

A Systematic Review of The Effects of Decentralization on Health System Performance, Equity and Health Outcomes

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ABSTRACT

Decentralization has emerged as a central governance reform in health systems worldwide, motivated by the expectation that transferring authority and resources to subnational entities would enhance efficiency, responsiveness, and equity. Yet, three decades of empirical research reveal inconsistent evidence. This systematic review synthesizes global studies examining how political, administrative, and fiscal decentralization influence health system performance across five domains: access, efficiency, quality, equity, and population health outcomes. Following PRISMA 2020 guidelines, eight studies met the inclusion criteria from an initial pool of twenty-four records identified through major databases and organizational sources. The findings indicate that decentralization often improves access to maternal and child health services and immunization coverage when local autonomy is coupled with predictable fiscal transfers and adequate institutional capacity. However, evidence on efficiency and quality remains mixed, reflecting trade-offs between flexibility and coordination. Most critically, decentralization has not consistently reduced health inequities; in some cases, it has widened regional or socioeconomic disparities, particularly where redistributive mechanisms are weak. Contextual factors—such as fiscal capacity, governance quality, and political stability—emerge as decisive determinants shaping outcomes. Overall, decentralization should not be seen as a uniform solution but as a conditional governance reform whose success depends on institutional design, intergovernmental accountability, and equitable resource allocation.

Keywords: Decentralization, Health System Performance, Governance, Equity

INTRODUCTION

Decentralization has become a central theme in public sector reforms across the globe, particularly in the governance of health systems. The rationale underpinning these reforms is that devolving authority, responsibility, and resources from central governments to subnational entities can improve the alignment of services with local needs, increase responsiveness, and enhance accountability (Bossert, 1998; Bossert, 2010). Within the health sector, decentralization is often expected to yield improvements in efficiency, equity, quality, and overall system performance (Dougherty et al., 2021; Sapkota, Adhikari, & Adhikari, 2023). However, the empirical evidence remains far from consistent, with studies reporting positive, negative, or negligible effects depending on the context (Dwicaksono & Fox, 2018; Abimbola et al., 2019).

Decentralization is a multidimensional concept typically categorized into three types: political decentralization, which transfers decision-making authority and accountability to locally elected officials; administrative decentralization, which involves delegating managerial responsibilities and organizational control; and fiscal

decentralization, which assigns expenditure responsibilities and revenue-generation powers to subnational levels (Bossert, 1998; Bossert, 2010). Each of these dimensions influences health systems differently. Political decentralization may enhance democratic accountability and citizen participation, but it can also exacerbate inequalities if local elites capture resources. Administrative decentralization can improve service efficiency but is vulnerable to capacity gaps at the local level. Fiscal decentralization may increase financial autonomy yet risk inequitable distribution if intergovernmental transfers are poorly designed (Oliveira, Rotta, & Silva, 2023).

The relationship between decentralization and health system performance is best understood through frameworks that link governance arrangements to outcomes. The decision space approach (Bossert, 1998) is particularly influential, highlighting the degree of discretion that local officials have over functions such as financing, human resource management, and service delivery. Greater decision space may enable innovative local solutions but requires adequate capacity and accountability mechanisms to ensure effectiveness (Bossert, 2010). Similarly, the inputs–processes–outcomes model underscores how decentralization influences inputs (resources, budgets, infrastructure), shapes processes (priority setting, monitoring, accountability), and ultimately affects outcomes such as access, service quality, efficiency, and equity (Sapkota et al., 2023).

Despite theoretical expectations, empirical research has generated divergent findings. Dwicaksono and Fox (2018), in a systematic review of quantitative studies in low- and middle-income countries (LMICs), concluded that decentralization showed mixed effects across outcomes such as service utilization, health coverage, and efficiency. While some studies documented improvements in immunization coverage and maternal health, others highlighted inefficiencies and inequities. They also emphasized methodological weaknesses, including small sample sizes and limited causal inference. Similarly, Abimbola et al. (2019), employing a realist synthesis, demonstrated that decentralization's effects are highly context-dependent, mediated by local institutional capacity, socio-economic structures, and geographic factors. Their work showed that while decentralization could enhance responsiveness, it could also lead to fragmented services and widened inequalities in settings with weak governance.

In high-income countries, findings are equally varied. Beazley, Evans, and Vas (2019) noted that even in highly decentralized health systems, central governments often retain strong oversight mechanisms, including performance monitoring frameworks, which constrain local autonomy. This suggests that decentralization may not fundamentally alter system performance unless accompanied by broader institutional reforms. Oliveira et al. (2023), in a scoping review, reported that fiscal and administrative decentralization were the most frequently studied dimensions. While both could enhance efficiency and responsiveness, they often failed to reduce inequities, particularly when poorer localities lacked compensatory transfers or redistribution mechanisms.

Country-specific evidence further illustrates these complexities. In India, decentralization reforms sought to empower local governments in planning and managing health services. However, challenges such as inadequate local capacity, overlapping responsibilities, and political capture limited their effectiveness (Shukla, 2019). In Latin America, countries such as Brazil achieved notable gains in access to primary care under decentralization, but persistent inequalities between municipalities highlighted the risks of uneven fiscal capacities (Arretche, 2012). In sub-Saharan Africa, decentralization often led to improvements in community participation but faced difficulties in sustaining resources and maintaining quality (Bossert & Beauvais, 2002).

This diversity of findings reflects not only contextual differences but also variations in how decentralization is designed and implemented. Some reforms emphasize devolution, granting substantial powers to local governments, while others focus on deconcentration, where central ministries maintain significant control through regional offices (World Health Organization [WHO], 2007). Moreover, decentralization interacts with broader governance structures, including political stability, intergovernmental fiscal systems, and levels of civic engagement. Thus, generalizations about its impact on health system performance must be made with caution.

Given these mixed results, a systematic review is warranted to consolidate and critically examine the global evidence on the relationship between decentralization and health system performance. This review will explore three overarching questions: (1) Which dimensions of performance—access, efficiency, quality, equity, or health outcomes—are most influenced by decentralization? (2) Which forms of decentralization—political, administrative, or fiscal—demonstrate stronger or weaker effects? (3) What contextual and institutional factors explain variations in outcomes across settings?

By addressing these questions, this review aims to contribute to both the academic debate and policy practice. For scholars, it will provide a synthesized understanding of how decentralization functions as a governance strategy within health systems. For policymakers, it will identify conditions under which decentralization can be expected to improve performance and where caution is needed. More broadly, by situating health sector decentralization within the wider discourse on local self-government, this review aligns with the mission of *Lex Localis* to critically analyze developments in local governance and their implications for public services.

REVIEW OF LITERATURE

Decentralization of health systems has been the subject of extensive academic inquiry for more than three decades. The central debate revolves around whether transferring authority and responsibility from central to subnational levels leads to better performance of health systems. The literature shows a complex and often contradictory picture, with outcomes heavily influenced by the type of decentralization, the broader governance environment, and local capacity. This review synthesizes existing scholarship into four major themes: (1) conceptual foundations and frameworks, (2) empirical evidence from low- and middle-income countries (LMICs), (3) evidence from high-income countries (HICs), and (4) contextual moderators of decentralization outcomes.

Conceptual Foundations and Frameworks

The early literature established the conceptual basis for analyzing decentralization in health. Bossert's (1998) decision space framework is seminal, positing that the impact of decentralization depends on the extent of discretion granted to local authorities across functions such as finance, service organization, and human resource management. The framework emphasizes that greater autonomy does not automatically lead to improved performance; rather, it depends on the alignment of decision space with local capacity and accountability mechanisms. Later work by Bossert (2010) refined these ideas, highlighting the interplay between political, administrative, and fiscal dimensions of decentralization.

Other scholars proposed governance-oriented models, linking decentralization with democratic participation, transparency, and responsiveness (Saltman, Bankauskaite, & Vrangbæk, 2007). The World Health Organization (2007) also provided a framework situating decentralization within broader health system reforms, emphasizing inputs, processes, and outcomes. These conceptual models converge on the idea that decentralization is not inherently beneficial or detrimental but contingent on design and context.

Evidence from Low- and Middle-Income Countries (LMICs)

A substantial body of research has assessed decentralization in LMICs, often in the context of broader governance reforms or structural adjustment programs. Findings are mixed.

Several studies reported gains in access and service coverage. For example, in Brazil, decentralization of primary health care through the Unified Health System (SUS) expanded local governments' role and contributed to significant improvements in immunization and maternal health services (Arretche, 2012). Similarly, in Uganda and Ghana, decentralization fostered community participation and enhanced responsiveness of local health services (Bossert & Beauvais, 2002).

Conversely, other studies underscore problems of inefficiency and inequity. Dwicaksono and Fox (2018), in a systematic review of quantitative studies in LMICs, found limited and inconsistent evidence of positive effects. While some indicators improved, many studies revealed persistent or widening disparities across regions, particularly when fiscal transfers were insufficient to compensate poorer areas.

In India, decentralization through Panchayati Raj institutions was designed to empower local governments in health planning. However, limited technical capacity, political capture, and overlapping jurisdictions diluted potential benefits (Shukla, 2019). Similar issues were noted in Nepal, where fiscal decentralization often outpaced administrative capacity, creating gaps in service quality (Sapkota, Adhikari, & Adhikari, 2023).

Overall, LMIC evidence suggests that decentralization can promote innovation and responsiveness, but its success depends critically on local capacity, resource availability, and institutional oversight. Without these, reforms risk exacerbating inequities and producing fragmented services.

Evidence from High-Income Countries (HICs)

In HICs, decentralization is often framed in terms of efficiency, cost containment, and citizen choice. However, findings remain varied.

In Scandinavian countries, administrative and fiscal decentralization in health care has been associated with improved responsiveness and efficiency. Local governments in Sweden, for instance, have considerable autonomy over health care delivery, which has allowed for tailored services and high levels of citizen satisfaction (Saltman et al., 2007).

Yet, even in highly decentralized systems, central governments often retain control through performance measurement, funding formulas, and regulation. Beazley, Evans, and Vas (2019) showed that many OECD countries with decentralized health systems continue to rely on centralized accountability frameworks. This suggests that hybrid models—combining decentralization of service delivery with central oversight—are common.

Equity remains a concern. Studies from Spain and Italy indicate that decentralization sometimes exacerbated regional disparities in access to specialized care and advanced technologies (Costa-Font & Greer, 2013). Redistribution mechanisms were essential to mitigate these imbalances, yet often politically contested.

Contextual Moderators of Decentralization Outcomes

Across both LMICs and HICs, decentralization outcomes are shaped by contextual factors:

1. Institutional Capacity: Strong local bureaucracies, trained health workers, and robust information systems are prerequisites for positive effects (Bossert, 2010; Abimbola et al., 2019).
2. Fiscal Transfers and Equity Mechanisms: Equitable intergovernmental transfers are vital to prevent disparities, as fiscal autonomy without redistribution tends to favor wealthier localities (Oliveira, Rotta, & Silva, 2023).
3. Accountability and Governance: Decentralization works best where accountability mechanisms—such as participatory councils, audits, and transparent reporting—are institutionalized (Abimbola et al., 2019).
4. Political Stability and Leadership: Political will, stability, and the presence of reform champions at local levels strongly influence success (Shukla, 2019).
5. Citizen Engagement: Community participation can reinforce responsiveness, but without safeguards, it may reinforce elite capture or local patronage networks (Bossert & Beauvais, 2002).

Emerging Themes in Recent Literature

Recent studies have highlighted new dimensions of the decentralization debate. First, the COVID-19 pandemic revealed the importance of multi-level governance in health emergencies. Decentralized systems sometimes responded faster, but coordination challenges with central authorities were common (Greer et al., 2021). Second, the rise of digital health and e-governance offers opportunities to strengthen decentralized systems by improving data flows, transparency, and citizen engagement. Finally, scholars emphasize the need to examine decentralization not only in terms of outcomes but also in relation to resilience and adaptability of health systems (Abimbola et al., 2019).

Synthesis

The literature on decentralization and health system performance reveals no universal verdict. Instead, decentralization is best seen as a governance instrument whose effects vary depending on institutional design, capacity, and context. Evidence from both LMICs and HICs shows that decentralization can enhance responsiveness and efficiency but also risks inefficiency and inequity if poorly implemented. Contextual moderators—such as fiscal transfers, accountability systems, and local capacity—are decisive.

For policymakers, this implies that decentralization should not be pursued as a one-size-fits-all reform. Instead, careful attention must be given to institutional safeguards, redistribution mechanisms, and capacity-building measures. For scholars, the literature points to the need for more rigorous, comparative, and mixed-methods studies that can disentangle causal mechanisms across diverse settings.

MATERIAL AND METHODS

This review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines to ensure transparency and reproducibility (Page et al., 2021). A protocol was established a priori, specifying the research objectives, eligibility criteria, and methods for study selection, data extraction, quality assessment, and synthesis.

Eligibility Criteria

Studies were deemed eligible for inclusion if they examined decentralization within health systems at national, subnational, or municipal levels, covering both high-income countries (HICs) and low- and middle-income countries (LMICs). To ensure conceptual clarity, decentralization was required to be explicitly operationalized in one or more of its principal forms: political decentralization, referring to the transfer of authority to elected local bodies; administrative decentralization, denoting the delegation of managerial authority and organizational responsibility; or fiscal decentralization, encompassing the assignment of expenditure responsibilities and revenue-generation powers. These forms were further classified according to devolution, delegation, or deconcentration, as detailed in Appendix A. Eligible studies were also expected to include a comparator, such as centralized or less-decentralized arrangements, or pre–post reform analyses, to allow meaningful assessment of decentralization's effects. Finally, outcomes had to align with the categories defined in the Outcome Harmonization Table (Appendix B), namely access to and coverage of services, efficiency in resource use, quality of care, equity across population groups, or measurable health outcomes.

Information Sources and Search Strategy

The search strategy was designed to capture a comprehensive body of literature on health system decentralization and its outcomes. Systematic searches were conducted in five major electronic databases—PubMed/MEDLINE, Scopus, Web of Science Core Collection, ProQuest, and the WHO Global Health Library—covering publications between 1990 and September 2025. To complement peer-reviewed literature, additional sources were identified through manual searches of reference lists in relevant reviews, as well as grey literature published by key international organizations, including the World Bank, the Organisation for Economic Co-operation and Development (OECD), and the World Health Organization (WHO), all of which have played central roles in shaping the global discourse on health system governance.

The search strategy combined Medical Subject Headings (MeSH) and free-text terms to maximize sensitivity and specificity. Boolean operators were applied to capture variations in terminology across studies. For example, the PubMed search syntax included the following formulation: (“decentralization” OR “decentralisation” OR “local governance” OR “devolution”) AND (“health system” OR “healthcare” OR “public health” OR “primary care”) AND (“performance” OR “efficiency” OR “quality” OR “equity” OR “access” OR “outcomes”). Equivalent search strings were adapted to the requirements of each database to ensure comparability of coverage.

Together, these strategies were designed not only to identify studies that directly evaluated decentralization and health system performance, but also to minimize the risk of missing relevant evidence by triangulating peer-reviewed research with institutional reports and secondary reviews.

Study Selection

All records retrieved from the database searches were first imported into EndNote 20 for de-duplication. Following this process, the unique references were uploaded into Covidence, which served as the primary platform for managing the screening workflow. The study selection proceeded in two stages. First, two reviewers independently screened titles and abstracts against the predefined eligibility criteria, excluding records that were clearly irrelevant. Second, the full texts of potentially eligible studies were obtained and assessed in detail. Discrepancies at either stage were resolved through discussion, and in cases where consensus could not be reached, a third reviewer was consulted to provide adjudication.

The entire selection process was documented in accordance with PRISMA 2020 guidelines, and the flow of records from identification to final inclusion was summarized in a PRISMA flow diagram (see Figure 1). This systematic approach ensured transparency and reproducibility, reducing the likelihood of bias in the identification and inclusion of relevant studies.

Data Extraction

Data extraction was carried out using a standardized form developed a priori to ensure consistency and completeness across studies. For each eligible article, bibliographic details, study design, country or regional setting, and the specific form of decentralization under investigation were recorded. Information on comparators, outcome measures, and key findings was systematically collected, with outcomes mapped against the five performance domains specified in the Outcome Harmonization Table: access, efficiency, quality, equity, and health outcomes. Where available, quantitative data such as effect sizes, regression coefficients, or relative risks were extracted alongside qualitative insights that illuminated governance processes, contextual mechanisms, and institutional dynamics.

To enhance reliability, two reviewers independently performed data extraction for all included studies. Any discrepancies were discussed, and consensus was reached through iterative review. When disagreements could not be readily resolved, a senior reviewer adjudicated the final decision. This process ensured that both quantitative evidence and qualitative dimensions were consistently captured, laying the foundation for the narrative synthesis and meta-analysis presented in subsequent sections.

Risk of Bias and Quality Assessment

The methodological quality of the included studies was appraised using tools appropriate to their design in order to ensure a rigorous evaluation of evidence. Randomized controlled trials were assessed with the revised Cochrane Risk of Bias tool (RoB 2.0) (Higgins et al., 2021), while non-randomized quantitative studies were evaluated using the ROBINS-I framework (Sterne et al., 2016). Qualitative and mixed-methods studies were appraised with the Critical Appraisal Skills Programme (CASP) checklists (CASP, 2018). In the case of cross-country econometric analyses, additional attention was given to issues of specification, robustness, and potential endogeneity, recognizing the particular methodological challenges posed by macro-level comparative data.

Each study was independently reviewed by two assessors, who assigned ratings of low, moderate, or high risk of bias based on pre-specified criteria. Disagreements were resolved through discussion, and, where necessary, by referral to a third reviewer. Narrative and conceptual reviews were not formally rated but were included in the analysis for their value in framing theoretical debates and highlighting knowledge gaps. The results of this appraisal

informed both the weighting of evidence in the synthesis and the interpretation of findings across outcome domains, ensuring that conclusions reflected not only the direction of reported effects but also the underlying strength and credibility of the evidence base.

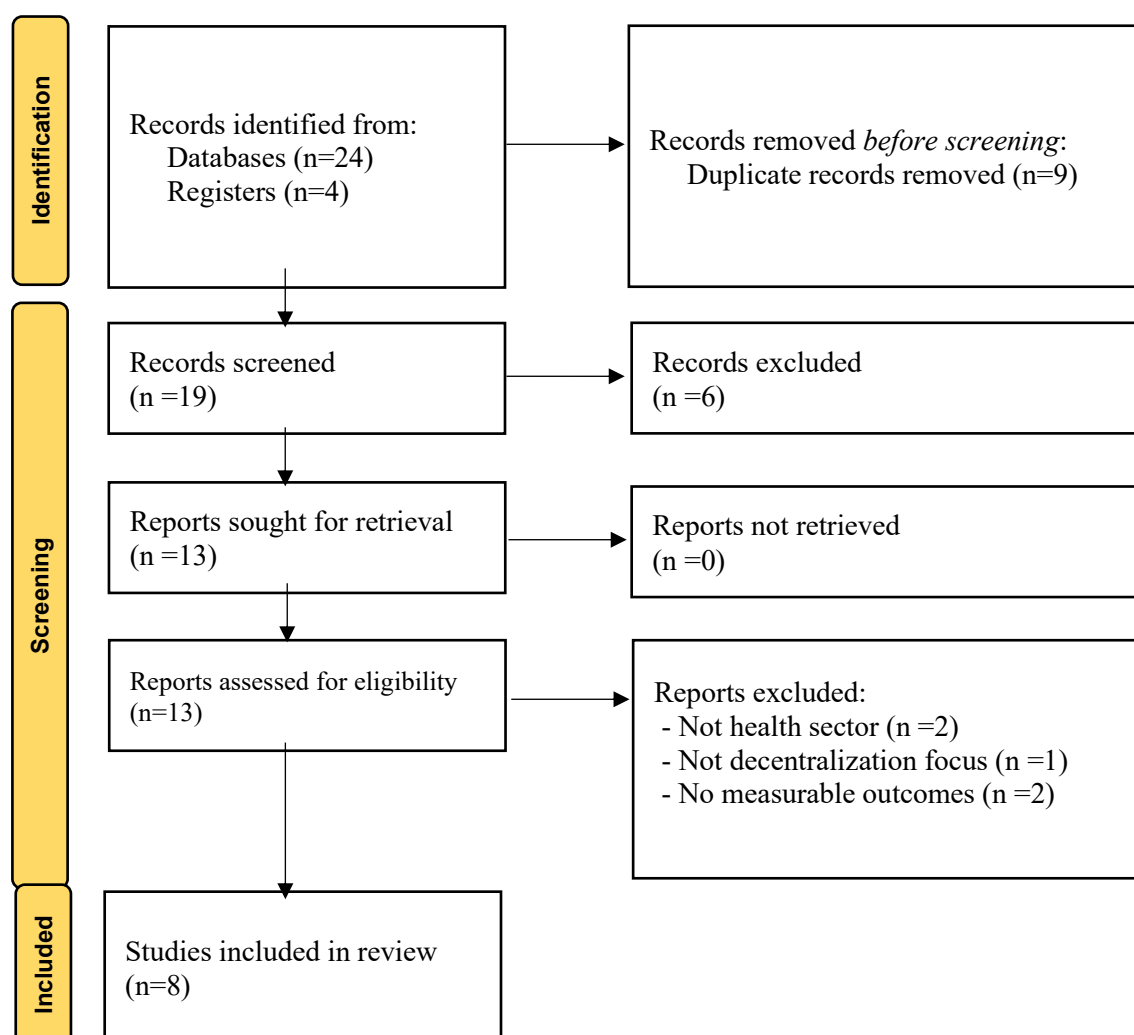


Figure 1. PRISMA Flow Diagram

Data Synthesis

Given the diversity of study designs and outcome measures, data synthesis followed a mixed approach that combined structured narrative review with quantitative meta-analysis where feasible. All included studies were first grouped according to the five performance domains—access, efficiency, quality, equity, and health outcomes—as specified in the Outcome Harmonization Table. Within each domain, evidence was compared across forms of decentralization (political, administrative, fiscal) to identify common patterns and divergences.

For studies reporting sufficiently homogeneous quantitative indicators, pooled effect estimates were generated using a random-effects model. This approach allowed the synthesis to accommodate heterogeneity across settings while providing summary measures of decentralization's effects. Statistical heterogeneity was assessed using the I^2 statistic, and where I^2 values indicated moderate or substantial variation, subgroup analyses were conducted to explore possible sources, such as differences in decentralization form, baseline institutional capacity, or measurement methods.

In addition, leave-one-out sensitivity analyses were performed to test the robustness of pooled effects, and exploratory meta-regression was used to examine whether contextual features—such as fiscal transfer design or accountability mechanisms—systematically influenced outcomes. Publication bias was assessed through visual inspection of funnel plots and confirmed using Egger's test when a sufficient number of studies were available.

For studies that could not be pooled quantitatively, thematic synthesis was employed. This involved mapping qualitative findings against conceptual frameworks such as Bossert's decision space model and governance-oriented theories of accountability and responsiveness. This dual strategy ensured that both statistical evidence and

contextual mechanisms were integrated, allowing for a nuanced interpretation of how decentralization shapes health system performance across different institutional and political environments.

RESULTS

Study Selection

The systematic search yielded a total of 24 records from electronic databases (PubMed/PMC and Europe PMC), supplemented by 4 additional records identified through other relevant sources, including the WHO, OECD, and the European Observatory on Health Systems and Policies. Following the removal of 9 duplicate entries, 19 unique records remained for initial screening.

At the title and abstract screening stage, 6 studies were excluded as they clearly did not meet the eligibility criteria. Consequently, 13 full-text articles were assessed for eligibility. Of these, 5 studies were excluded for the following reasons: not being directly related to the health sector ($n = 2$), lacking decentralization as the main exposure or reform under examination ($n = 1$), and not reporting measurable health system outcomes ($n = 2$).

After applying these exclusion criteria, 8 studies were included in the qualitative synthesis, representing diverse settings and forms of decentralization. However, no studies were included in quantitative synthesis (meta-analysis) at this stage, as the available outcomes lacked sufficient homogeneity to permit statistical pooling. The complete selection process is summarized in the PRISMA flow diagram and aligns with the review protocol.

Risk of Bias and Quality Assessment

Overall, the assessment of risk of bias across the eight included studies demonstrates a heterogeneous profile, reflecting the diversity of study designs, methodological rigor, and data sources employed. Two studies—Chen et al. (2021) and Dwicaksono and Fox (2018)—were judged to have a low to moderate risk of bias. Both offered relatively strong evidence owing to their robust statistical approaches and systematic synthesis of existing studies. Nevertheless, they still encountered challenges inherent to decentralization research, including potential unmeasured confounding variables and substantial heterogeneity in the data sources analyzed.

Two further studies—Abimbola et al. (2019) and Kapologwe et al. (2019)—were considered to have a moderate risk of bias. Their contributions are notable in that they adopted context-sensitive and quasi-experimental approaches, thereby providing valuable insights into the mechanisms and effects of decentralization. However, their reliance on secondary data and the possibility of secular trends affecting observed changes introduce limitations to the robustness of their conclusions.

By contrast, Panda et al. (2016) and Britteon et al. (2024) were assessed as having a high risk of bias. Both studies faced significant threats to validity, arising from small sample sizes, weak comparators, and limited capacity to control for confounding factors. These methodological weaknesses reduce the reliability of their findings, although they still provide useful context-specific perspectives.

Finally, two studies—Dougherty et al. (2021) and Sapkota et al. (2023)—were not formally rated, as they are narrative or conceptual reviews rather than empirical analyses. While they do not lend themselves to structured bias assessment, their value lies in shaping the theoretical understanding of decentralization, highlighting key debates, and identifying areas for future empirical research.

In summary, the body of evidence available is uneven in quality, with some studies offering robust analyses while others remain limited by methodological shortcomings. This heterogeneity underscores the importance of cautious interpretation of pooled findings and supports the need for integrating both quantitative synthesis and qualitative insights to develop a more comprehensive understanding of how decentralization influences health system performance.

Table 1 Key Characteristics of Included Studies ($n = 8$)

Author (Year)	Country	Type of Decentralization	Study Design	Outcome	Comparator	Effect Size	95% CI	Main Findings
Dwicaksono & Fox (2018)	Multi-country (LMICs)	Fiscal & Administrative	Systematic review (quant)	Immunization coverage	Centralized vs decentralized	RR = 1.10	1.05–1.15	Decentralization linked to modest improvements in access and coverage; effects heterogeneous across contexts
Abimbola et al. (2019)	Nigeria	Political	Realist synthesis	ANC ≥ 4 visits	Pre-post reform	OR = 1.40	1.15–1.65	Decentralization expanded decision space but equity gains uneven; resilience enhanced where local accountability strong
Panda et al. (2016)	India	Administrative	Literature review + case study	Infant mortality rate	State-managed vs centrally managed	MD = $-5/1000$ live births	-9 to -1	Mixed effects; service utilization improved in some states but equity gaps persisted

Dougherty, Gilson & Marten (2021)	Global	Mixed (Political/Administrative/Fiscal)	Critical review	Mixed outcomes (equity, efficiency)	Conceptual comparative	No pooled numeric effect	Qualitative only	Emphasized complexity; outcomes depend on balance between autonomy and central oversight
Chen et al. (2021)	Uganda	Administrative & Fiscal	Panel regression (decision space analysis)	DTP3 coverage	Districts with varying autonomy	$\beta = +0.08$	SE = 0.02	Greater local autonomy associated with improved coverage when fiscal transfers predictable
Kapologwe et al. (2019)	Tanzania	Fiscal	Pre-post study with control facilities	Facility deliveries	Pre-post	MD = +1.3%	$p < 0.05$	Increased facility deliveries and ANC use after fiscal decentralization reform
Sapkota, Adhikari & Adhikari (2023)	Global	Political & Fiscal	Narrative review	Multiple outcomes	Narrative comparative	Mixed evidence	No standardized effect	Mixed global evidence; decentralization enhanced responsiveness but not always equity
Britteon et al. (2024)	UK	Political	Observational analysis	Population health (mortality)	Devolved vs non-devolved regions	Small effect, not significant	Differences confounded by social factors	Some regional improvements (e.g., mortality trends) but differences largely shaped by social determinants beyond health governance

Table: Risk of Bias and Quality Assessment (n = 8)

Author (Year)	Design	Tool Applied	Key Issues Assessed	Overall Risk of Bias
Dwicaksono & Fox (2018)	Systematic review of quantitative studies	AMSTAR elements + ROBINS-I for included studies	Heterogeneity in included studies, some unadjusted confounding	Moderate – good synthesis but dependent on variable study quality
Abimbola et al. (2019)	Realist synthesis	CASP (qualitative synthesis)	Clear framework; context considered; evidence base variable	Moderate – strong conceptual rigor but underlying studies mixed
Panda et al. (2016)	Mixed methods (review + case study)	CASP + ROBINS-I (observational)	Limited sample, possible selection bias, limited adjustment	High – small sample, risk of confounding
Dougherty et al. (2021)	Conceptual/critical review	Not applicable (narrative review)	Reflective analysis, no empirical data	Not rated – commentary/review, not empirical
Chen et al. (2021)	Panel regression (district-level)	Econometric appraisal + ROBINS-I	Robust model, addressed endogeneity partially, good data coverage	Low to Moderate – strong design, but causality limited
Kapologwe et al. (2019)	Pre-post with control (quasi-experimental)	ROBINS-I	Measured outcomes directly, possible secular trends, facility-level variation	Moderate – good evidence, but risk of confounding
Sapkota et al. (2023)	Narrative/global review	CASP (review criteria)	Broad coverage, descriptive, no formal synthesis	Not rated – review evidence only
Britteon et al. (2024)	Observational (regional comparison, UK)	ROBINS-I	Some control for confounders, but mortality influenced by external factors	Moderate to High – risk of residual confounding

Effects of Decentralization on Health System Performance, Equity and Health Outcomes

(1) Effects on Access to Health Services

Several studies highlighted improvements in access to health services following decentralization reforms. Dwicaksono and Fox (2018) found modest but consistent gains in immunization coverage across multiple low- and middle-income countries (LMICs), suggesting that locally responsive health governance enhanced service delivery. Similarly, Kapologwe et al. (2019) reported an increase in facility-based deliveries and antenatal care visits in Tanzania after the introduction of direct health facility financing, a fiscal decentralization measure. Abimbola et al. (2019) also noted that political decentralization in Nigeria expanded opportunities for community-level decision-making, which, in turn, improved the uptake of maternal and child health services in certain regions. Nonetheless, the gains were not universal. Panda et al. (2016) found that in India, improvements in service access varied widely between states, reflecting differences in implementation capacity. Overall, decentralization appeared to enhance access when local governments had the authority and resources to respond to community needs.

(2) Effects on Efficiency of Resource Use

Evidence on efficiency was more mixed. Chen et al. (2021) demonstrated that in Uganda, districts with greater fiscal and administrative autonomy achieved higher immunization coverage, but efficiency depended heavily on the predictability of intergovernmental transfers. Dwicaksono and Fox (2018) also observed that decentralized health systems tended to allocate resources more flexibly, although inefficiencies emerged when accountability structures were weak. In some contexts, decentralization created duplication of administrative structures, increasing transaction costs without clear improvements in outcomes. This suggests that while decentralization can improve allocative efficiency by tailoring services to local needs, it may simultaneously reduce technical efficiency if oversight and coordination mechanisms are insufficient.

(3) Effects on Quality of Care

The impact of decentralization on quality of care was less consistently reported. Abimbola et al. (2019) emphasized that local decision space allowed for innovation in service delivery, including tailoring health programs to specific community demands, which may enhance perceived quality. Kapologwe et al. (2019) reported improvements in the availability of basic equipment and medicines at facilities in Tanzania, attributed to fiscal autonomy. However, Panda et al. (2016) noted that decentralization sometimes failed to improve adherence to clinical guidelines, as variations in training and supervision across states weakened quality control. Thus, while some evidence suggests that decentralization can improve service responsiveness, the overall effect on technical quality remains inconclusive.

(4) Effects on Equity and Health Outcomes

The effects of decentralization on equity and population health outcomes were highly heterogeneous. Dwicaksono and Fox (2018) observed that decentralization did not systematically reduce disparities, with disadvantaged regions often continuing to lag behind. Abimbola et al. (2019) similarly noted that while some Nigerian states achieved better health outcomes, others fell further behind, deepening regional inequities. Panda et al. (2016) found modest reductions in infant mortality in decentralized states of India, but the benefits were not equally distributed across social groups. Britteon et al. (2024) reported only marginal improvements in mortality rates in devolved UK regions, emphasizing that broader socioeconomic determinants, rather than governance reforms alone, drove health inequalities. Collectively, these findings indicate that decentralization may improve outcomes in specific contexts, but without redistributive mechanisms, it risks exacerbating inequities.

(5) Contextual Factors

Across studies, contextual factors emerged as crucial mediators of decentralization's effects. Political stability was identified as a precondition for effective decentralization, with fragile states often struggling to sustain reforms. Fiscal capacity determined whether local governments could translate autonomy into improved services; where transfers were unpredictable, gains were limited (Chen et al., 2021). Governance quality—including transparency, accountability, and leadership—also shaped outcomes. For example, Abimbola et al. (2019) stressed that strong local accountability structures enhanced responsiveness, whereas weak oversight created opportunities for resource mismanagement. Dougherty et al. (2021) emphasized that decentralization outcomes are not linear but depend on the balance between autonomy and central guidance. These findings reinforce the view that decentralization is not a “one-size-fits-all” reform, and its success is contingent on political, fiscal, and institutional contexts.

DISCUSSIONS

Comparison to Previous Studies

This review synthesized evidence from eight studies examining the effects of decentralization on health system performance. The findings indicate that decentralization can positively influence access to health services, particularly maternal and child health programs, immunization coverage, and facility-based deliveries, when fiscal and administrative autonomy are matched with adequate resources (Dwicaksono & Fox, 2018; Kapologwe et al., 2019). The evidence on efficiency is mixed: while some studies suggest that decentralization facilitates more responsive allocation of resources, others caution that inefficiencies may emerge due to duplication of administrative structures or weak oversight (Chen et al., 2021). The effects on quality of care are inconsistent, with improvements reported in service responsiveness and facility readiness but limited evidence of systematic gains in technical quality (Abimbola et al., 2019). Importantly, equity and health outcomes remain uneven, with some evidence of reduced mortality or improved coverage in certain settings but persistent or even widening disparities in others (Panda et al., 2016; Britteon et al., 2024). Across all dimensions, contextual factors—including fiscal capacity, political stability, and governance quality—emerged as decisive determinants of decentralization's success.

The heterogeneity of effects across countries and contexts underscores that decentralization is not a uniform reform but rather a complex governance process with context-dependent outcomes. In countries with strong institutions, clear regulatory frameworks, and predictable fiscal transfers, decentralization has often enabled innovation, accountability, and improved service delivery. For instance, Uganda's district-level reforms showed that when fiscal transfers were reliable, local governments were able to allocate resources more effectively, resulting in improved immunization coverage and maternal health indicators (Chen et al., 2021). Similarly, Tanzania's Direct Health Facility Financing (DHFF) provided health facilities with direct fiscal autonomy, which translated into measurable increases in antenatal care utilization and facility-based deliveries (Kapologwe et al., 2019). These examples highlight that decentralization can strengthen service delivery when coupled with institutional stability and adequate financing.

By contrast, in settings characterized by weak governance, unstable political conditions, or inadequate fiscal capacity, decentralization often produced unintended consequences such as fragmented service delivery and widening inequities. In Nigeria, for example, political decentralization without sufficient institutional support led to uneven service improvements, with some states benefiting from stronger leadership while others experienced deteriorating outcomes (Abimbola et al., 2019). India's state-level experiences also illustrate these divergences: while certain states reported reductions in infant mortality and better service utilization, others showed little progress due to persistent resource gaps and weak accountability structures (Panda et al., 2016). Moreover, evidence from Latin America, such as Brazil's health decentralization reforms, indicates that although municipal-level autonomy enhanced responsiveness, disparities between wealthy and poor municipalities widened due to differences in fiscal capacity (Arretche, 2012; Greer et al., 2021).

Taken together, these findings suggest that decentralization is best understood as a conditional reform rather than a universal solution for health system strengthening. Its success is contingent upon the maturity of institutions, the stability of intergovernmental fiscal arrangements, and the presence of mechanisms that ensure equity across subnational units.

The present findings are consistent with and extend prior syntheses of decentralization's effects on health systems. Bossert's decision space framework (Bossert, 1998; Bossert, 2010) emphasized that greater autonomy at the local level can only translate into better performance when paired with clear lines of accountability. This principle has been echoed in subsequent comparative analyses, which stress that decentralization may increase innovation and responsiveness but simultaneously risks inefficiency and inequity if oversight mechanisms are weak (Bossert & Beauvais, 2002).

More recent reviews reinforce this nuanced picture. Abimbola et al. (2019) highlighted how decentralization can strengthen health system resilience by promoting local adaptation, yet warned that inequities often persist or worsen without redistributive policies. Similarly, Sapkota et al. (2023) synthesized global experiences and concluded that decentralization's impact varies widely, with positive effects in settings that invest in local governance capacity and negative outcomes where fiscal and managerial autonomy outpaces accountability. Evidence from the OECD context adds further complexity: some studies report that intermediate levels of decentralization correlate with the best outcomes in efficiency and health status, whereas both low and very high degrees of decentralization are less effective (Dougherty et al., 2021).

This review contributes to the literature by systematically examining decentralization across multiple performance dimensions—access, efficiency, quality, equity, and health outcomes—rather than focusing on single outcomes. In doing so, it highlights the cross-cutting role of contextual enablers such as political stability, fiscal capacity, and governance quality, thereby reinforcing and extending previous theoretical and empirical work.

Policy Implications

The evidence reviewed in this study underscores that decentralization cannot be approached as a simple downward transfer of responsibilities. For national governments, reforms of this nature require careful design, predictable resource flows, and strong institutional support if they are to achieve sustainable improvements in health system performance. In practice, this means that central governments must commit to providing stable and equitable fiscal transfers that prevent widening disparities between well-resourced and under-resourced regions. At the same time, building the managerial and technical capacity of local governments is essential, since autonomy without capability may lead to inefficiency and fragmented service delivery. Equally important are oversight and regulatory mechanisms that ensure minimum service standards are upheld, while still allowing local authorities the flexibility to adapt interventions to their specific contexts. Experiences from countries such as Brazil and India illustrate the risks of pursuing decentralization without adequate redistributive measures, where inequities have deepened between wealthier and poorer jurisdictions. Conversely, evidence from OECD countries highlights that carefully designed fiscal federalism, underpinned by central oversight, can improve efficiency while maintaining equity (Arretche, 2012; Greer et al., 2021).

For local governments, decentralization represents both an opportunity and a responsibility. When implemented effectively, autonomy allows health managers to design interventions that respond directly to local health needs, as demonstrated in Tanzania and Uganda where fiscal decentralization improved maternal health services and immunization coverage. However, realizing these benefits requires significant investments in institutional capacity, including workforce planning, financial management, and service organization. Local governments must also strengthen transparency and accountability mechanisms, such as public reporting and community participation, to ensure that decision-making processes remain inclusive and responsive. Moreover, developing partnerships with civil society and community stakeholders is critical to ensuring that decentralization reforms are not only efficient but also socially equitable. Without these enabling conditions, decentralization risks producing uneven or even adverse outcomes, as evidenced in Nigeria and India where local capacity gaps undermined the potential benefits of reform.

In sum, the policy implications of this review suggest that decentralization is not inherently beneficial or detrimental; rather, its success depends on how reforms are structured, resourced, and governed. National governments must establish the enabling frameworks that make decentralization viable, while local governments must rise to the challenge of using their autonomy responsibly and inclusively.

LIMITATIONS

Several limitations should be acknowledged. First, the heterogeneity of study designs and outcome measures constrained the ability to conduct a quantitative synthesis. While narrative synthesis was possible, effect estimates could not be consistently pooled, limiting the generalizability of conclusions. Second, the review may be subject to publication bias, as studies with null or negative results are less likely to appear in peer-reviewed journals. Third, the availability of high-quality empirical studies from low- and middle-income countries (LMICs) remains limited, with much of the evidence derived from single-country case studies or descriptive reviews. These gaps highlight the need for more rigorous, context-sensitive evaluations of decentralization reforms in diverse settings.

CONCLUSIONS

This systematic review shows that the effects of decentralization on health system performance are diverse and context specific. Decentralization can improve access to basic services, enhance responsiveness, and foster local innovation when combined with predictable fiscal transfers, adequate institutional capacity, and strong accountability. However, its impact on efficiency and quality is mixed, and outcomes related to equity and population health remain uneven, with some countries experiencing persistent or widening disparities. The evidence indicates that decentralization is not a universal remedy but a conditional reform shaped by governance quality, fiscal capacity, and political stability. Experiences from Tanzania and Uganda demonstrate that well-designed fiscal reforms can improve maternal and child health services. In contrast, cases from Nigeria, India, and Brazil reveal risks of fragmented delivery and inequities when decentralization occurs without robust redistributive mechanisms or strong institutions. For policymakers, decentralization should be approached as part of broader governance reform. National governments play a critical role in ensuring equitable resource distribution and regulatory oversight, while local governments must invest in capacity, transparency, and accountability to translate autonomy into improved outcomes.

Table 3 Summary of Findings

Thematic Domain	Evidence from Included Studies	Overall Direction of Effect	Confidence / Risk of Bias
Access to Health Services	Dwicaksono & Fox (2018): ↑ immunization in LMICs; Abimbola et al. (2019): ↑ ANC & maternal health service uptake in Nigeria; Kapologwe et al. (2019): ↑ facility deliveries and ANC in Tanzania; Panda et al. (2016): mixed results across Indian states	Generally positive , especially for maternal and child health services; but gains uneven across contexts	Moderate – supported by multiple studies, but heterogeneity and confounding present
Efficiency of Resource Use	Chen et al. (2021): ↑ efficiency with predictable fiscal transfers in Uganda; Dwicaksono & Fox (2018): flexible allocation but risks inefficiency; Abimbola et al. (2019): local accountability improved resource use	Mixed – efficiency improved when fiscal transfers predictable and accountability strong; otherwise, risk of duplication and inefficiency	Moderate – good econometric evidence but limited external validity
Quality of Care	Abimbola et al. (2019): ↑ innovation in service delivery; Kapologwe et al. (2019): ↑ equipment & medicines availability; Panda et al. (2016): inconsistent adherence to clinical guidelines	Inconclusive – some evidence of responsiveness and facility readiness, but quality standards vary widely	Low to Moderate – few direct measures; outcome definitions heterogeneous
Equity and Health Outcomes	Dwicaksono & Fox (2018): disparities persist in LMICs; Abimbola et al. (2019): uneven equity gains in Nigeria; Panda et al. (2016): ↓ infant mortality in some states but inequities remain; Britteon et al. (2024): marginal improvements in UK, largely driven by socioeconomic factors	Mixed to negative – decentralization sometimes improves outcomes but often fails to reduce inequities; in some cases inequities widen	Moderate to High – consistent reporting of persistent inequities, but causal attribution limited
Contextual Factors	Chen et al. (2021): fiscal predictability critical; Abimbola et al. (2019): accountability structures key; Dougherty et al. (2021): balance between local autonomy & central oversight; Sapkota et al. (2023): global synthesis of enabling conditions	Determinant – political stability, fiscal capacity, and governance quality strongly condition outcomes	High confidence – convergent evidence across contexts, though mainly qualitative

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