet et al., 2025), as does the unevenness of financial protection and universal coverage for Indigenous peoples (Radheshyam et al., 2025; Serván-Mori et al., 2024). Evidence on Indigenous health governance indicates that services are more effective when co-designed with communities and built on self-determination rather than delivered to them (Dawson et al., 2023; Dias et al., 2024; Ortiz-Prado et al., 2024; Roach & McMillan, 2022). Concurrent evidence on infrastructure and livelihood interventions demonstrates that hardware handed over without operating finance, maintenance arrangements and local ownership tends to fail, whether in rural sanitation or fisheries (Owusu, 2024; Sakas et al., 2022). Education access is predicated on the same logic of reach and sustainability as outlined by Kumar et al. (2023).

2.4 Research gap and purpose

When considered as a whole, these literatures indicate a conceptual framework within which input, measured as absorption, is influenced by an implementation-and-reachability gap and by the visibility or invisibility of disaggregated data. It is only in this manner that outcomes and perceived benefit are produced. The existing evidence base is lacking in this respect, insofar as this frame has rarely been tested at the scale of individual Indigenous over-water villages, where it should be most acute. The objective of this study is to examine the South Jayapura District to elucidate the reasons why an affirmative transfer with near-complete absorption may still fail to reach its intended beneficiaries.

3 Methods

3.1 Research design

The present study employs a qualitative, collective (multiple) case-study design (Creswell & Poth, 2018; Yin, 2018), treating each of the two over-water villages of South Jayapura District as a bounded case and comparing them in order to surface mechanisms rather than to generalise statistically. As Yin (2018) contends, the case study is particularly well-suited to elucidating the "how" and "why" questions concerning contemporary phenomena when assessed within their real-life contexts, wherein the distinctions between the phenomenon and its context are not readily discernible. Similarly, Creswell and Poth (2018) position the case study as an exhaustive examination of constrained systems through meticulous and varied sources of evidence. The design is considered appropriate in light of the explanatory nature of the research questions, which pertain to the delivery of programmes and the reasons for discrepancies between records and actualities. These questions are situated within a distinct institutional and geographical context..

3.2 Study site

The research site is situated in South Jayapura District, which is one of five districts that constitute Jayapura City, Papua Province, Indonesia. The district has a population of approximately 101,403 inhabitants, distributed across a land area of 43.86 square kilometres. Despite its urban core, the district includes two Indigenous over-water settlements, namely Youtefa Bay, Tobati and Tahima Soroma (Kayopulau), which are only accessible by boat. The district's health capacity is comparatively limited. It is served by 11 physicians, 26 nurses and 18 midwives, who collectively cater to the population. Notably, all of the city's primary health centres (pus sekted) are non-inpatient facilities. Consequently, any admission or complication necessitates referral across the bay to the city centre.

3.3 Sampling and participants

The sampling method employed was purposive and site-based, following Patton's (2014) logic of selecting information-rich cases that illuminate the questions under study. The selection of both over-water villages as critical cases is predicated on the premise that, in the absence of an affirmative transfer, it is improbable for the most challenging conditions to manifest elsewhere (Patton, 2014; Yin, 2018). Within each village, key informants were selected based on their formal and customary knowledge of programme delivery. These informants included village secretaries, auxiliary health-post (Pustu) cadres, village heads (kepala kampung) and customary leaders (Ondoafi). The participants in the study comprised the village secretaries of Tobati and Kayopulau, both village heads, and the Ondoafi of each village. The combination was designed to capture both the administrative and the customary accounts of the same interventions, thereby facilitating within-case triangulation (Lincoln et al., 1985).

3.4 Data collection

The data collection process involved the utilisation of a structured field-verification instrument that was applied in July 2026. This instrument encompassed four distinct components. The

initial matrix comprised twenty-one items pertaining to Special Autonomy health programmes, with each item meticulously verified as either confirmed as delivered in the village, not delivered with residents being directed to a primary health centre or hospital, or partial and indeterminate, indicating beneficiaries who were wholly or partly non-Indigenous. The second component entailed an inventory of the actual facilities, health personnel and services in each village. The third instrument employed was a perception scoring sheet on which informants were invited to rate the benefit of each development pillar from one, meaning not beneficial, to five, meaning very beneficial. The fourth phase of the study comprised semi-structured interviews, the purpose of which was to elaborate the scores and matrix entries, and to record priority needs. Documentary evidence, including beneficiary decrees and integrated health-post registers, was requested in each village to corroborate oral accounts. It is important to note that no generative artificial intelligence tool was utilised in the generation, analysis or interpretation of the data reported in this article.

3.5 Ethical considerations

The ethical considerations that were applied were in accordance with the norms of the commissioning evaluation. Participation in the study was voluntary and informed; informants spoke in their official and customary capacities and are identified here only by role, except where their public office makes attribution unavoidable. No clinical or personally identifying patient data were collected. As the material is derived from an official evaluation of public expenditure, the analysis places greater emphasis on institutional accountability than on individual conduct.

3.6 Data analysis

The analysis was conducted in three stages, each of which was guided by established criteria for qualitative trustworthiness (Lincoln et al., 1985; Nowell et al., 2017). Initially, the twenty-

one item verification matrix was scored and summarised per village and subsequently pooled, yielding a village-level confirmation rate, defined as confirmed items divided by total observations. This provided a simple and auditable measure of reach. Secondly, the interview transcripts and open-ended matrix notes were analysed through reflexive thematic analysis following the six-phase approach of Braun and Clarke (2022). The material was initially read and coded inductively. Codes were then clustered into candidate themes, and these themes were reviewed against the full dataset and refined. The researchers treated their own interpretative position as a resource rather than a bias. Four themes were identified: reach and the geography of access; targeting and the visibility of Indigenous beneficiaries; the sustainability and ownership of transferred assets; and the disconnection of villages from the planning and accountability chain. Thirdly, triangulation was employed within cases, through the comparison of the accounts of administrative and customary informants, and between the village data and agency records, with the objective of elucidating convergences and contradictions, including the risk of double counting between Special Autonomy, Village Fund and village allocation sources, rather than obscuring these issues. In accordance with the principles established by Lincoln and Guba (1985), this pursuit of credibility and confirmability through the utilisation of multiple sources and the establishment of an auditable trail serves to underpin the trustworthiness of the findings, as operationalised for thematic analysis by Nowell et al. (2017). The purpose of the present study was to treat perception scores descriptively and interpret them alongside the qualitative themes. This approach was adopted in order to avoid the use of statistical estimates.

4 Results

The results are organised around the three research questions and are supported by four tables and two figures, each with a distinct analytical role. The tables present the detailed numerical

data, organised into categories and distributions. The figures, in contrast, demonstrate the underlying patterns.

4.1 Setting and service capacity

Table 1 Setting, facilities and health service capacity in the two customary over-water villages of South Jayapura District, 2025–2026

Indicator	Tobati	Tahima Soroma (Kayopulau)
Setting	Customary over-water village, Youtefa Bay	Customary over-water village, Youtefa Bay
Auxiliary health post (Pustu)	1 (Vano) + 1 integrated health post, good condition	1 (Camar) + 1 integrated health post, good condition
Health cadres (active / Indigenous)	12 / 10 — paid from Village Fund	6 / 4 — paid from Village Fund
Specialist doctor visits per year	1	1
Pregnant women; under-fives served (latest)	2 pregnant; 6 under-fives	6 pregnant (0 Indigenous); 65 under-fives (15 Indigenous)
Prominent illnesses	Malaria, diarrhoea, skin disease	Malaria, acute respiratory infection, diarrhoea, skin disease
Emergency ambulance service	None (island condition)	None (island condition)
Health-insurance coverage status	Unknown (unrecorded)	Unknown (unrecorded)

Source: compiled by the authors from the field-verification inventory, 2026

As demonstrated in Table 1, the delivery base is notably thin. Each village is served by a single auxiliary health post and one integrated health post. Specialists visit once a year, and no emergency ambulance or maritime referral capability exists. Health cadres are active in both villages, but rather than being remunerated from Special Autonomy funds, they are paid from the Village Fund. The absence of recorded health insurance coverage was observed in both villages, with documentation of the number of Indigenous beneficiaries only being recorded in Kayopulau. Notably, none of the six pregnant women and fifteen of the sixty-five under-fives most recently served were Indigenous.

4.2 Village-level verification of health programmes

Table 2 Village-level verification of twenty-one Special Autonomy health programme items, July 2026

No.	Programme item	Tobati	Kayopulau
1	Maternal health in pregnancy (obstetric specialist visit)	✓	✓
2	Delivery care	✗	✗
3	Newborn care (paediatric specialist)	✓	✓
4	Community and child nutrition	✓	✓
5	Elderly health	✓	✓

6	Early detection of hypertension	✓	✓
7	Diabetes mellitus service	✗	✓
8	Severe mental-disorder service	✗	✗
9	Mental-health service	✗	✗
10	Early detection of substance use	✗	✓[a]
11	Presumptive tuberculosis service	✗	✗
12	HIV-risk service (antiretroviral therapy)	✓	✗
13	Communicable and non-communicable disease control	~	✓[a]
14	Surveillance and immunisation	✗	✓
15	Outbreak early-warning and response	✗	✓
16	Emergency ambulance service	✗	✗
17	Basic and specialist medical services	✓	✓
18	Medical-equipment procurement	~	✗
19	Consumables and health information network	✗	✗
20	Health-cadre incentive from Special Autonomy	✗	✗
21	Healthy city and healthy village forum	✗	✓
	Confirmed as delivered	**7**	**12**

✓ confirmed as delivered in the village; ✗ not delivered, with residents directed to a primary health centre or hospital; ~ partial or indeterminate. Of 42 observations, 19 (45.2%) were confirmed, the lowest rate among the verified districts. Source: compiled by the authors from the field-verification instrument, 2026

[a] Delivered, but beneficiaries partly or wholly non-Indigenous

As illustrated in Table 2, seven of the twenty-one programme items were delivered in Tobati and twelve in Kayopulau. This constitutes a pooled confirmation of nineteen out of forty-two observations, representing 45.2%. It is noteworthy that this figure is the lowest among the verified districts. The distribution of confirmed items by category revealed a concentration in community-based preventive care, encompassing antenatal visits, infant and under-five nutrition, elderly care, and hypertension screening. In contrast, delivery care, tuberculosis, HIV, severe mental health care and the emergency ambulance service were not delivered, with residents being referred across the bay.

4.3 The structure of reach across service tiers

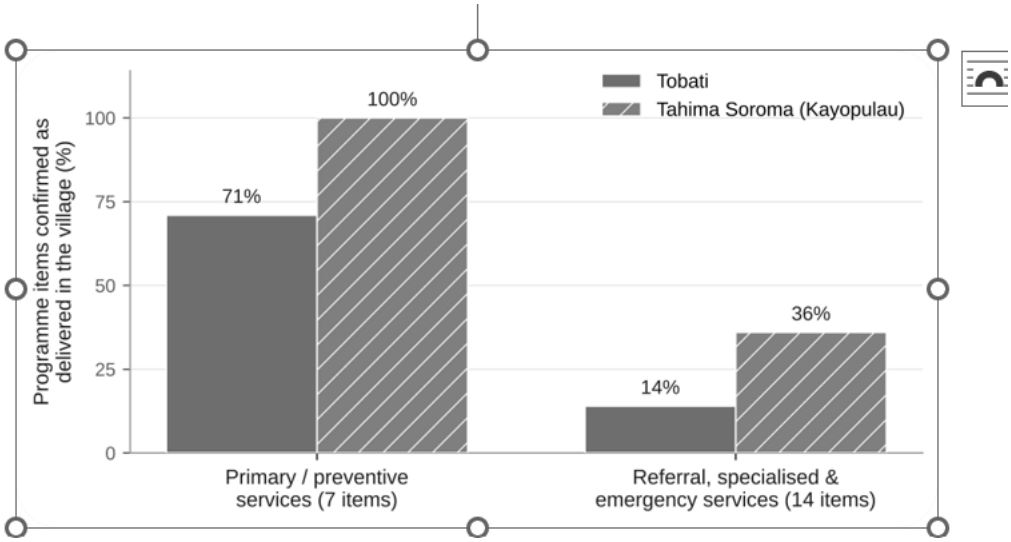


Fig. 1 Reachability of Special Autonomy health programmes by service tier in two customary over-water villages. The twenty-one items of Table 2 are regrouped into a primary and preventive tier (7 items) and a referral, specialised and emergency tier (14 items). Bars show the percentage of items in each tier confirmed as delivered in the village

As demonstrated in Figure 1, the decline in reach does not occur in a uniform manner, but rather exhibits a pattern of breaks along a tier line. Primary and preventive services achieved 71% coverage of items in Tobati and 100% in Kayopulau, while referral, specialised and emergency services registered a decline to 14 and 36 % respectively. The discrepancy between the tiers is approximately 57% points in Tobati and 64% in Kayopulau. This discrepancy occurs precisely at the point at which care must cross water, thereby identifying the reachability deficit at the referral tier rather than any shortage of primary contact.

4.4 Targeting and the visibility of Indigenous beneficiaries

As indicated by the stipulations appended to numerous items in Table 2, it was evident that the beneficiaries were either partially or fully non-Indigenous. This phenomenon was most pronounced in Kayopulau, where the predominant population was non-Indigenous and health services provided under Special Autonomy were administered without any differentiation based on Indigenous status. The flagship city health scheme was not recognised by residents, who reported paying for care through national health insurance, indicating a weak outreach strategy. In both villages, no beneficiary decree for adequate housing was obtained, and

documentary evidence was further eroded in Tobati by the loss of supporting files during a change of village officials in 2026. It has been reported that health-cadre incentives and supplementary feeding were financed from the Village Fund, yet appear as Special Autonomy outputs. Consequently, some recorded outputs are at risk of double-counting, and therefore cannot be treated as verified Special Autonomy achievements.

4.5 Perceived benefit: distribution and profile

Table 3 Perceived benefit of Special Autonomy by development pillar and informant in two customary over-water villages

Village — informant	Healthy	Smart	Productive	Infrastructure	Governance
Tobati — village head	2	1	1	2	1
Tobati — Ondoafi (customary leader)	1	1	1	1	1
Kayopulau — Ondoafi (customary leader)	3	3	1	5	3
Kayopulau — village head	5	5	3	3	5

Source: compiled by the authors from the perception scoring sheet, 2026

As illustrated in Table 3, the informant scores themselves, and their spread, are indicative of their level. In the case of Tobati, both informants allocated a rating of one to all five pillars, indicating a minimal perception of benefit. The customary leader assigned the lowest possible score, while the village head assigned a marginally higher score. In Kayopulau, the two informants' assessments diverged markedly. The village head assigned a rating of five to most pillars and characterised governance as fully transparent. Conversely, the customary leader assigned a rating of approximately two points lower to the same pillars and assigned the productive pillar the minimum rating. This finding, which pertains to the divergence between administrative and customary authority within the village, serves as a notable observation. It is important to note that a single respondent cannot be considered representative of the entire village.

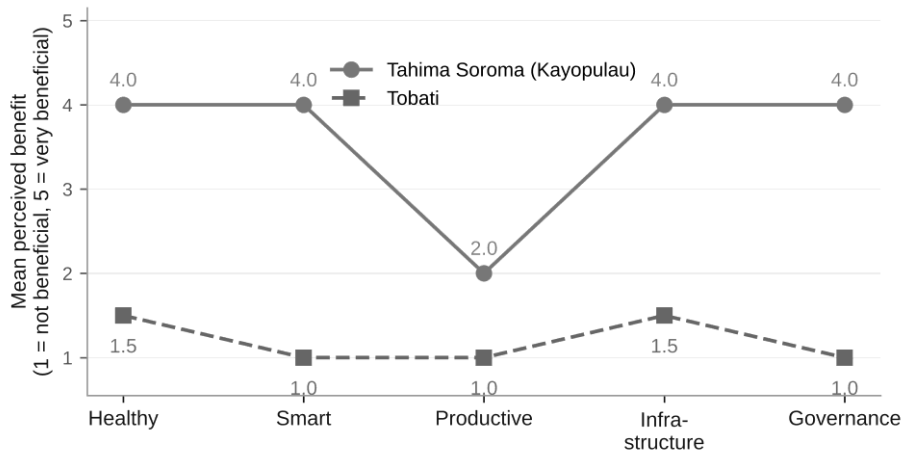


Fig. 2 Profile of perceived benefit across development pillars in two customary over-water villages. Each line is the village mean of the two informant scores reported in Table 3, on a scale from 1 (not beneficial) to 5 (very beneficial)

The term "village" is defined in Figure 2, which reveals a cross-pillar pattern that is not emphasised by the informant rows. The two profiles under consideration run almost parallel, yet are situated at significantly different altitudes. Kayopulau is positioned approximately two to three points above Tobati on every pillar. In contrast, the Tobati profile is pressed against the floor of the scale, thereby resulting in a difference between the villages of a level nature rather than in terms of shape. It is evident that both profiles demonstrate a decline at the same point, which is defined by the productive pillar. This results in the formation of a shared trough, while infrastructure and health form the peaks.

4.6 Sustainability of transferred assets

Table 4 Verified cross-pillar outputs and their functional status in two customary over-water villages

Output	Status at verification
Adequate housing for Indigenous households	Verified built and occupied in both villages (19 units in the district, 2023 and 2025); good condition, but no beneficiary decrees available
Village jetties (Tobati, 2025)	Two jetties verified, in good condition
Electronic village library (Kayopulau)	Meets the national library standard; active, open three times a week
Fisheries assistance (cages and fingerlings)	Not sustained; first batch of fingerlings died, cages partly empty
Domestic wastewater system	Built in both villages but non-functional; waste still discharged directly to the sea
Health-cadre incentives and supplementary feeding	Reported as funded by the Village Fund though recorded as Special Autonomy outputs (double-counting risk)

Source: compiled by the authors from the field-verification instrument, 2026

As illustrated in Table 4, there is a clear distinction between outputs that endured and those that did not. A verification process was undertaken, the results of which indicated that housing units for Indigenous households, two village jetties and the Kayopulau electronic library were confirmed as having been constructed, are in use or are operational. Conversely, the domestic wastewater systems in both villages were non-functional, resulting in the discharge of waste into the sea. Furthermore, fisheries assistance had collapsed following the death of the first batch of fingerlings. It is imperative to note that a further category, comprising cadre incentives and supplementary feeding, is recorded as Special Autonomy outputs but reported as financed by the Village Fund. This configuration carries a risk of double-counting.

5 Discussion

When evaluated in the context of the conceptual framework outlined above, wherein input is influenced by an implementation-and-reachability gap and the visibility of disaggregated data prior to its dissemination in outcomes and perceived benefit, the findings illustrate a policy that initially demonstrates success, but subsequently encounters challenges at each subsequent stage. The absorption process in Jayapura City was approaching completion, and several long-term indicators exhibited signs of improvement. However, in the two over-water villages, the transfer programme was implemented unevenly, lacked evidence of targeting the indigenous population it designated, and was not sustained in certain sectors of the productive and sanitation domains.

5.1 A structured rather than diffuse reachability gap

The distribution of healthcare services in the two villages was organised in a bifurcated manner. Preventive primary care services were accessible to residents through the auxiliary health post and the integrated health post. However, referral and specialised services were not available, and emergency maritime care was not provided. Figure 1 contributes to the existing body of

knowledge by demonstrating that the observed gap is structured rather than diffuse. The phenomenon of Reach did not diminish gradually with distance; rather, it broke along a tier line, thereby maintaining its functionality for the services that a village post can deliver in situ while collapsing for those services that require traversal across water. This finding suggests that, in archipelagic contexts, the primary constraint does not stem from the absence of a facility but rather from the geographically fixed cost of referral, which no amount of village-level primary provision can substitute for. This interpretation is consistent with the evidence that accessibility is governed by the friction of terrain rather than by the number of facilities (Leyso & Umezaki, 2024; Macharia et al., 2023), and that small-island communities face compounding locational risks (Hernández-Delgado, 2024). The infrequency of these visits, which are conducted only once a year, is indicative of the limited expertise available in the district workforce. This limitation has been well-documented in remote settings (Noya et al., 2021). It can be extrapolated from the evidence presented that the services most impacted are those which are time-critical, such as obstetric emergencies, skilled delivery and outbreak response. The absence of a maritime emergency capability has been demonstrated to convert a referral delay into a mortality risk. This is consistent with the sensitivity of maternal and newborn outcomes to access, as documented in remote and Indigenous settings (Bacciaglia et al., 2023; Dickson et al., 2022; Harris et al., 2026; Morgan & M Breau, 2024).

5.2 Implementation, accountability and the sustainability of assets

The discrepancy between documented outcomes and local realities can be most effectively interpreted through the lens of implementation gaps and accountability frameworks. The low confirmation rate, the non-functional wastewater units and the collapsed fisheries assistance are concrete instances of the street-level transformation of policy in a weak-delivery environment, where what is funded and what is delivered diverge (Peeters & Campos, 2023), and of the familiar failure of hardware transferred without ownership, operating finance and

maintenance (Owusu, 2024; Sakas et al., 2022). The issue of financial resource duplication across Special Autonomy, Village Fund and Village Allocation sources has been well-documented as a challenge in the context of accountability and record-keeping. Absent comprehensive, disaggregated and timely data, oversight bodies and planners are unable to verify the beneficiaries of services or the entities responsible for financial transactions (Aron et al., 2024; Ferry et al., 2023; Krah & Mertens, 2023; Lundin et al., 2022).

5.3 Targeting and the invisibility of Indigenous beneficiaries

The targeting problem merits particular attention as it subverts the conventional interpretation of an affirmative transfer. In Kayopulau, where the majority of residents are non-Indigenous, services sourced from Special Autonomy were delivered without disaggregation. Consequently, an instrument justified by the needs of Indigenous Papuans was, at the point of delivery, indistinguishable from a general public service. The question of whether this represents benign inclusion or a quiet dilution of the affirmative mandate cannot be adjudicated from the records, and that indeterminacy is itself the finding. Absent a disaggregated register, the distributional question that defines the policy remains unanswerable, a condition that the extant literature on Indigenous data describes as epidemiological and administrative invisibility (Glover, 2025; Oronce & Nguyen, 2025), and comparative work on financial protection demonstrates that Indigenous populations can remain systematically undercovered even where nominal entitlement exists (Serván-Mori et al., 2024). The risk is therefore not only of exclusion but also of untraceability: resources may reach Indigenous residents, non-Indigenous residents, or neither, and the system cannot distinguish between these groups. When considered in conjunction with the extant literature, which demonstrates that local governance arrangements influence the distribution of devolved resources (Yang et al., 2024), the absence of a register represents a significant risk. Indeed, it removes the only safeguard that would

allow for the detection of capture, leakage or double counting. It is the constraint of invisibility, rather than that of scarcity, that is the binding constraint.

5.4 Legitimacy, perception and the measurement of benefit

The divergence in perceived benefit, minimal in Tobati and divided between administrative and customary authority in Kayopulau, corresponds to the record of failed assets and the disconnection of villages from the planning chain. In circumstances where residents were not able to identify the funding source or play an active role in determining beneficiaries, the level of benefit received was found to be low. This finding aligns with the extant literature, which demonstrates that levels of participation and collaborative design are positively correlated with the effectiveness and legitimacy of services for Indigenous communities (Dawson et al., 2023; Dias et al., 2024; Mamokhere & Meyer, 2023; Roach & McMillan, 2022). Furthermore, it has been demonstrated that levels of trust in institutions are positively correlated with perceived responsiveness (Mahmud, 2024). Figure 2 clarifies this issue by offering a novel perspective on the measurement of benefits. The two village profiles differed in level but not in shape, and both dipped at the productive pillar; the convergence of that trough across otherwise divergent villages indicates a pillar-specific weakness attaching to the design of economic interventions, namely handovers without multi-year accompaniment, rather than to any single community's circumstances. The observation that administrative and customary authorities interpret the same programmes in such divergent ways serves as a cautionary indication against evaluation designs that accord undue privilege to a single respondent or an aggregate score. In contexts characterised by plural legitimate authorities, it is imperative that measurement methodologies are commensurate.

5.5 Implications for policy and theory

The following three policy priorities are proposed. Firstly, a disaggregated one-data system for Indigenous Papuans, constructed at the village level by life-cycle group and utilised as the mandatory basis for planning, would terminate the invisibility that currently renders affirmative targeting unverifiable, in accordance with Indigenous data-governance approaches (Baxter et al., 2024; Glover, 2025; Oronce & Nguyen, 2025). Secondly, it is imperative that services for over-water and remote communities are geographically affirmative and co-designed, with guaranteed specialist-visit frequencies, a maritime emergency-referral capability, and cadre arrangements whose funding source is transparent (Dawson et al., 2023; Dias et al., 2024; Macharia et al., 2023). Thirdly, the transfer of physical assets should be contingent on operating finance, maintenance and local ownership, and villages and their customary institutions should be re-integrated into the planning and accountability chain (Mamokhere & Meyer, 2023; Owusu, 2024; Sakas et al., 2022). In principle, decentralisation scholarship posits that the developmental value of a transfer is contingent on the prevailing governance framework rather than on its physical dimensions (Mahmood et al., 2024; Morales-Casetti et al., 2024). This case study delineates the capacities that facilitate delivery at the final mile, encompassing frontline delivery across a maritime boundary, disaggregated data that enables auditable targeting, transparent reconciliation that precludes double counting, and the re-integration of customary institutions. In the context of debates concerning universal coverage and affirmative targeting in a broader sense, the case under consideration serves as a pertinent reminder that coverage that has been documented at the city or district level has the potential to become obsolete when it comes into contact with the geographical and data systems of the communities that such policies are designed to benefit (Radheshyam et al., 2025).

5.6 Limitations and directions for future research

The study is confined to two over-water villages in a single district and a single verification round in July 2026, thus its findings illuminate mechanisms rather than lend support to

statistical generalisation to Jayapura City or to Papua. The key informants in this study were village officials, customary leaders and health cadres, rather than service users. Consequently, community experience is represented indirectly. The perception scores are based on a small number of informants and are interpreted descriptively. A number of programme items could not be confirmed owing to missing documentation. In addition, the loss of files during a change of village leadership further limited corroboration. Consequently, the same documentary weakness that is a substantive finding also constrains the analysis. It is recommended that future research endeavours extend the current case base to encompass additional over-water, coastal and highland Indigenous villages. Moreover, a longitudinal design should be adopted, whereby the same villages are revisited across budget years. This approach would facilitate the tracking of the reachability gap and the durability of assets over time. It is imperative that studies incorporating service user voices, particularly those of women of reproductive age and caregivers of young children, be conducted. Moreover, the integration of qualitative verification with routinely collected, disaggregated facility data, where feasible, is crucial. It is submitted that further elucidation is required into the manner in which administrative and customary channels of legitimacy can be reconciled in the context of planning and accountability. Such research, co-designed with customary institutions, would serve to further illuminate this area.

6 Conclusion

In two customary over-water villages of South Jayapura District, Special Autonomy health programming reached residents for routine preventive care but not for referral, specialised or emergency services; fewer than half of the verified programme observations could be confirmed as delivered; transferred sanitation and fisheries assets had ceased to function; the flagship health scheme was unknown to residents; and targeting of Indigenous Papuans could

not be verified because services were delivered without disaggregation and supporting documents were often missing. Consequently, perceptions of benefit were correspondingly low and internally divergent. The central conclusion of this study is that, in this setting, the effectiveness of an affirmative transfer is constrained not by the volume of money or the rate of its absorption, but by a reachability gap, by the administrative and epidemiological invisibility of the intended beneficiaries, and by the non-sustainability of transferred assets, compounded by the disconnection of villages and customary institutions from the planning and accountability chain.

Declarations

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Competing interests The authors have no relevant financial or non-financial interests to disclose.

Ethics approval This study constitutes a component of an official evaluation of public expenditure, and it should be noted that it did not involve clinical intervention or the collection of personally identifying patient data. The informants participated in the study in their official and customary capacities.

Consent to participate Informed consent was obtained from all individual participants included in the study. Participation in the study was entirely voluntary, and the participants were informed of the purpose and use of the data.

Consent to publish Participants consented to the publication of anonymised and role-attributed information. No individually identifying personal data are reported.

Data availability The verification matrices, facility inventories and anonymised perception scores that were generated and analysed during the current study are available from the corresponding author upon reasonable request. The data are not subject to public archiving due to their content, which comprises village-level administrative information collected under the terms of an agreement with the commissioning agency. Access to and reuse of the data is contingent upon the agency's approval.

Author contributions Author contribution statements are provided on the title page.

Use of artificial intelligence No generative artificial intelligence tool was used to generate, analyse or interpret the data reported in this article.

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