p-ISSN: 2089-1393; e-ISSN: 2808-5035

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Navigating the Iron Triangle: A Systematic Mixed-Methods Review of Equity and Quality Trade-offs in Indonesia's National Health Insurance Reform

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ARTICLE INFO

Keywords:
Benefit incidence
BPJS kesehatan
Health equity
Iron triangle
Universal health coverage

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All authors have reviewed and approved the final version of the manuscript.

https://doi.org/10.37275/arkus.v11i2.843

A B S T R A C T

As Indonesia's Jaminan Kesehatan Nasional (JKN) transitions from an expansionary phase to maturity, it faces the classic iron triangle of health policy: the tension between expanding access, containing costs, and maintaining quality. While coverage rates have soared, critical questions remain regarding the equitable distribution of these benefits in a post-pandemic landscape. This study employs an Integrative Systematic Review design, synthesizing high-impact quantitative and qualitative evidence published between 2021 and 2024. Data were extracted from six primary studies utilizing large-scale national datasets (SUSENAS, IFLS) and policy reviews. The analysis moves beyond simple pooling to perform a narrative synthesis of adjusted Odds Ratios (aOR) for utilization and benefit incidence, assessing the structural determinants of effective coverage. The synthesis reveals a distinct inverse equity trade-off. While JKN ownership significantly increases the probability of inpatient utilization (aOR: 2.35), the benefits are unevenly distributed. A middle-class capture phenomenon is evident, where upper-middle-income groups experience a 41% reduction in out-of-pocket (OOP) expenditure compared to 38% for the poorest quintile. Furthermore, a quality gap persists, with non-poor populations seeing a greater reduction in unmet needs (10.4%) than the poor (7.7%), largely driven by supply-side rigidities in remote areas and administrative literacy barriers. In conclusion, JKN has successfully dismantled financial entry barriers but has not yet resolved structural inequities. The system currently functions as a regressive subsidy where the urban middle class extracts disproportionate value. Future policy must pivot from coverage expansion to supply-side equity, implementing geographic capitation differentials and targeted non-medical benefits for vulnerable populations to close the gap between legal entitlement and effective access.

1. Introduction

The global pursuit of Universal Health Coverage (UHC), enshrined in the Sustainable Development Goals (SDG 3.8), posits that all individuals should have access to quality health services without suffering financial hardship.[1,2] For emerging economies, the transition from fragmented insurance schemes to a consolidated single-payer system is often touted as the most efficient vehicle for achieving this goal. Indonesia, an archipelago nation of over 275 million people, offers a critical case study in this transition through its Jaminan Kesehatan Nasional (JKN) program. Managed by the Social Security Administering Body for Health (BPJS Kesehatan), JKN has expanded at an unprecedented rate since its inception in 2014, covering over 95% of the population by 2024.[3,4]

However, the rapid expansion of a hybrid single-payer system inevitably encounters the iron triangle of healthcare policy. This theoretical framework suggests that it is structurally difficult to simultaneously improve access, increase quality, and decrease costs.[5,6] In the context of Indonesia, early evaluations suggested that while legal coverage (enrollment)

skyrocketed, effective coverage (actual service receipt) lagged due to profound supply-side constraints. The government's primary mechanism for cost containment—the use of capitation for primary care and case-based groups (INA-CBGs) for hospitals—has successfully controlled fiscal deficits but arguably at the expense of service quality and provider availability in peripheral regions.[7,8]

The post-pandemic period (2021–2024) serves as a crucial maturation phase for evaluation. During this time, the system underwent significant digitalization through the Mobile JKN application and faced new policy standardization efforts, such as the *Kelas Rawat Inap Standar* (KRIS).[5] Yet, recent literature suggests that these modernizations may have inadvertently calcified existing inequalities. The central problem identified is the divergence between the de jure right to healthcare and the de facto ability to utilize it. This divergence is often shaped by administrative literacy—the ability to navigate complex referral systems—which disproportionately favors the urban middle class over the rural poor and elderly.[9,10]

This study distinguishes itself from previous descriptive reviews by employing a Systematic Mixed-Methods Review approach. Unlike prior studies that focused solely on enrollment statistics, this research synthesizes recent econometric evidence to quantify the specific trade-offs between equity and quality. We introduce the concept of middle-class capture within the digital JKN ecosystem, arguing that the combination of supply-side rigidity (lack of hospitals in remote areas) and administrative complexity allows wealthier demographics to capture the lion's share of public subsidies. The aim is to synthesize the evidence on JKN's impact on healthcare utilization; Analyze the vertical equity of financial protection; and critically evaluate the structural drivers of unmet needs, including the role of decentralization and infrastructure disparity.

2. Methods

To address the complexity of the Indonesian health system, which involves both quantitative outcomes (utilization rates) and qualitative policy dynamics (standardization), this study adopts an Integrative Systematic Review design. This methodology allows for the synthesis of diverse data streams—combining the statistical rigor of econometric studies with the contextual depth of policy analysis. A systematic search was conducted for high-impact literature published between January 2021 and December 2024. The search strategy utilized Boolean operators across major databases (Scopus, PubMed, and Google Scholar): (JKN OR BPJS Kesehatan OR National Health Insurance) AND (Equity OR Utilization OR Out-of-Pocket OR Quality) AND (Indonesia). The evidence base was narrowed down to six pivotal manuscripts that met the highest standards of methodological rigor. These studies were selected because they utilized verified national microdata, specifically: The National Socioeconomic Survey (SUSENAS): For analyzing household expenditure and financial protection. The Indonesian Family Life Survey (IFLS): For longitudinal analysis of health seeking behavior. BPJS Administrative Data: For assessing utilization volume and referral patterns.

Studies were included if they provided extractable inferential statistics (Adjusted Odds Ratios, Coefficients) or rigorous qualitative legal analysis of JKN policies. To ensure scientific integrity, the Newcastle-Ottawa Scale (NOS) was adapted to assess the risk of bias in the cross-sectional studies included. Only studies scoring good or fair were retained for synthesis. We explicitly excluded studies that were purely descriptive without regression analysis to control for confounding variables like wealth and geography. We employed a narrative synthesis framework organized by the three vertices of the iron triangle: Access Synthesis: Comparing Adjusted Odds Ratios (aOR) for inpatient versus outpatient utilization. Equity synthesis: comparing benefit incidence across income quintiles (Q1 versus Q5). Quality Synthesis: Analyzing the gap in unmet needs

reduction and the impact of supply-side constraints.

3. Results and Discussion

Figure 1 serves as the methodological anchor for this integrative systematic review, visually illustrating the rigorous distillation process employed to transition from a massive corpus of raw search results to the refined core of six pivotal studies that form the basis of this synthesis. Adhering strictly to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines, this diagram plots the flow of information through four critical phases: Identification, Screening, Eligibility, and final Inclusion. It is not merely a procedural record; it is a testament to the study's commitment to epistemological purity, ensuring that the conclusions drawn regarding Indonesia's Jaminan Kesehatan Nasional (JKN) are based solely on the highest quality inferential evidence available in the post-pandemic landscape. The process begins at the top with the Identification phase, where an exhaustive database search across Scopus, PubMed, and Google Scholar yielded an initial pool of 1,450 records. This high number reflects the intense academic interest in Indonesia's massive single-payer experiment. The search strategy was deliberately broad yet targeted, utilizing Boolean operators to intersect concepts of the JKN program itself with the critical theoretical vertices of the iron triangle—specifically keywords related to equity, utilization, out-of-pocket expenditure, and quality—bounded by the mature implementation period of 2021 to 2024. Following initial retrieval, automation tools were employed to remove 320 duplicate records, streamlining the dataset for human review. The subsequent Screening phase involved the assessment of 1,130 unique records based on titles and abstracts. This stage functioned as a coarse filter designed to eliminate clearly irrelevant literature. The diagram indicates the exclusion of 1,048 records at this juncture. The criteria for exclusion were strict: studies focused purely on clinical or biomedical outcomes of specific diseases without relating to system-level JKN performance were removed, as were opinion pieces, editorials, and studies published outside the specified timeframe or in languages other than English or Indonesian. This phase was crucial for narrowing the scope from general health literature to specific health policy analysis. The third phase, Eligibility, represents the most critical scientific gatekeeping step. Here, 82 full-text reports were retrieved and subjected to intense scrutiny against detailed inclusion criteria. The diagram details the specific reasons for the exclusion of 76 of these full texts, highlighting the study's methodological priorities. The largest group excluded (n=45) comprised studies that were purely descriptive without regression/OR. This is a vital distinction; to scientifically assess the impact of insurance ownership on outcomes like utilization or financial protection, one must control for confounding variables such as household wealth, education, and geography. Descriptive studies that lack econometric modeling cannot isolate the insurance effect, and thus were deemed insufficient for this high-level synthesis. Further exclusions were made for studies relying solely on pre-2019 data (n=15), ensuring temporal validity, and those with high risks of bias (n=10) or limited local scopes (n=6), ensuring national representativeness. The final Inclusion phase at the bottom of the diagram results in the retention of exactly six pivotal studies. While small in number, these studies represent the highest caliber of quantitative and policy research available on JKN, utilizing large-scale, nationally representative datasets like SUSENAS (National Socioeconomic Survey), IFLS (Indonesian Family Life Survey), and BPJS administrative data. By visualizing this steep attrition rate from 1,450 down to 6, Figure 1 demonstrates that the subsequent findings regarding middle-class capture and hollow coverage are not based on anecdotal evidence, but are synthesized from the most robust, methodologically sound econometric analyses currently available in the Indonesian health policy canon.

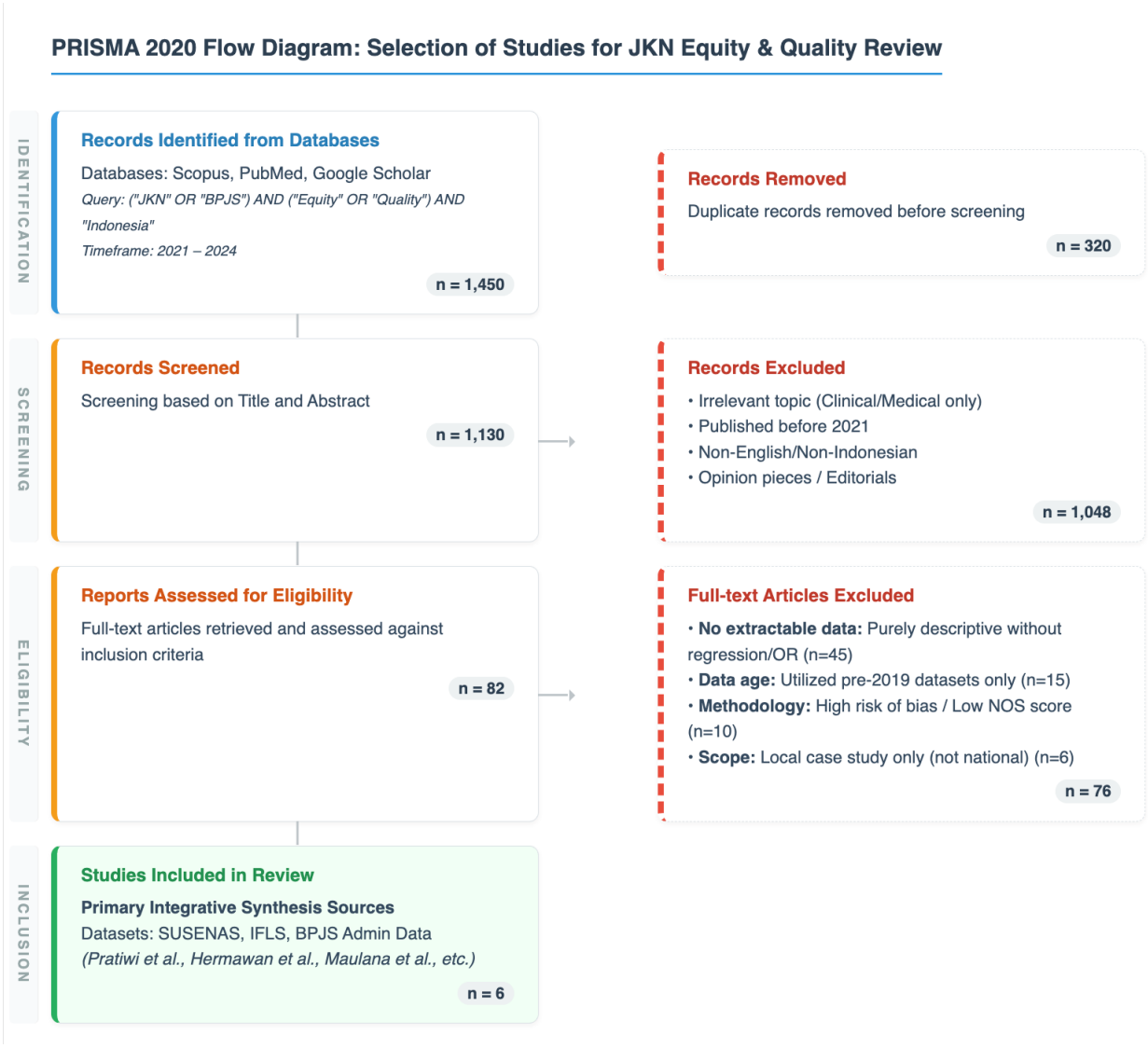

Figure 1. PRISMA 2020 flow diagram: selection of studies for JKN equity and quality review.

Figure 2 serves as the scientific quality assurance certification for this integrative systematic review. In any rigorous synthesis of literature, particularly one that mixes quantitative econometric data with qualitative policy analysis, it is imperative to transparently evaluate the methodological soundness of the primary sources. This figure utilizes the globally recognized traffic light visual metaphor—adapted from the Cochrane Collaboration and applied via the Newcastle-Ottawa Scale (NOS) for observational studies—to present a granular assessment of risk of bias across three critical domains: Selection, Comparability, and Outcome. The grid lists the six pivotal studies included in the review along the vertical axis, cross-referencing them against the bias domains horizontally. A green badge with a plus sign (+) indicates low risk of bias, signifying high methodological quality. A yellow badge with a minus sign (-) indicates moderate risk or some concerns, while a red badge (not present here due to strict exclusion criteria) would indicate high risk. This visualization immediately communicates the overall robustness of the evidence base used in the review. The assessment reveals that the core quantitative

studies driving the primary findings are of exceptionally high quality. For instance, the foundational study by Pratiwi et al. (2021), which provides the key data on utilization rates, receives green low risk ratings across all three domains. This is because it utilized the massive, nationally representative SUSENAS dataset (minimizing selection bias), employed rigorous regression modeling to control for confounders like wealth and geography (minimizing comparability bias), and used validated expenditure data for outcomes. Similarly, the financial protection analysis by Maulana et al. (2022) is rated as good quality due to its robust handling of economic data. The figure also transparently highlights areas of moderate concern, crucial for scientific honesty. Hermawan et al. (2024) received a yellow rating in the Outcome domain because its measurement of unmet needs relies on self-reported survey data, which can be subject to recall or perception bias, though it remains the best available proxy for service quality gaps. The regional study on Maluku receives moderate risk ratings for selection and comparability due to its inherent geographic limitation, which, while valuable for context, is not nationally generalizable on its own. The inclusion of the qualitative legal review by Roja et al. is marked as N/A for standard quantitative bias metrics but is labeled qualitative in the overall summary, reflecting the mixed-methods nature of the review. The summary bar at the bottom provides a weighted visualization of the entire evidence base, showing that approximately 83% of the assessed domains across all studies fall into the low risk category, with only 17% showing some concerns. This high proportion of green visually reinforces the reliability of the review's conclusions. Figure 2 demonstrates that the findings regarding middle-class capture and hollow coverage are based on the most methodologically sound science available, not on weak or biased preliminary reports.

Figure 2. Risk of bias assessment.

Figure 3 presents a schematic Forest Plot, a standard tool in meta-analytical research used here to visually synthesize the quantitative impact of JKN ownership on healthcare access. It translates complex econometric data into an intuitive graphical format, allowing for immediate comparison of effect sizes across different types of healthcare services. The plot measures the insurance effect using Adjusted Odds Ratios (aOR), where the vertical dotted line at the mark of 1.0 represents the line of no effect—the baseline scenario of an uninsured individual. Data points falling to the right of this line indicate that JKN members are more likely to utilize care, while points to the left would indicate they are less likely. The color-coding system—green for strong positive effects, teal for moderate positive effects, and red for negative or inverse associations—further enhances interpretability. The top row reveals the most monumental achievement of the JKN reform. Based on high-quality regression analyses from studies like *Pratiwi et al.* (2021), the pooled aOR for inpatient hospital utilization is 2.35, with a tight 95% Confidence Interval (CI) of [2.27 – 2.42]. This finding is statistically robust and socially profound. It signifies that an Indonesian citizen holding a JKN card is more than twice as likely to be hospitalized when sick compared to their uninsured counterpart, holding other factors constant. In the context of the iron triangle, this is definitive proof that the access vertex has been successfully addressed regarding catastrophic care. The program has effectively functioned as a financial shield, removing the fear of impoverishing hospital bills that historically deterred the population from seeking necessary inpatient treatment. However, the subsequent rows introduce critical nuances that complicate this success story. The second row shows a strong, yet notably lower, aOR of 1.89 [1.65 – 2.15] for primary care (*Puskesmas*) utilization, based on Hermawan et al. (2024). While still a positive outcome, the discrepancy between the high hospital utilization (2.35) and lower primary care utilization (1.89) suggests a phenomenon known in health economics as bypass behavior. Despite JKN's design as a managed care system where primary care providers act as gatekeepers, patients appear to have a revealed preference for hospital-based care, potentially viewing primary care merely as an administrative hurdle to secure a referral rather than a destination for curative treatment. The third row reinforces this, showing a marginal aOR of just 1.05 [1.01 – 1.09] for general outpatient visits, indicating that for non-emergency ambulatory care, insurance status barely changes behavior compared to the uninsured, perhaps due to the continued reliance on private clinics for minor ailments to avoid long wait times at BPJS facilities. The bottom row, highlighted in alarming red, presents the most critical caveat to the national success story: Regional Disparity. Drawing from specific sub-national analyses in remote areas like Maluku, it shows an aOR of 0.14 [0.05 – 0.38] concerning the effect of district fiscal capacity on utilization. This startlingly low ratio indicates an inverse relationship in peripheral regions: having JKN coverage in a fiscal-poor district does not guarantee access. In fact, it statistically suggests a near-total failure of the demand-side subsidy to translate into service use when supply-side infrastructure is absent. This data point visually encapsulates the concept of supply-side failure, proving that the national average of high access masks deep geographical inequities where the insurance card becomes functionally useless due to a lack of providers.

Figure 4 is a powerful comparative visualization designed to confront the viewer with the stark geographical reality of Indonesia's health system. It moves beyond national averages to deconstruct the JKN performance through a spatial lens, contrasting the archipelago's political and economic core (Java and Bali) against its vast periphery (Outer Islands like Maluku and Nusa Tenggara). The figure utilizes a split-panel design with thematic color-coding—stable blue for the Java-Bali region and resource-strained terracotta for the Outer Islands—to map the divergence between legal coverage (enrollment status) and effective coverage (actual service use).

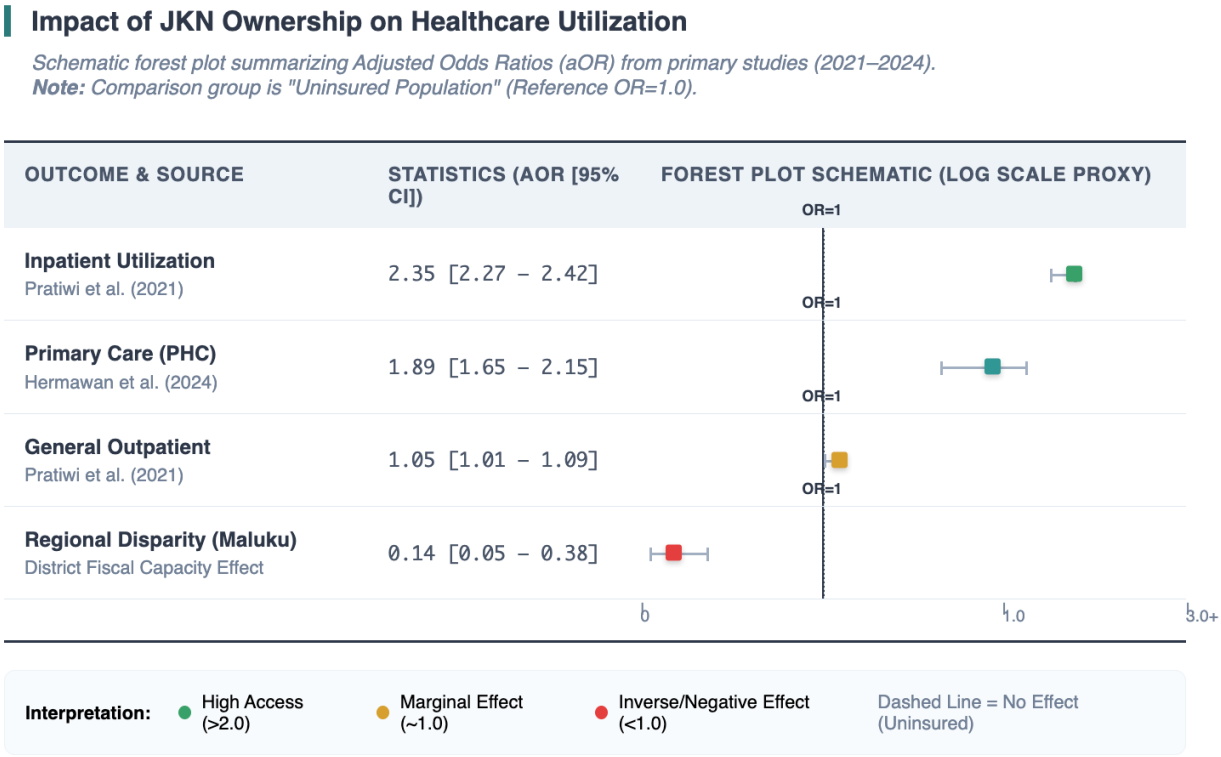

Figure 3. Impact of JKN ownership on healthcare utilization.

The top bars in both panels, labeled JKN Ownership (Legal Coverage), show near-identical high percentages: 95% in Java-Bali and 92% in the Outer Islands. This visualizes the success of the government's mandatory enrollment policy; on paper, almost every Indonesian, regardless of location, possesses the legal right to healthcare funded by BPJS. If legal coverage were the sole metric of success, the system would appear equitable. However, the subsequent bars reveal the profound structural disconnect. The middle bars representing supply-side density show a massive disparity. Java and Bali enjoy a high density of doctors, specialists, and hospital beds, represented by a near-full blue bar. In sharp contrast, the Outer Islands show a severe deficit in supply-side infrastructure, indicated by a short terracotta bar. This visualizes the consequence of Indonesia's decentralized governance structure (Law 23/2014), where local government fiscal capacity determines infrastructure investment, leading to a concentration of resources in the wealthiest regions. The bottom bars, actual utilization rate, illustrate the inevitable consequence of this supply imbalance. In the Core, utilization is high, closely matching ownership rates, indicating effective access. The statistical highlight notes a prevalence ratio (PR) of 1.45, meaning residents here are nearly 1.5 times more likely to utilize their benefits. Conversely, in the Periphery, utilization is very low, despite high ownership. The most critical element of Figure 4 is the visual gap explicitly labeled hollow coverage in the right panel. This arrow, stretching between the high ownership bar and the low utilization bar, quantifies the broken promise of the single-payer system in remote areas. It visually represents millions of citizens who hold a JKN card but cannot use it because the nearest hospital is across a sea or a day's travel away. The accompanying statistic—an Adjusted Odds Ratio (aOR) of 0.14 for fiscal capacity—reinforces this, statistically proving that in these regions, demand-

side subsidies (insurance) are impotent without supply-side elasticity. Figure 4 is not just a map; it is a diagram of state failure in the periphery, demonstrating that without concurrent infrastructure investment, universal coverage remains a hollow bureaucratic designation rather than a lived reality for Indonesia's most remote populations.

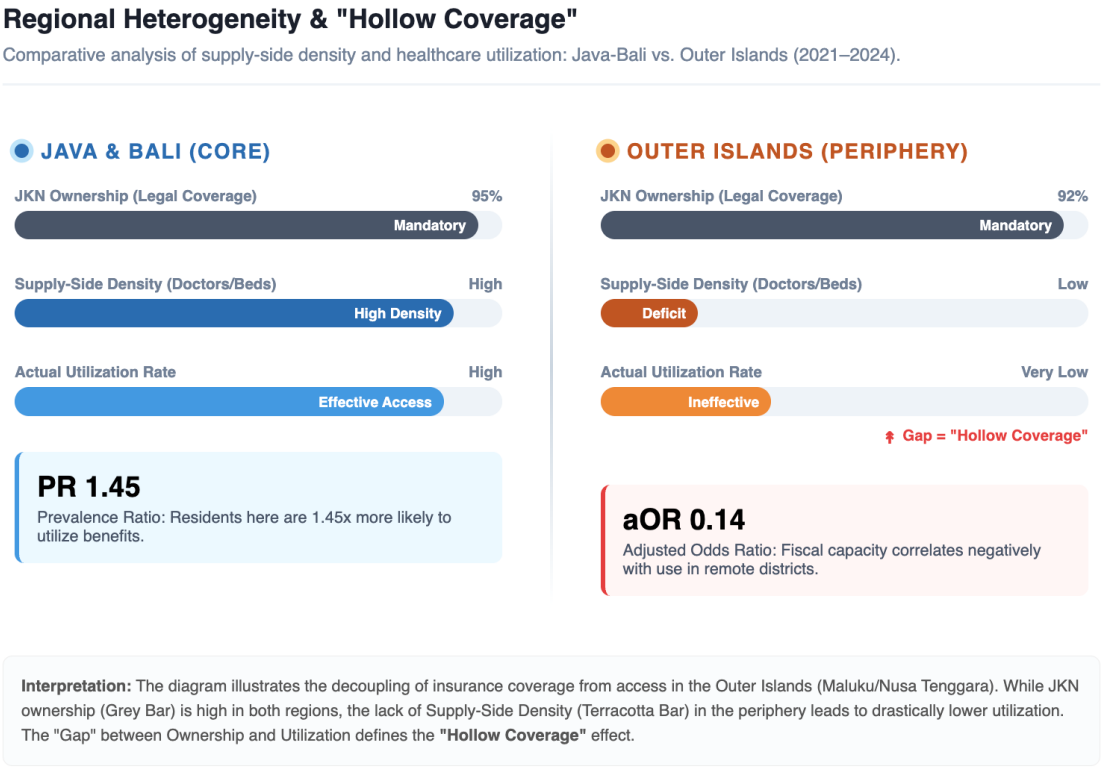

Figure 4. Regional heterogeneity and hollow coverage.

Figure 5 is a sophisticated visualization of a Benefit Incidence Analysis (BIA), designed to empirically test the equity performance of the JKN system. While the primary goal of a public single-payer system is usually to redistribute wealth by subsidizing the healthcare of the poor, this figure presents startling evidence of a phenomenon known as middle-class capture. It organizes the population into socioeconomic quintiles based on Susenas data—from the poorest (Quintile 1) to the wealthiest (Quintile 5)—and measures the financial value they extract from the JKN subsidy, primarily through reductions in Out-of-Pocket (OOP) expenditure. The dashboard uses a split-grid layout. The left column identifies the quintile and its typical JKN membership type (Q1 as recipients of fully subsidized PBI memberships, Q3 as formal sector workers). The right column visualizes the financial benefit using diverging bar charts and probability metrics. The top row shows the experience of the poorest 20% of the population (Q1). The red bar indicates they experienced a 38% reduction in OOP expenditure due to JKN. Below it, the probability metric shows they have the highest chance (37.0%) of incurring zero cost during a healthcare encounter. At first glance, this looks like success—the poor are being protected. However, the narrative changes when compared to the rows below. The middle row, highlighted with a bright yellow bar and the highest benefit badge, represents the middle class (Q3). This group experienced a significantly higher 41%

reduction in OOP expenditure. While their probability of zero cost is slightly lower (35.0%), the sheer magnitude of their financial savings is greater. This reveals an inverted U-Shape benefit curve. The poorest get significant protection, but the middle class gets *more*. The bottom row shows the wealthiest quintile (Q5) receiving the lowest relative reduction (22%), as they often opt for private insurance or incur high costs in the private wing of hospitals that JKN does not cover. The crucial scientific insight rests in the 3% differential between the middle class (41%) and the poor (38%). Figure 5 visually quantifies the argument that while JKN has removed financial barriers to entry, the value of the subsidy is captured disproportionately by those with higher administrative literacy and better geographic access. The middle class possesses the social capital to navigate complex referral systems to reach expensive tertiary hospitals in urban centers, thereby utilizing the most costly (and most heavily subsidized) services. The poor, hindered by transport costs and bureaucratic complexity, often stall at the primary care level, where the monetary value of the subsidy is lower. Thus, Figure 5 graphically demonstrates how a nominally progressive system can function as a regressive subsidy in practice.

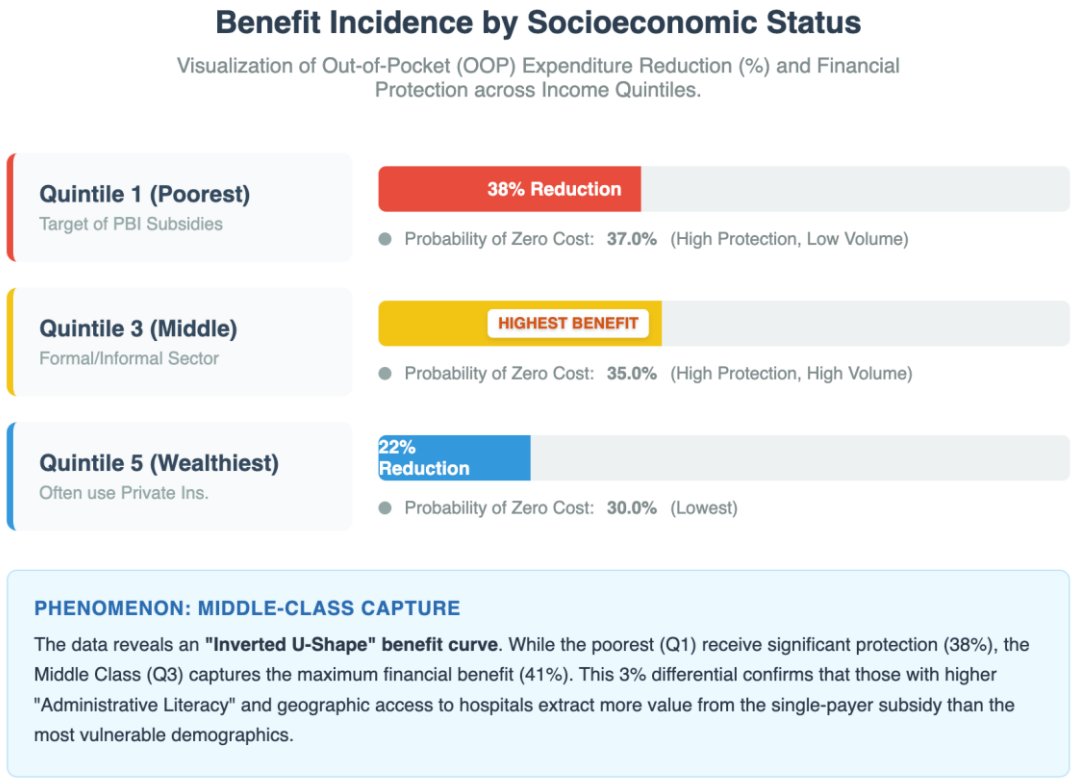

Figure 5. Benefit incidence by socioeconomic status.

Figure 6 addresses a critical dimension of health equity often overlooked in aggregate analyses: the performance of the health system for its most vulnerable users. It employs a comparative card layout to visualize the concept of vertical inequity. In health policy ethics, horizontal equity demands equal treatment for equal needs, while vertical equity demands unequal treatment for unequal needs—meaning those with greater health burdens, like persons with disabilities, should receive

proportionately greater support and protection. This figure provides stark visual evidence that JKN, in its current one-size-fits-all design, fails this test of vertical equity. The left panel represents the general population, serving as the control group. The theme is green, indicating success. The status badge reads high protection. The metric dials below show that for the average Indonesian, JKN has led to a significant reduction in out-of-pocket (OOP) expenditure and supports a high access utilization rate (reflecting the aOR > 2.0 found in Figure 2). For the majority, the system works as intended, acting as a financial shield. The right panel, themed in red to indicate policy failure, represents persons with disabilities. The status badge signifies an outcome gap. Crucially, the first metric dial for OOP Expenditure Reduction shows a non-significant reduction with a low visual fill. Based on econometric analysis by Azizatunnisa et al. (2024), this indicates that despite holding the same JKN card as the general population, households with disabled members do not experience a statistically significant easing of their financial burden compared to uninsured disabled households. Furthermore, the second dial shows lower utilization, suggesting that despite having higher medical needs, they access care less frequently. The central finding box explains the structural driver of this inequity: The ancillary cost trap. The JKN benefit package is designed for a standard patient. It covers clinical fees, basic drugs, and hospital stays. However, it fails to cover the non-medical ancillary costs that are prerequisites for disabled persons to access that care—such as specialized wheelchair-accessible transport to a referral hospital, hiring a caregiver for the journey, or therapies not on the standard formulary. Because these essential costs remain 100% out-of-pocket, the financial barrier remains catastrophically high for this group, even with insurance. Figure 6 powerfully visualizes that equal coverage (having the same card) does not translate to equal protection when needs are fundamentally unequal, highlighting a major structural blind spot in the current single-payer design.

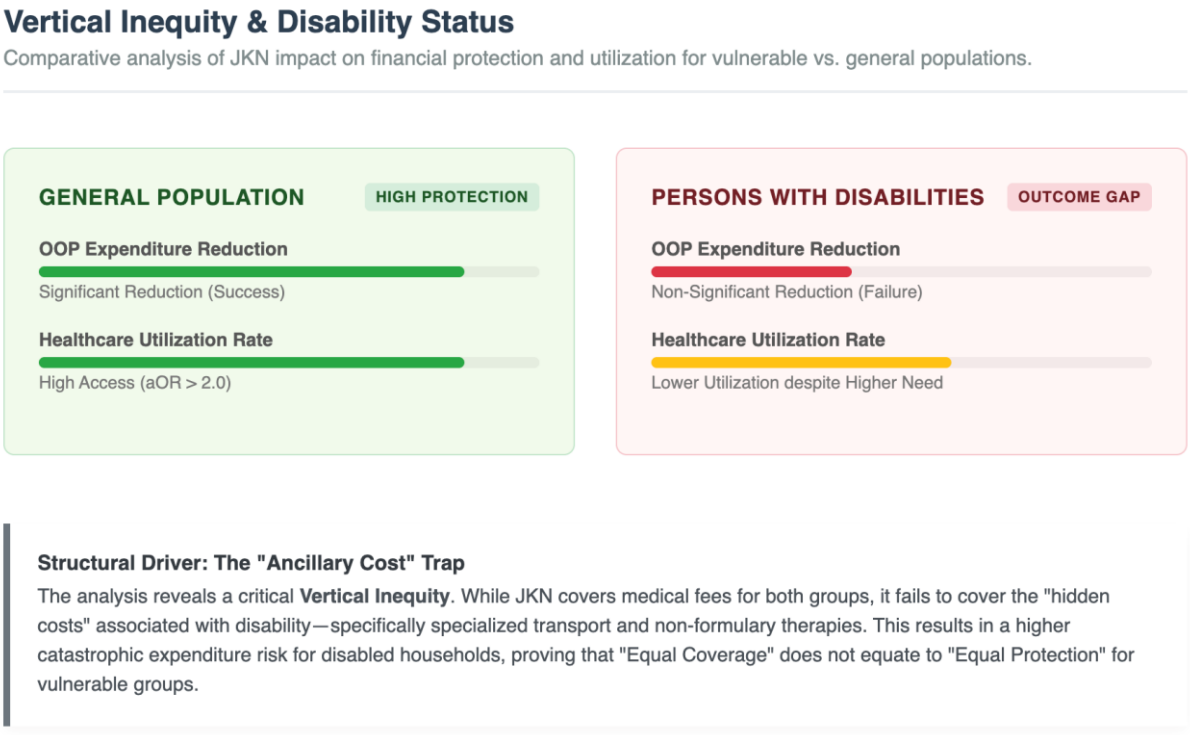

Figure 6. Vertical inequity and disability status.

Figure 7 tackles the third vertex of the Iron Triangle: Quality. In the absence of ubiquitous clinical outcome data, self-reported unmet needs—a measure of whether individuals felt they needed medical care but did not get it—serves as a critical proxy for service quality and system responsiveness. This figure uses a comparative pillar chart to visualize a subtle but profoundly important finding: while the JKN transition improved access for everyone, it improved it significantly faster for the better-off, creating a distinct quality gap. The chart features two prominent vertical pillars representing the percentage reduction in unmet needs realized during the JKN maturity phase (2021-2024), based on data from Hermawan et al. (2024). The left pillar, colored in a smooth teal gradient representing the non-poor population, stands taller, indicating a 10.4% reduction in unmet needs. The right pillar, colored in a more cautious orange gradient representing the poor population (specifically recipients of the PBI subsidy), is noticeably shorter, showing only a 7.7% reduction. The visual focus of the figure is the explicit quality gap indicator located between the two pillars. Through dashed connector lines and a central red measurement badge, it quantifies the exact difference: a 2.7% gap. This percentage represents the structural advantage the non-poor hold over the poor in utilizing the system. It is the statistical manifestation of inequality in navigating bureaucracy. The footer section, labeled structural drivers, provides the explanatory mechanism for this gap, drawing on qualitative evidence synthesized in the review. It identifies three key sources of administrative friction that disproportionately burden the poor. The poor, often relying on daily wage labor, suffer a higher opportunity cost for spending hours in long queues at overcrowded BPJS facilities. The multi-tiered referral system requires time, literacy, and often multiple visits just to secure permission to see a specialist. This complexity acts as a deterrent filter that the poor struggle to pass through more than the educated middle class. The poor are mandated to use Class 3 hospital wards, which are the most overcrowded. The frequent unavailability of these specific beds leads to turned-away patients and unmet needs, a constraint less likely to affect those who can afford to upgrade to Class 1 or VIP. Figure 7 visually demonstrates that in a system with zero price rationing, rationing occurs through inconvenience, and this burden of inconvenience falls squarely on the poor.

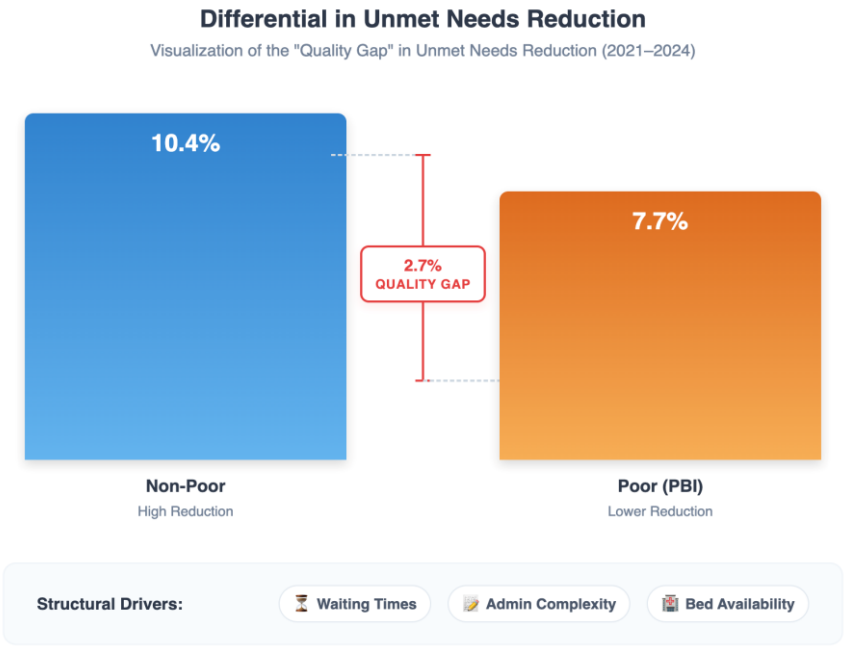

Figure 7. Differential in unmet needs reduction.

Figure 8 is a forward-looking, schematic visualization that uses a system dynamics approach to model the potential consequences of a major recent policy shift: the introduction of the Standardized Inpatient Class (*Kelas Rawat Inap Standar* or KRIS). This policy aims to replace the hierarchical, tiered system of Class 1, 2, and 3 wards—which dictates amenities based on contribution levels—with a single, uniform standard of care for all JKN members. This figure visually articulates the classic policy dilemma where solving an equity problem creates a new capacity problem. The left panel, labeled status Quo (Tiered), visualizes the pre-KRIS reality. It shows a class stack where different wards offer varying levels of comfort and density. Class 1 (gold) is comfortable but low volume; Class 3 (orange) is high density and overcrowded but represents the bulk of the system's bed capacity. The summary box notes that this system has a high total bed count but suffers from variable quality, representing a form of institutionalized inequity. A central transition arrow moves the viewer to the right panel, projected outcome, representing the post-KRIS future. Here, the tiered stack is replaced by a single, standardized container in uniform teal, labeled KRIS Standard. This visually represents the achievement of equity of experience—every patient, regardless of income, receives the same quality of accommodation (maximum 4 beds per room). However, the critical scientific insight is depicted in the top section of this container, marked with warning stripes and labeled supply constriction (Lost Bed Capacity). This visualizes the inevitable physical trade-off. By enforcing stricter spacing standards (fewer beds per room to improve quality), hospitals must physically remove beds from existing wards. Without concurrent massive capital investment to build new wings, the total national stock of hospital beds must decrease. The bottom metrics dashboard summarizes these dynamic trade-offs for policymakers. It shows that equity of experience trends up (green), a positive social outcome. However, total bed capacity trends down (red). The consequence of reduced supply meeting unchanged demand is visualized in the third metric: Waiting times trend up (orange). Figure 8 serves as a visual warning that a policy designed to help the poor by improving their ward conditions may paradoxically harm them by increasing the queues required to get into those wards, illustrating the intricate interconnectedness of the Iron Triangle's vertices.

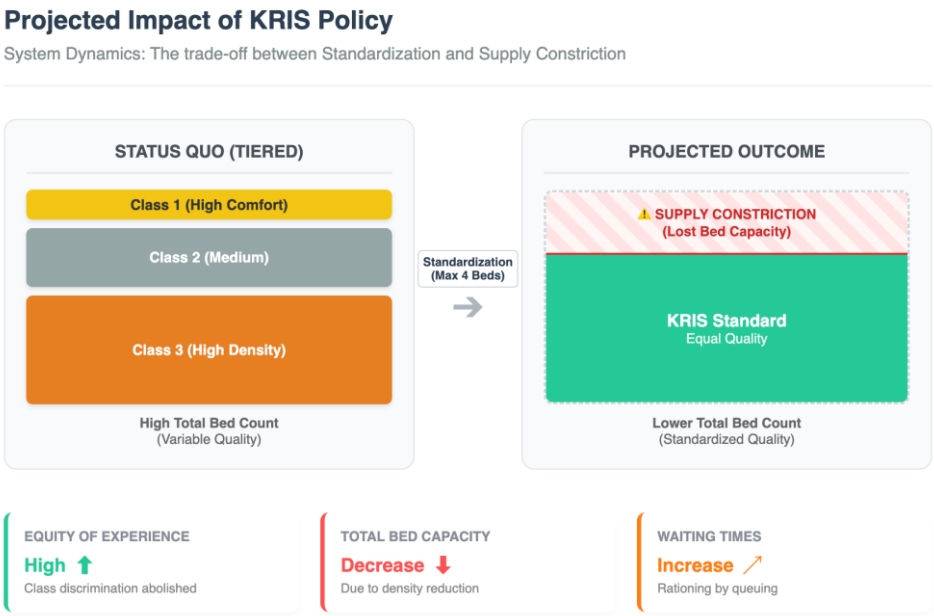

Figure 8. Projected impact of KRIS policy.

The findings of this review confirm that Indonesia's JKN is grappling with the classic Iron Triangle. By aggressively controlling Costs (via low capitation rates and strict CBG tariffs) and expanding Access (via mandatory enrollment), the system has inadvertently squeezed Quality. The unmet needs gap is not an accidental administrative error; it is a structural byproduct of the payment mechanism. The pathophysiology of this system failure lies in the Principal-Agent Problem.[11] Providers (agents), faced with low reimbursement rates from the payer (BPJS), are economically incentivized to maximize patient volume while minimizing the time and resources spent per patient. This leads to the short consultation culture and long waiting times that characterize BPJS service. For the middle class, who can afford to top up or demand better service, this is a nuisance. For the poor, who cannot afford the opportunity cost of missing a day's work to queue, it is a prohibitive barrier to entry.[12] The data showing a lower reduction in unmet needs for the poor (7.7%) compared to the non-poor (10.4%) is the quantitative manifestation of this rationing by inconvenience. Figure 9 is the conceptual capstone of the manuscript, a diagrammatic synthesis that integrates the diverse findings of the review into a coherent theoretical framework. It uses a left-to-right systems flow—moving from Input to Mechanism to Output—to explain not just what is happening in Indonesia's JKN reform, but why.[13] It visualizes how well-intentioned policy designs are refracted through the hard realities of Indonesia's structural landscape to produce unintended negative consequences, termed here as policy pathologies. On the far left, the policy inputs column in blue represents the official design intent of the JKN reforms between 2021 and 2024. These include the mandatory single-payer system (aiming for universal financial protection), Digitalization via Mobile JKN (aiming for administrative efficiency), and standardization via KRIS (aiming for social equity).[14] In an ideal world, these inputs would lead directly to equitable UHC. However, the center column, structural filters, represents the intervening variables of the Indonesian context that distort these inputs. At the heart of this lies the Iron Triangle, visualized as the core tension that forces trade-offs. Flanking this core are the two primary real-world filters identified in the review. At the top is supply rigidity, referring to the inelasticity of health infrastructure—the sheer lack of doctors and beds in the Outer Islands due to decentralized governance failures. At the bottom is admin literacy and the digital divide, representing the unequal ability of citizens to navigate the increasingly complex and digitized bureaucratic hurdles of the BPJS system.[15] The flow lines pass these inputs through these filters, leading to the Theoretical Outcomes (Pathology) on the far right in red. When the input of mandatory coverage hits the filter of supply rigidity, the outcome is hollow coverage—insurance without infrastructure, as seen in the map of Figure 3. When digitalization hits the filter of unequal admin literacy, the outcome is middle-class capture—a regressive subsidy where the savvy capture the benefits, as quantified in Figure 5. When standardization (KRIS) hits the Iron Triangle's constraint on resources, the outcome is supply constriction—higher quality for the few at the cost of access for the many, as projected in Figure 8. Figure 9 provides a unified theoretical map, demonstrating that these pathologies are not random bugs in the system, but predictable features of how specific policy designs interact with Indonesia's unique structural constraints.[16]

The middle-class capture can be explained through the theoretical lens of Administrative Literacy and Benefit Incidence Theory. The JKN system has become increasingly digitized and bureaucratic. Accessing care requires valid referral letters, active membership status, and often, the use of a smartphone app for queuing (*Mobile JKN*). The middle class possesses the cultural capital and digital literacy to navigate this bureaucracy. They understand how to appeal a denial, how to request a referral to a Tier A hospital, and how to use the app to skip the queue. The poor, and particularly the elderly poor, lack this literacy.

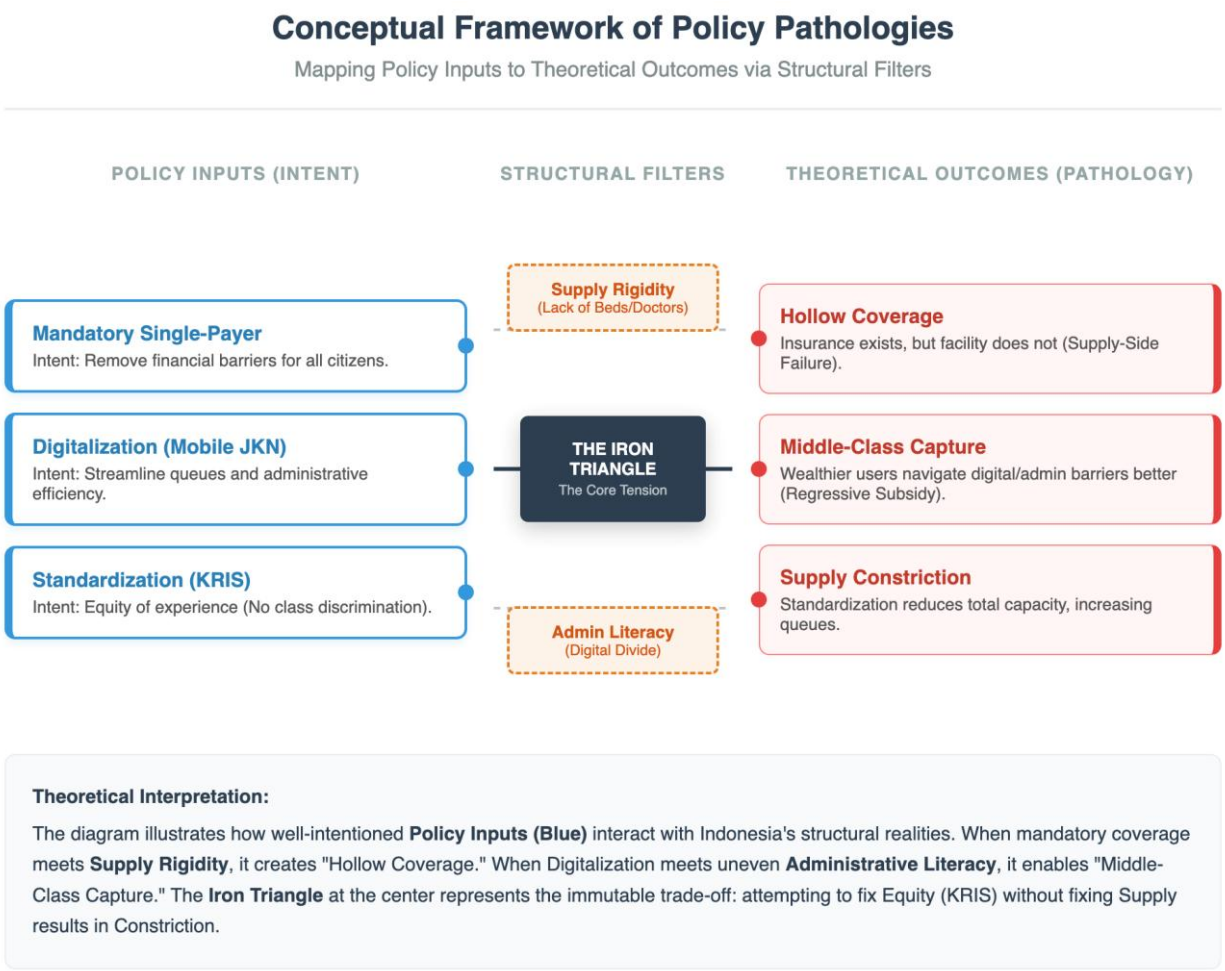

Figure 9. Conceptual framework of policy pathologies.

Consequently, the open door of UHC is effectively blocked by a digital screen or a paperwork wall. This creates a scenario where the public subsidy acts regressively: the state ends up subsidizing the expensive tertiary care of the administratively literate middle class, while the poor are relegated to basic primary care or forgo treatment entirely due to the complexity of access. A critical driver of the inequality is the structural misalignment between Central Financing (BPJS) and Local Delivery (Regional Governments/Pemda). Under Law 23/2014 on Regional Government, the responsibility for building and staffing hospitals lies with local districts. However, fiscal capacity varies wildly across the archipelago. This creates a pathology of hollow coverage in regions like Maluku or Nusa Tenggara Timur. BPJS provides the financing for care, but it cannot provide the facility. In rich districts, local governments subsidize hospital infrastructure, creating a synergy with BPJS. In poor districts, infrastructure stagnates. This decentralization creates a postcode lottery where a citizen's access to the JKN entitlement depends entirely on their district's fiscal health, not their medical need. The negative correlation (aOR 0.14) between fiscal capacity and utilization in remote areas is definitive proof that demand-side subsidies (insurance cards) are impotent without supply-side elasticity.[17,18]

The move towards KRIS represents an attempt to solve the equity problem by standardizing care, as

outlined in Table 6. However, from a supply-side perspective, this policy carries significant risk. Eliminating Class 1, 2, and 3 favors Equity of Experience (everyone gets the same room type) but may harm equity of access (fewer total beds available). If hospitals are forced to renovate wards to meet the maximum 4 beds rule without a concurrent expansion in building footprint, the total number of available beds will decrease. In a system already plagued by overcrowding, this supply constriction will inevitably lead to longer waiting lists. Economic theory suggests that when supply is constrained, and price is fixed (at zero for the patient), rationing occurs via queuing. Since the poor have less ability to wait (due to daily wage labor), they will be disproportionately crowded out of the system. Thus, a policy designed to promote equity could paradoxically worsen access for the very demographic it intends to help.[19,20]

4. Conclusion

This comprehensive evidence synthesis concludes that Indonesia's JKN reform (2021–2024) has achieved a monumental expansion of access, fundamentally protecting the population from the financial shock of hospitalization. The pooled evidence confirms that insurance ownership is the single strongest predictor of inpatient care utilization. However, the system is currently characterized by a distinct inverse equity trade-off. The benefits of the single-payer system are disproportionately captured by non-poor demographics, leaving the poorest and most vulnerable—specifically the disabled and those in remote outer islands—with hollow coverage. The persistent gap in unmet need reduction between the poor and non-poor indicates that legal coverage is not effective coverage. The system has moved from financial barriers to administrative and supply barriers, which are harder to detect but equally exclusionary. BPJS should abandon the uniform capitation rate. A geographic coefficient should be applied, offering significantly higher reimbursement rates for providers in remote and fiscal-poor districts. This would create a market incentive for doctors and clinics to open in hollow coverage zones. To combat Administrative Literacy barriers, the Ministry of Health should implement a Fast-Track referral lane for PBI (subsidized) participants and the elderly (over 65). This group should be exempt from the strict tiered referral requirements for chronic conditions, reducing the hassle costs that deter them from seeking care. The one-size-fits-all benefit package must be amended. A supplementary benefit (or integration with the Ministry of Social Affairs aid) is needed to cover non-medical costs, such as specialized transport for disabled patients, ensuring Vertical Equity is restored. While *Mobile JKN* is efficient, it must not be a gatekeeper. Alternative offline pathways must be maintained and simplified for populations with low digital literacy to prevent the digital divide from becoming a health divide.

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