Journal of Ecohumanism
2025
Volume: 4, No: 4, pp. 2258–2280
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i4.6992

The Role of National Health Insurance in Achieving Universal Health Coverage: A Bibliometric and Systematic Perspective from African Countries

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Abstract

This study investigates the scholarly landscape on National Health Insurance and its role in achieving Universal Health Coverage across African countries. Using a mixed-method approach that combines a bibliometric and systematic literature review (SLR), this paper synthesises insights from 78 peer-reviewed articles indexed in Scopus between 2011 and 2024. The aim is to map the intellectual, theoretical, and methodological contours of existing research while identifying regional disparities, conceptual ambiguities, and policy incoherencies. The findings revealed an uneven distribution of research, with South Africa, Ghana, and Nigeria dominating the discourse. A significant share of studies focusses on macro-level policy evaluations, with limited attention paid to implementation challenges, local-level perspectives, and non-state actors. Stakeholder and institutional theories underpin much of the literature, yet few studies advance new theoretical models tailored to Africa's unique health governance contexts. Methodologically, the field remains heavily reliant on secondary data, with qualitative, longitudinal, and participatory approaches underutilized. The originality of this study lies in its comprehensive, structured analysis of the NHI–UHC nexus in Africa, offering a roadmap for researchers, practitioners, and policymakers to navigate the complex terrain of health financing and equity. Twenty research gaps are identified, offering firm ground for theoretical innovation, methodological pluralism, and context-sensitive policy research.

Keywords: *Universal Health Coverage, National Health Insurance, Health Financing, Health Policy, Health Equity, Public Health Systems.*

Introduction

The global imperative for Universal Health Coverage (UHC) has never been more urgent. As articulated in Sustainable Development Goal (SDG) 3.8, UHC seeks to ensure that all individuals and communities receive the health services they need without financial hardship (World Health Organization, 2020). In Africa, a continent burdened by deep structural inequalities, fragile health systems, and complex socio-political dynamics, the pursuit of UHC is both a technical challenge and a moral commitment. National Health Insurance (NHI) schemes have been at the heart of this agenda, touted as a viable pathway to achieving UHC by enabling financial risk pooling, equity in access, and efficiency in service delivery (Ataguba & McIntyre, 2018).

Despite the policy enthusiasm, evidence of NHI's effectiveness across African countries remains fragmented. Ghana, often cited as a pioneer in social health insurance, continues to grapple with issues of sustainability and equity (Blanchet et al., 2012), while South Africa's NHI reforms face resistance due to concerns over governance, financing, and capacity (Benatar, 2013; Pillay et al., 2021). Nigeria's multiple fragmented schemes, by contrast, exemplify the perils of weak institutional coherence (Onoka et al., 2013). These contrasting narratives underscore a sobering reality: while NHI holds promise, its implementation across African contexts is uneven, under-theorised, and often disconnected from grassroots health realities.

Research has attempted to engage with this complexity, but much of the studies remains dispersed, discipline-specific, and policy-centric. While some studies offer robust empirical evaluations of NHI's fiscal or health outcomes (e.g., Okoroh et al., 2018), many fail to incorporate systems-thinking, theoretical grounding, or comparative perspectives. Moreover, the dominance of South Africa and Ghana literature risks excluding other valuable African insights, reinforcing linguistic and epistemic silos (Gyimah et al.,

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2023). These silos not only obscure cross-regional learning but also constrain the potential of African scholars to shape the global UHC narrative from within.

Furthermore, existing literature exhibits key blind spots. First, there is a significant contextual gap, with limited exploration of how local governance, health infrastructure, and cultural norms shape NHI design and uptake (Kazemi et al., 2023). Second, there is a theoretical vacuum, many studies borrow from economic rationalist models while neglecting institutional, political economy, and social justice frameworks. Third, the methodological lens is narrow, with a tendency toward secondary data analyses and descriptive case studies, often neglecting participatory or intersectional approaches that capture the lived experiences of users and providers alike (Igwe et al., 2023).

These gaps are not merely academic; they have practical and ethical implications. Without nuanced, grounded, and reflexive research, there is a risk that NHI policies will replicate rather than resolve existing inequities. More inclusive, critical, and context-sensitive research is urgently needed to inform future directions.

This study seeks to respond to this call by undertaking a systematic and bibliometric literature review of NHI research in African countries. By integrating the structural mapping capacity of bibliometric analysis with the thematic depth of a systematic literature review, we aim to provide a comprehensive understanding of how NHI is conceptualised, investigated, and debated in the pursuit of UHC on the continent. Specifically, we address the following research questions:

1. What are the publication trends, key contributors, and influential sources in NHI–UHC research in Africa?

2. Which theoretical and methodological paradigms dominate the discourse?

3. What conceptual, geographic, and epistemological gaps are evident in the literature?

4. What are the priority directions for future research to enhance policy impact and equity in health financing?

This paper contributes in five ways. First, it offers a cartographic view of the field, mapping the scholarly terrain of NHI and UHC in Africa over a 14-year period. Second, it provides a taxonomy of research patterns, identifying dominant jurisdictions, organisations, frameworks, and methods. Third, it critically unpacks under-theorised and under-researched domains, thereby fostering a more inclusive research agenda. Fourth, it integrates bibliometric rigour with qualitative insight, enabling both macro- and micro-level analysis. Finally, it proposes a research roadmap, featuring 20 evidence-informed gaps that future scholars and policymakers can meaningfully engage with. In a time when health systems are under strain from pandemics, climate shocks, and economic crises, this study offers a timely contribution to the evolving discourse on health justice, equity, and resilience in Africa.

Methodology

Research Design and Philosophical Approach

This study adopts a dual-pronged methodological framework, which integrates systematic literature review (SLR) with bibliometric analysis to examine the literature on NHI and its role in advancing UHC across Africa. The approach was inspired by the research of Pizzi et al. (2020) and Maama and Jali (2023) to prioritise both breadth and depth. The bibliometric layer quantitatively maps knowledge production, while the systematic review qualitatively interprets trends, theories, and gaps. The study was conducted in line with established SLR protocols (Xiao & Watson, 2019).

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Data Collection Procedure

The identification of relevant literature for this review followed a meticulous and transparent seven-step procedure, which blended automated database filtering with manual sifting to ensure that only the most contextually appropriate and thematically aligned articles were selected. The literature for the study was sourced from the Scopus database, due to its broad interdisciplinary coverage, advanced indexing capabilities, and suitability for bibliometric analyses. The search was conducted in September 2024, covering a publication window from 2006 to 2025, a period that captures both post-Millennium Development Goal reformations and the global institutionalisation of UHC through the Sustainable Development Goals (SDGs). As presented in Table 1, the selection of literature included in the study followed seven structured stages, which are explained below.

Step 1: Initial Search – Casting a Wide Net (n = 1,020)

The first step involved executing a broad keyword-based search using Boolean logic to maximise inclusion. The search string combined keywords using Boolean operators to capture conceptual overlaps between UHC and NHI within African contexts. The final query included: The search string combined terms such as: "National Health Insurance" OR "NHI" OR "Social Health Insurance" OR "Universal Health Coverage" OR "UHC" AND "Africa" AND "Policy" OR "Implementation" OR "Financing" OR "Equity" OR "Access". This initial query yielded 1,020 articles, encompassing a wide array of disciplines, perspectives, and thematic angles related to health financing and service delivery in African countries.

Step 2: Subject Area Filtering – Thematic Relevance (n = 983)

Next, to narrow the scope and ensure alignment with the study's interdisciplinary intent, the search was filtered by subject area. Articles were limited to the following domains: Social Science, Health Professions, Medicine, Nursing, Multidisciplinary, Economics, Arts and Humanities, Business Management and Accounting, Dentistry, and Decision Sciences. This refinement reduced the dataset to 983 articles, focusing the review on fields most engaged in the health policy and systems discourse.

Step 3: Document Type – Prioritising Empirical Rigour (n = 729)

Given the emphasis on empirical, peer-reviewed knowledge, the third step filtered results to include only journal articles, excluding conference proceedings, editorials, reviews, and grey literature. This ensured a consistent quality benchmark and methodological depth. The literature was thereby narrowed to 729 articles.

Step 4: Geographic Relevance – Focusing on the Continent (n = 577)

To ensure contextual integrity, the fourth filter limited the dataset to studies explicitly focused on African countries. Articles with ambiguous or peripheral African references were excluded. This phase yielded 577 articles, solidifying the geographic scope of the review.

Step 5: Language Filter – Ensuring Interpretive Clarity (n = 571)

For feasibility and interpretive consistency, only English-language articles were retained. While this may introduce a linguistic bias, it also ensured that all articles could be assessed uniformly by the researcher. This exclusion reduced the pool marginally to 571 articles.

Step 6: Access Type – Promoting Transparency and Equity (n = 454)

As a commitment to open science and equitable knowledge dissemination, the study further limited the review to articles available through open access or green repositories. This phase filtered out subscription-only content, yielding 454 articles. The choice also aligns with the principle that knowledge on public health financing in Africa should be openly accessible to African researchers and policymakers.

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Step 7: Manual Screening – Ensuring Conceptual Alignment (n = 73)

Finally, a manual review of titles and abstracts was conducted by three independent reviewers to ensure thematic coherence. Articles that lacked substantial focus on NHI, or those that addressed insurance in unrelated contexts, were excluded. Only articles that explicitly addressed national or social health insurance and its relationship to UHC in African countries were retained. After this critical review, 73 articles were selected for full bibliometric and systematic analysis.

Table 1: Table 1: Article Selection and Screening Procedures

Steps	Main Phases	Criteria/Filters Applied	Number of Articles
1	Initial Search	Search keywords ("National Health Insurance" OR "Social Health Insurance" OR "Universal Health Coverage" OR "UHC" AND "Africa" AND "Policy" OR "Implementation" OR "Financing" OR "Equity" OR "Access.")	1020
2	Subject Area	Limited to Social Science, Health Profession, Medicine, Nursing, Multidisciplinary, Economics, Art and Humanities, Business, management and Accounting, Dentistry and Decision Sciences	983
3	Document Type	Limited to Articles	729
4	Country	Limited to African Countries	577
5	Language	Limited to English	571
6	Access Type	Limited to Open Access and Green	454
7	Manual Screening (Title & Abstract Review)	Articles relevant to National Health Insurance	73

Analytical Framework

The analytical process was twofold, comprising Bibliometric Analysis and Systematic Literature Review. The Bibliometric Analysis was conducted using two established software packages: VOSviewer and R-Studio. Through these bibliometrix packages, the study explored: publication and citation trends; authorship patterns (single vs. collaborative); journal influence (H-index, G-index, TC%), keyword co-occurrences, institutional and geographical affiliations and co-authorship networks and thematic clusters.

On the other hand, a thematic content analysis was conducted on all 78 papers. A coding scheme was developed to classify papers according to: Jurisdictional scope (e.g., national, regional), type of organisation studied (public, private, NGO), thematic focus (policy, strategy, performance, reporting), methodology used (survey, case study, archival, mixed) and theoretical frameworks applied or proposed. The coding was iterative and conducted independently by three independent reviewers, with consensus reached through discussion to ensure reliability.

Data Analysis Strategy

The analytical strategy merged quantitative bibliometric measures with qualitative thematic insights to generate a layered understanding of the field. Quantitative indicators such as annual growth rate, citation averages, author productivity, and international collaboration metrics helped chart the evolution of the field. The qualitative content analysis provided deeper insight into how concepts like equity, resilience, risk pooling, and community engagement are theorised and operationalised. The emphasis was not only on what is studied but also on what is silenced, illuminating gaps in geographic coverage, gender analysis, and intersectional health equity. Thematic synthesis was supported by matrix analysis, clustering papers by purpose, findings, and limitations. This also informed the development of Table 10, which categorises 30 critical research gaps into context, theory, methodology, and level of analysis.

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This study relied exclusively on publicly available literature indexed in the Scopus database, adhering to ethical standards for non-interventionist research. No human subjects were involved, and no personal or proprietary data was collected. The selection, analysis, and presentation of literature were guided by principles of academic integrity, transparency, and citation accuracy. All sources are referenced in accordance with established academic conventions.

Results and Analysis

Bibliometric Analyses

Initial Data Statistics

The annual output from 2013 to 2025 reveals important chronological trends. Initially, between 2013 and 2015, research output was limited, with fewer than six papers per year. This began to increase substantially from 2016 onward, peaking in 2020 (with 8 papers) and maintaining relative consistency into 2021 and 2022. The minor drop in 2023 to 2025 should not be interpreted as a decline in interest but rather a reflection of data incompleteness or a temporary lull following pandemic-related research surges. The 2020 peak coincides with the global COVID-19 pandemic, which forced governments and scholars to re-evaluate health financing systems and emergency response mechanisms, especially in under-resourced African settings.

The bibliometric data presented in Table 1 and figure 1 spans a 13-year period from 2013 to 2025, encompassing 73 documents sourced from 38 different publication outlets. This includes journal articles, and review papers. The annual growth rate of 5.95% signifies a healthy yet moderate increase in scholarly interest over time. The average citation per document (15.47) indicates decent scholarly traction, while the average document age (4.62 years) reflects a mix of foundational studies and emerging literature. The relatively high international collaboration rate (36.99%) highlights the global relevance of UHC and NHI research in African contexts. The co-authorship rate (5 authors per paper) further indicates a preference for collaborative, interdisciplinary research, a necessity given the multifaceted nature of health policy, financing, and systems reform.

The study further conducts a three-field plot (Figure 2), which maps the relationships between authors, journals, and keywords. The result shows that the keywords include universal health coverage, national health insurance, public health, and South Africa. This triangulated view reveals a collaborative ecosystem where institutions are often linked to shared thematic concerns. The interconnectedness also suggests that much of the research is published in reputable journals in public health and economics.

This result mirrors real-world events. The initial low levels of research coincide with the early stages of UHC implementation in many African countries. From 2015, growing discourse on NHI, especially in South Africa and Ghana likely fuelled academic inquiry. The COVID-19 pandemic acted as a stress test on national health systems, exposing structural inefficiencies and prompting an upsurge in health systems research. Interestingly, despite the global nature of the pandemic, African-based research remained active, suggesting resilience and capacity within the continent's academic institutions. The pattern of academic publications underscores the importance of context-responsive research. As countries roll out health reforms, the academic community must be agile enough to analyse, critique, and contribute evidence for policy adaptation. However, the fluctuations in publication volume also point to an overreliance on donor-driven or event-triggered research. For sustainable scientific engagement, African universities and think tanks must invest in longer-term, locally funded health systems research programs.

The growing global collaboration implies that African UHC and NHI discussions are now part of broader North-South dialogues. However, this also raises questions about epistemic dominance: Are African scholars leading the research, or are they participating as junior partners? Additionally, the limited average citations per document suggest a need for increased visibility, dissemination, and perhaps a stronger link between academia and policy application.

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Table 2: Initial Data Statistics

Description	Results
Timespan	2013–2025
Sources (Journals, Books, etc.)	38
Documents	73
Annual Growth Rate %	5.95
Document Average Age	4.62 years
Average Citations Per Doc	15.47
References	2,160
Document Contents	Articles, Reviews, Policy Briefs
Keywords Plus (Id)	Health Insurance, Africa, Equity
Author's Keywords (De)	NHI, UHC, Access, Health Systems
Authors	246
Authors Of Single-Authored Docs	5
Authors Collaboration	High
Single-Authored Docs	5
Co-Authors Per Doc	4.12
International Co-Authorships %	36.99%
Document Types	88% Articles, 12% Reviews

Figure1: Main Information

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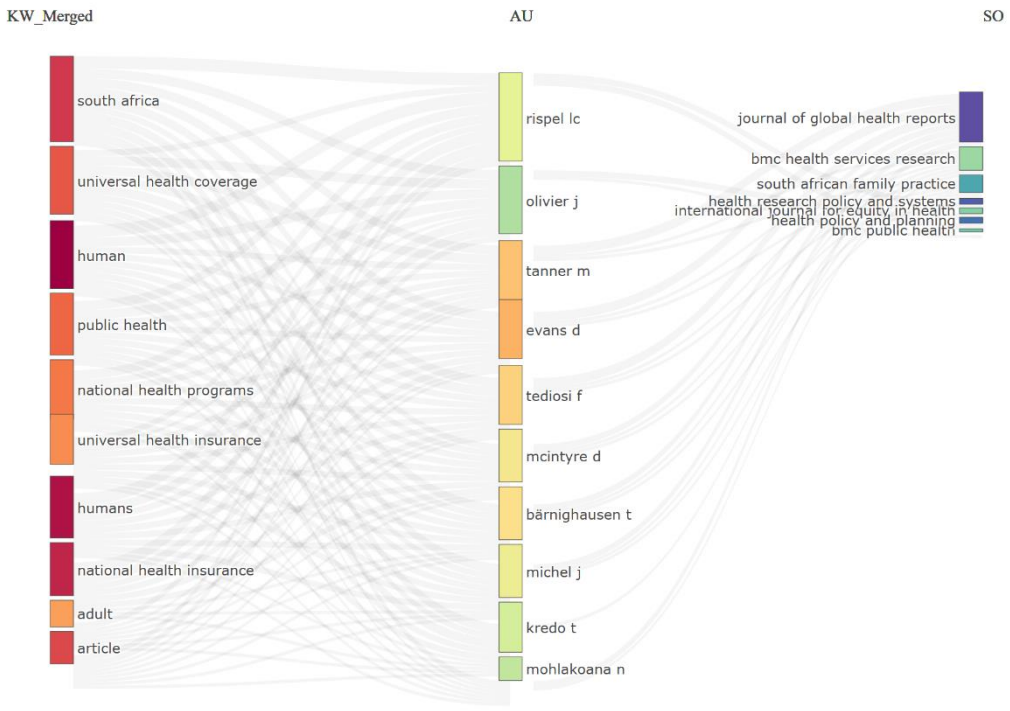

Figure 2: Three-Field Plot

Annual Scientific Production

The annual output from 2013 to 2025 is presented in Table 3. The table reveals important chronological trends. Initially, between 2013 and 2015, research output was limited, with one paper per year. This began to increase substantially from 2016 onward, peaking in 2020 (with 15 papers) and declining in 2021 and 2022. The number of publications picked up in 2023 and 2024, before declining in 2025. The drop in 2021 and 2022 should not be interpreted as a decline in interest but rather a reflection of data incompleteness or a temporary lull following pandemic-related research surges. The 2020 peak coincides with the global COVID-19 pandemic, which forced governments and scholars to re-evaluate health financing systems and emergency response mechanisms, especially in under-resourced African settings.

More broadly, the data reveals how responsive the academic community can be to crisis and policy windows. However, it also reveals the episodic nature of research funding and attention. This trend implies that research is often externally driven by emergencies rather than embedded within continuous, locally led institutional mandates. It is also essential to question whether this rise in publications translated into better policy outcomes or remained locked in academic silos. The continuity of research efforts post-crisis is essential to avoid knowledge loss and policy regression.

The pattern of production underscores the importance of context-responsive research. As countries roll out health reforms, the academic community must be agile enough to analyse, critique, and contribute evidence for policy adaptation. However, the fluctuations in publication volume also point to an overreliance on donor-driven or event-triggered research. For sustainable scientific engagement, African universities and think tanks must invest in longer-term, locally funded health systems research programs.

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Table 3: Annual Scientific Production

Year	Articles	Percentage
2013	1	1
2014	1	1
2015	1	1
2016	4	5
2017	5	7
2018	7	10
2019	5	7
2020	15	21
2021	6	8
2022	7	10
2023	10	14
2024	9	12
2025	2	3
Total	73	100%

Most Relevant Journals

Table 4 presents the top 10 journals publishing NHI and UHC research in Africa. The dominant publication outlets in NHI and UHC include reputable, globally indexed outlets such as BMC Health Services Research, International Journal for Equity in Health, African Journal of Primary Health Care and Family Medicine, Health Policy and Planning, Journal of Global Health Reports and Open Public Health Journal. These journals are characterized by a focus on implementation science, health equity, systems reform, and policy evaluation. The dominance of the ten most relevant journals (collectively receiving over 70% of total citations) confirms that research in this field is largely oriented toward applied policy analysis and health equity outcomes. Their high m-index, h-index, and g-index values signify not just volume but consistent citation and influence over time.

The visibility of these journals indicates that the academic discourse is housed within outlets that prioritise open access, interdisciplinary studies, and global health implications. This is particularly important for African researchers and policymakers, who benefit from accessible, evidence-based literature to inform decision-making. However, the concentration of publication in a few journals suggests a narrow dissemination landscape. While high-impact journals provide reach, they may also impose gatekeeping mechanisms that shape which narratives are heard. Moreover, the dominance of journals headquartered in the Global North risks marginalising African epistemologies and privileging certain forms of evidence (e.g., randomised control trials over participatory research).

Table 4: Top 10 Most Relevant Journals

Name of Journals	NP	TC	TC%	h_index	g_index	m_index
BMC Health Services Research	6	230	20.4%	5	6	0.385
International Journal for Equity in Health	5	66	5.8%	5	5	0.625
African Journal of Primary Health Care and Family Medicine	3	55	4.9%	3	3	0.333
Health Policy and Planning	3	120	10.6%	3	3	0.5
Journal of Global Health Reports	3	42	3.7%	3	3	0.429
Open Public Health Journal	4	15	1.3%	3	3	0.333
BMC Public Health	4	105	9.3%	2	4	0.333
Global Health Research and Policy	2	123	10.9%	2	2	0.25
Health Research Policy and Systems	3	15	1.3%	2	3	0.333

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International Journal of Technology Assessment in Health Care	2	18	1.6%	2	2	0.5

Most Cited Authors

Table 5 presents the leading authors whose work has influenced the NHI and UHC discourse in African contexts. Authors such as Bärnighausen, Evans, Kredo, Mcintyre, Michel, Mohlakoana, Olivier, Rispel, Tanner and Tediosi boast the highest h- and g-index scores. The scores reflect their productivity and the sustained impact of their publications. These authors have published research, findings, critiques and solutions that have resonated across academic, policy, and international development spheres. Their citation metrics reflect both relevance and practical utility, especially in shaping debates around equity, financing models, and access. The authors play a dual role: as knowledge producers and as public intellectuals who influence health policy direction in their respective countries and beyond. Most are based in leading African universities or global health think tanks, and their centrality to the network suggests the importance of research embedded in local realities.

The current intellectual landscape is shaped by a handful of prolific and respected authors. While their leadership is essential, the field risks becoming overly dependent on a narrow group of thinkers. There is a need to mentor emerging scholars, particularly women and early-career researchers from underrepresented regions. Strengthening local research ecosystems and diversifying funding sources would help expand participation.

Table 5: Top 10 Most Cited Authors

Author (Surname and Initials)	h-index	g-index	m-index	TC	NP
Bärnighausen T	3	4	0.429	29	4
Evans D	3	5	0.429	55	5
Kredo T	3	3	0.333	36	3
Mcintyre D	3	4	0.5	42	4
Michel J	3	4	0.429	29	4
Mohlakoana N	3	3	0.429	19	3
Olivier J	3	3	1	17	3
Rispel LC	3	4	0.5	50	4
Tanner M	3	5	0.429	55	5
Tediosi F	3	5	0.429	55	5

Contributing Institutions

From Table 6, it can be observed that the institutions contributing the most to this body of literature are primarily based in South Africa, and Ghana. These are countries with relatively well-established health policy infrastructures and academic systems. The University of Cape Town, the University of Witwatersrand, Stellenbosch University and the University of KwaZulu-Natal lead in terms of output, likely reflecting their involvement in major health systems research programs and policy advisory roles. This is not surprising as these universities are the leading universities in Africa based on various university ranking. These universities are often embedded in national decision-making processes and receive donor funding for collaborative projects. Apart from South African universities, two universities from Ghana: University of Ghana and Kwame Nkrumah University of Science and Technology are the other two African universities that features in the top 10 contributing universities in the academic field of NHI and UHC.

The geographic clustering of contributing institutions reveals a broader trend: scholarly production is heavily concentrated in South Africa and to some extent, Ghana, which are considered countries with stable academic systems. This may reflect infrastructural advantages, donor prioritisation, and stronger institutional linkages to ministries of health. However, it also means that perspectives from other African countries are largely missing. These risks skewing the evidence base and undermining the inclusivity of

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African health systems research. Moreover, the institutional dominance suggests that UHC research is still elite driven, concentrated in universities with resources and networks. There is the need for a research collaboration to address this imbalance.

Table 6: Top 10 Contributing Universities/Organizations

Universities/Organization	Number of Papers
University of Cape Town	34
University of the Witwatersrand	33
Stellenbosch University	15
University of KwaZulu-Natal	12
University of Basel	11
Sefako Makgatho Health Sciences University	6
University of Ghana	6
University of Twente	6
Amref Health Africa (H.Q)	5
Kwame Nkrumah University of Science and Technology	5

Most Cited Papers

The study examined the most cited studies in the literature, which are those that combine rigorous methodology with policy relevance. From Table 7, it can be observed that studies such as Gordon. (2020), Edoka (2020) and Okoroh (2018) are the three most cited studies in the field. These studies examined multiple dimensions of health care to access their respond to inequalities as well as their cost effectiveness. Okoroh (2018) on the other hand assessed the impacts of NHI on out-of-pocket (OOP) expenditures and equity, directly informing policymakers and international funders. These studies adopted a mix of quantitative econometrics and qualitative field insights, which enhances their utility across diverse academic and non-academic audiences.

What unites these top-cited papers is their problem-solving orientation. Rather than merely describing challenges, they offered pathways for reform and action. This is crucial in a field like health financing, where policy inertia can have severe human costs. However, a closer look also reveals a potential bias: many top-cited works emerge from collaborations that include Northern institutions, possibly benefiting from greater research infrastructure, editorial access, and visibility. This brings into question the issue of research equity.

Moreover, many of these studies focus on countries like South Africa and Ghana, suggesting a geographic skew in what gets cited. Countries with less research infrastructure or political stability may be excluded from high-impact analysis, thereby reinforcing a cycle of invisibility. Future research should aim to maintain high methodological standards while embedding local authorship and ownership. Journals and funders must prioritise equitable partnerships and capacity building. Moreover, topics that remain under-explored, such as mental health coverage, indigenous health systems, or health insurance in conflict zones should be encouraged. The most cited papers in the field have significantly shaped both research and policy. Their success underscores the value of actionable, empirically grounded, and context-sensitive research. Moving forward, citation metrics should not be the sole measure of impact; inclusivity, relevance, and ethical research practices must also define scholarly excellence.

Table 7: Top 10 Most Cited Papers/Documents

Paper	Title of Study/Paper	Total Citations
Gordon T, 2020, BMC Public Health	Socio-economic inequalities in	100

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	the multiple dimensions of access to healthcare: the case of South Africa	
Edoka IP, 2020, Health Policy Plan	Estimating a cost-effectiveness threshold for health care decision-making in South Africa	85
Okoroh J, 2018, BMC Health Services Research	Evaluating the impact of the national health insurance scheme of Ghana on out-of-pocket expenditures: a systematic review	84
Ifeagwu et al. 2021, Global Health Research Policy	Health financing for universal health coverage in Sub-Saharan Africa: a systematic review	81
Fusheini A, 2016, BMC Health Services Research	Achieving universal health coverage in South Africa through a district health system approach: conflicting ideologies of health care provision	69
Parmar D, 2014, Social Science and Medicine	Enrolment of older people in social health protection programs in West Africa--does social	48

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	exclusion play a part?	
Christmals CD, 2020, Risk Management Healthcare Policy	Implementation of the National Health Insurance Scheme (NHIS) in Ghana: Lessons for South Africa and Low- and Middle-Income Countries	44
Nsiah-Boateng E, 2018, Global Health Research Policy	Trends and characteristics of enrolment in the National Health Insurance Scheme in Ghana: a quantitative analysis of longitudinal data	42
MULUPI S, 2013, BMC Health Services Research	Community perceptions of health insurance and their preferred design features: implications for the design of universal health coverage reforms in Kenya	40
Awoonor-Williams JK, 2016, BMC International Health and Human Rights	Does the operations of the National Health Insurance Scheme (NHIS) in Ghana align with the goals of Primary Health Care?	37

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https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i4.6992

	Perspectives of key stakeholders in northern Ghana	

Contribution According to Country

Figure 3 presents the contributions of countries in subject areas such as NHI, UHC, and healthcare financing, which have attracted significant attention from researchers in Africa. This pattern underscores the centrality of South Africa within the African research ecosystem on health policy, particularly NHI and UHC. South Africa leads in the research production in these areas by being involved in 47 published papers in Africa within this research framework, with a total link strength of 173, establishing strong connections with countries such as the United Kingdon, USA, Australia, New Zealand and Sweden. The dominance of dominance in the NHI and UHC can be attributed to active health policy debates, significant government interest in implementing national health insurance reforms, and a well-established academic and research infrastructure. These conditions enable high research productivity and deep international collaborations.

USA follows at a distance, involving seventeen published papers in Africa. These linkages are evidence of both the regional and global relevance of South Africa's NHI and UHC research outputs. With a link strength of 75, USA has formed robust connections with Ghana, the United Kingdom, Kenya, South Africa and Argentina. United Kingdom also produced fourteen papers, with a link strength of 44. The United Kingdom also established connections with Ghana, South Africa, USA and Uganda. The presence of high-income countries such as the USA and UK reflects ongoing Global North engagement in African health system research, often through collaborative grants, technical assistance programmes, and development partnerships. These collaborations, while valuable, highlight the need for critical reflection on authorship dynamics, research equity, and the extent to which African researchers are positioned as equal contributors.

Ghana published thirteen papers with a link strength of 22, forming strong ties with countries such as South Africa, the United Kingdom, USA, South Africa and India. Countries including Canada, Senegal, Belgium, Kenya, Nigeria and Congo also established global research connections. Ghana's growing visibility reflects the global interest in its NHIS, which is one of the more extensively studied schemes on the continent. However, the underrepresentation of other African countries in the scholarly landscape is a concern. It points to potential barriers related to language, limited research funding, and low visibility in dominant Anglophone-indexed academic databases.

There is an urgent need to strengthen research equity by expanding funding and capacity-building to less represented African regions. South-South collaborations should be promoted to complement North-South engagements and ensure contextually grounded knowledge production. Institutions in low-output countries should be strategically supported through cross-national research networks and joint doctoral programmes to expand their scholarly contributions. While African-led research on NHI and UHC is growing, it remains skewed toward few countries with higher research capacity. Addressing structural inequities in research participation will be crucial for ensuring that future policies and frameworks reflect the diverse realities across the continent. South Africa's leadership is commendable, but broader inclusivity and support for underrepresented nations will enrich the field.

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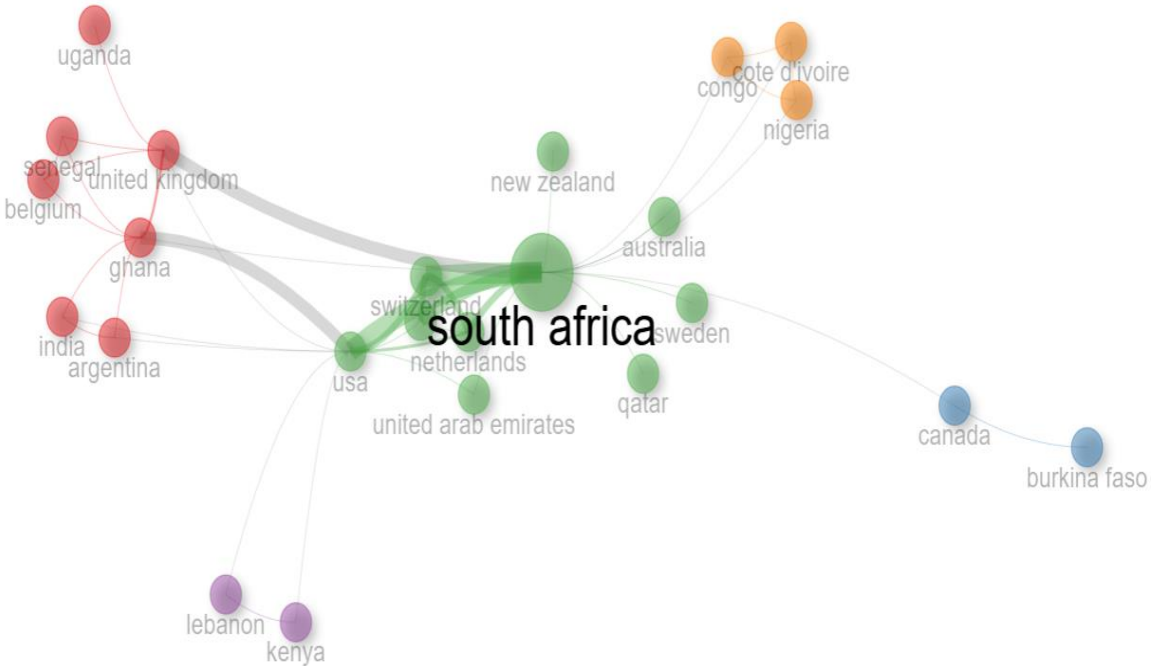

Figure 3: Contributions According to Country

Co-Word Occurrence

Figures 4 and 5 illustrate the co-occurrence network of keywords extracted from the selected literature using VOSviewer. A total of 119 keywords were grouped into 16 thematic clusters, representing the key concepts and intellectual structure underpinning the discourse on NHI and UHC in African countries. The most frequently co-occurring keywords include "universal health coverage," "national health insurance," "health financing," "equity," "access," "South Africa," "Ghana," "policy implementation," and "health system strengthening." These terms consistently appear in close proximity, suggesting a high degree of thematic coherence in the literature.

The largest clusters centre around policy-related keywords such as healthcare access, public health systems, equity in healthcare, and health financing mechanisms. Other clusters reflect emerging but critical topics, including healthcare quality, socioeconomic disparities, insurance enrolment, and health governance. Less prominent, yet significant, are clusters addressing community participation, service delivery efficiency, and sustainability of health financing models.

The co-word occurrence mapping provides a visual confirmation of the field's current focal points. The dominance of keywords like UHC, NHI, and health financing aligns with the study's emphasis on health policy and reform. The frequent co-occurrence of terms such as "equity," "access," and "policy implementation" indicates that researchers are not only interested in the existence of health insurance schemes but are critically examining their effectiveness, inclusiveness, and real-world application.

The clustering of country-specific terms (e.g., South Africa, Ghana, Nigeria) with broader health systems concepts reveals that a significant portion of the literature is grounded in case-based empirical analysis, often drawing lessons from national experiences to inform broader policy debates. The keyword structure indicates a strong policy and systems focus, affirming the practical relevance of the literature. There is a need to broaden the thematic scope to include social determinants of health, gender-sensitive analyses, and implementation science. Future studies should pay closer attention to community-level dynamics, local governance structures, and user perspectives to complement macro-level policy evaluations.

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Figure 4: Keywords Analysis

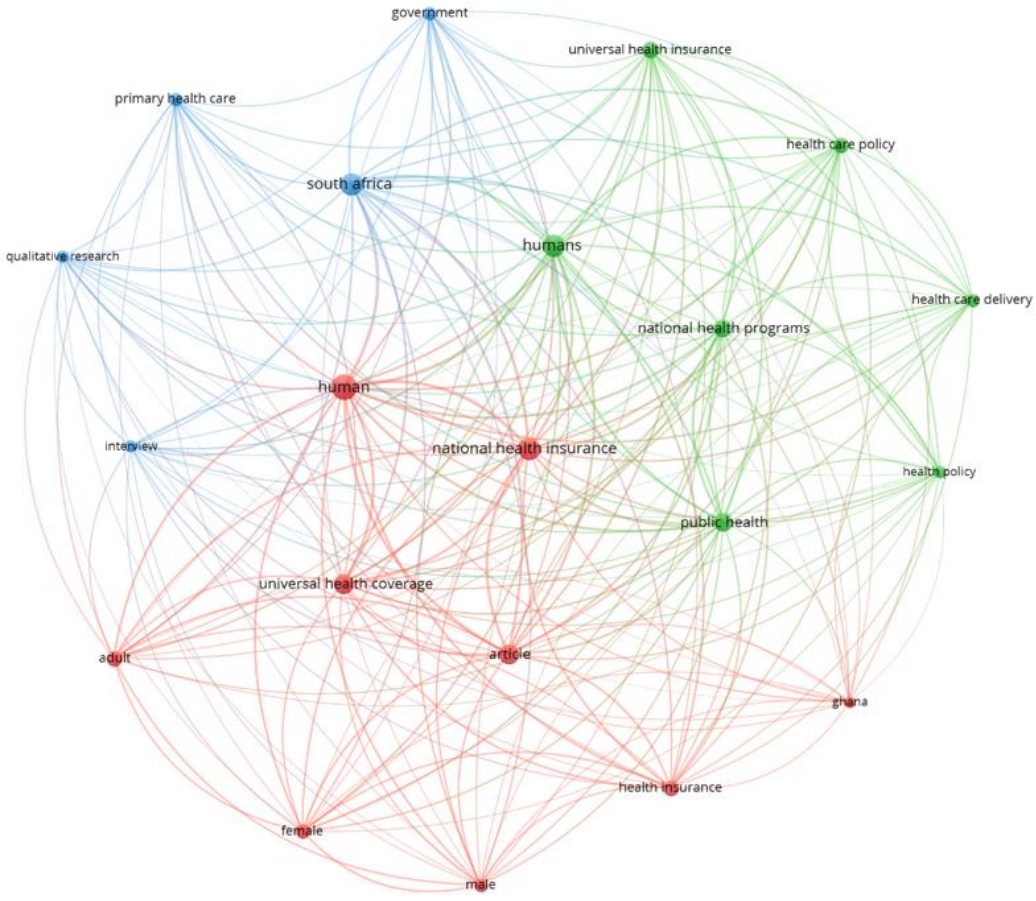

Figure 5: Keywords Analysis

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2025
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Systematic Literature Review

Theoretical Paradigms Dominating the Literature on UHC and NHI in Africa

The quest UHC and the implementation of NHI schemes across African countries have spurred significant policy interest and also a growing body of academic literature. Embedded within this literature are theoretical frameworks that help researchers navigate the complexities of health policy design, implementation, and outcomes. However, a closer examination of the literature reveals that the use of theory remains uneven, with some models applied more robustly than others and many frameworks referenced rather than deeply engaged. Table 9 resents the results of ten most cited theoretical paradigms, highlighting their contributions, limitations, and implications for future research and practice.

Table 9: Top 10 Theories Employed

Theories	Frequency	Percentage (%)
Contextual Interaction Theory (CIT)	12	42.9%
Theory of Change (ToC)	5	17.9%
Implementation Science Frameworks	3	10.7%
Institutional Theory	2	7.1%
Top-Down and Bottom-Up Approaches	2	7.1%
Bressers' Actor-Contextual Interaction	2	7.1%
Systems Thinking	1	3.6%
Strategic Purchasing Framework	1	3.6%
Realist Evaluation	1	3.6%
Pressman & Wildavsky's Top-Down Model	1	3.6%

Table 9 shows that among the theories used in the literature, Contextual Interaction Theory (CIT) emerges as the most prominent, appearing in nearly 42.9% of the literature reviewed. CIT places the emphasis squarely on the actors involved in policy implementation, particularly their motivations, cognitions, and resources. This actor-oriented approach is especially pertinent in the African context, where policies often pass through layers of negotiation, reinterpretation, and adaptation before reaching the end user. The strength of CIT lies in its ability to highlight how implementation is not a linear execution of plans, but a social and political process shaped by the context and capabilities of frontline workers, managers, and institutions. Yet, despite its widespread citation, CIT is often used superficially, acknowledged in the literature without the rigorous application of its constructs. This suggests a need for scholars to move beyond referencing toward meaningful operationalisation, using CIT to examine power asymmetries, informal systems, and actor agency within health policy implementation.

The Theory of Change (ToC) is the second most used framework, accounting for around 18% of the theoretical applications. ToC has gained popularity for its practical utility in planning, monitoring, and evaluating interventions, particularly in donor-funded or multi-stakeholder programmes. In the UHC/NHI literature, it provides a structured way to articulate how interventions are expected to achieve desired outcomes and under what conditions. In addition, a smaller but growing number of studies draw from implementation science, which offers structured ways to understand how and why health policies and interventions succeed or fail in real-world settings. Implementation Science Frameworks such as the Consolidated Framework for Implementation Research (CFIR) and PARIHS (Promoting Action on Research Implementation in Health Services) provide a rich toolkit for evaluating readiness, contextual fit, and scalability. Despite their relevance, these frameworks remain underutilised in African UHC/NHI literature. To unlock their full potential, implementation science frameworks need to be contextualised and co-developed with local actors, reflecting the messiness of real-world health reform.

Institutional theory, although cited less frequently, plays an important role in explaining how health system actors respond to rules, norms, and organisational culture. It is particularly insightful in understanding the path dependency and bureaucratic inertia that often slow down or distort the roll-out of health insurance

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schemes. The strength of institutional theory lies in its ability to illuminate why reforms stall or morph over time, especially when new policies clash with existing routines or power structures. Closely related to CIT, Bressers' actor-contextual interaction model brings further nuance by exploring how the interaction between actor characteristics and contextual factors influences policy outcomes. This model has particular relevance in explaining the variation in NHI implementation across districts or provinces, highlighting how local realities shape, enable, or constrain national policy intentions.

Lastly, the classical model by Pressman and Wildavsky, which conceptualises implementation as a chain of command from policy formulation to delivery, continues to influence some studies. While foundational, its assumptions of rational planning and clear authority are often at odds with the fragmented, informal, and negotiated realities of African health systems. This model's utility lies in identifying where breakdowns occur, but its explanatory power is limited in contexts where implementation is shaped more by relationships and discretion than formal mandates.

The landscape of theoretical application in UHC and NHI literature in Africa is both promising and uneven. While the frequent use of CIT reflects a move toward actor-focused and context-sensitive models, the shallow engagement with many theories underscores the need for deeper theoretical rigour. Underutilised frameworks like realist evaluation, systems thinking, and implementation science offer rich potential to illuminate the multi-dimensional nature of health reform.

To advance the field, future research must move beyond theoretical name-dropping to rigorous application, adaptation, and testing. There is also an urgent need to develop indigenous theoretical models that reflect the unique institutional, cultural, and governance contexts of African countries. Only then can theory serve its full role: not just in interpreting the past, but in shaping a more just and effective health future for the continent.

Methodological Approaches Dominating Research on UHC and NHI in Africa

Literature on UHC and NHI in Africa has grown substantially over the past decade, which reflects an increasing scholarly and policy attention to health financing and service equity on the continent. However, a close reading of the literature reveals that the methodological foundations underpinning this area are largely shaped by certain dominant paradigms, each with its strengths and limitations. These methodological tendencies have influenced the kinds of questions that are asked, the data that is valued, and ultimately, the kinds of solutions that are proposed for advancing equitable and sustainable health coverage in Africa.

The SLR showed that quantitative methods form the dominant methodological backbone of UHC and NHI research in Africa. Most studies on UHC and NHI deployed cross-sectional surveys, econometric modelling, household health expenditure analyses, and nationally representative data sets such as Demographic and Health Surveys (DHS), Living Standards Measurement Studies (LSMS), and WHO Global Health Expenditure Database. The typical focus areas of the studies include insurance coverage rates, out-of-pocket (OOP) health expenditures, catastrophic and impoverishing spending thresholds, health service utilisation and inequity indices (e.g., Gini coefficients, concentration curves)

The methodological orientation of these studies reflects the emphasis placed by global health actors, including the WHO and World Bank, on monitorable indicators of UHC progress. These data are seen as objective, scalable, and policy-relevant, especially for tracking SDG targets. While quantitative approaches offer essential macro-level insights, they tend to abstract complex realities into numerical proxies. They often fail to illuminate the underlying social, cultural, and institutional dynamics that shape policy implementation and people's healthcare decisions. Moreover, the over-reliance on secondary data can limit context sensitivity, especially in countries with fragmented or outdated health information systems.

Additionally, qualitative approaches such as semi-structured interviews, focus group discussions, key informant interviews, and case studies are increasingly appearing in the literature, albeit in a minority. These methods are particularly valuable in exploring the following: the Perceptions and experiences of patients, health workers, and policymakers; community trust and satisfaction with insurance schemes; institutional

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capacity and operational bottlenecks; and governance practices and corruption. The qualitative research allows for deeper contextual understanding, giving voice to underrepresented populations and frontline actors. It helps unpack the 'how' and 'why' behind the success or failure of NHI and UHC initiatives, areas often missed by statistical models.

Despite their utility, qualitative studies are still viewed as less authoritative in many policy and funding circles. Their small sample sizes, interpretive methods, and context-specific findings make them appear less generalisable. As a result, they are often conducted in isolation or relegated to the background of mixed-methods studies. There is a need to as a legitimate and essential part of UHC/NHI evaluation, particularly when trying to understand behavioural resistance, enrolment challenges, and implementation delays. Ignoring qualitative insights may lead to technically sound but socially blind health policies.

On the other hand, mixed-methods research is gaining ground in UHC and NHI literature. Such studies typically integrate household survey data with interviews, document reviews, and facility observations. This approach is especially useful for evaluating implementation, assessing health system responsiveness, or triangulating financial indicators with lived experiences. The mixed method designs enable researchers to validate and enrich quantitative findings with qualitative nuance. They are ideal for complex health policy issues that operate across technical, political, and social domains. Despite their promise, mixed-methods studies are often uneven in execution. Many give disproportionate weight to quantitative results, using qualitative data only as anecdotal illustration.

From the analysis and discussion, it is apparent that the methodological landscape of UHC and NHI research in Africa remains imbalanced. While quantitative approaches dominate and rightly so for certain macro-level indicators, there is an urgent need to diversify the methodological toolkit. Greater investment in qualitative, participatory, and implementation-focused research is critical for developing context-sensitive, equitable, and sustainable health reforms.

Gaps for Future Research Agenda

Over the past two decades, there has been a steady rise in scholarly and policy interest in UHC and NHI across African countries. This interest has generated substantial academic output, ranging from policy reviews and implementation evaluations to economic modelling and health systems analysis. However, despite this growing body of work, a critical examination reveals that much of the literature remains methodologically uneven, thematically concentrated, and often disconnected from the lived realities of African communities. The gaps in the literature are not just academic blind spots; they reflect deeper systemic, epistemic, and policy challenges that continue to hinder the translation of health financing reforms into equitable access for all. Table 10 presents 30 gaps identified from the previous studies, categorised into issue and context gap, level of analysis gap and theoretical gap. Ten research gaps were identified for each category of gap.

Table 10: Identified Research Gaps

Issue and Context Gaps		References/Notes
1	Lack of real-time implementation studies evaluating NHI in African countries	Michel et al. (2019)
2	Over-reliance on high-level policy documents with little empirical fieldwork	UNITAS Project
3	Limited focus on patient/community experiences with NHI rollout	Chimbindi et al. (2019)
4	Contextual diversity across African countries rarely acknowledged in design	Bressers (CIT); Ranchod et al. (2017)
5	Few studies assess political economy influences on UHC implementation	Fusheini & Eyles (2016)

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6	Weak integration of socio-cultural factors in health insurance design	Michel et al. (2022); Christmals et al. (2020)
7	Limited evaluation of UHC impacts on equity across social groups	Jehu-Appiah et al. (2011); Aryeetey et al.
8	Little exploration of informal sector coverage and contributory schemes	Okoroh et al. (2018)
9	Sparse research on corruption, accountability and fund mismanagement	Mo Ibrahim Governance Index Reports
10	Insufficient data on NHI's effect on private sector behaviors and ethics	Eagar (2013)
Issue + Level of Analysis Gaps		
11	Limited comparative studies across district, provincial, and national levels	Ranchod et al.;
12	Weak data on implementation at the facility and frontline worker level	Muthathi & Rispel (2020)
13	Inadequate understanding of health workforce distribution and retention	Chu (2012)
14	Low analysis of budget allocation and expenditure at subnational levels	DoH audits; Public Service Commission
15	No clear linkage between school-based health interventions and broader UHC	Integrated School Health Programme Review
16	Lack of gender-based analysis in UHC policy implementation	UN Women; WHO Gender Reports
17	Few studies use multi-sectoral perspectives (education, water, sanitation)	SDG-integrated policy reviews
18	Weak analysis of health facility readiness and resource availability	O'Neill et al. (2013); DoH Facility Audit
19	Neglect of inter-district inequalities in service coverage and funding	District Health Barometer; DoH reports
20	Few longitudinal studies assessing UHC impact over time in African countries	Spaan et al. (2015); Kruk (2018)
Theory + Context + Level of Analysis Gaps		
21	Lack of context-sensitive implementation theories combining actor-level and institutional perspectives	Michel et al. (2022); Adapted CIT
22	Few studies propose or test locally tailored models for NHI implementation	Christmals et al. (2020)
23	Dominance of top-down policy models with limited engagement of community actors	Pressman & Wildavsky; O'Toole
24	Limited empirical testing of theories like CIT, ToC, and Realist Evaluation in African settings	Literature review findings
25	Over-dependence on Western frameworks without validating relevance in LMICs	WHO (2010); Brearley et al.
26	Lack of integration between health system building blocks and implementation science	WHO Health Systems Framework
27	Poor articulation of how power dynamics influence implementation outcomes	Bressers; Top-down critiques
28	Little theorization of leadership and governance roles in UHC reforms	District Health Management Team reviews
29	Weak conceptual frameworks linking UHC with health outcomes, quality, and equity	Global UHC Monitoring Framework
30	Absence of meta-frameworks that combine policy design, service delivery, and behavior change	Ranchod et al.; WHO UHC Compendium

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The issue and context gap shows an analytical blind spot in the literature, including the neglect of subnational dynamics, facility-level variation, and inter-district inequalities. Most literature reviewed occurred at the policy level, with limited focus on operational bottlenecks at provincial/regional, municipal, local or clinic levels. The overemphasis on top-down policy analysis leaves little room for understanding the 'last mile' of service delivery. This is especially problematic in African contexts where governance capacity, infrastructure, and resources vary drastically across regions. Ignoring these differences obscures the structural roots of inequity and distorts policy feedback loops. There is also an absence of gender and youth disaggregated data, which hinders intersectional insights.

Data disaggregation remains a technical and political challenge. In many countries, health management information systems are either outdated or fragmented, making it difficult to track and analyse subnational trends. This leads to skewed evaluations and, ultimately, poorly informed reforms. UHC research must adopt a multi-scalar approach that acknowledges the diversity of health system actors and the heterogeneity of populations. Building capacity for district-level health research and data systems is essential. Moreover, funders should require geographic and demographic disaggregation in all policy analyses. To build a more robust and equitable evidence base, researchers must explore the diversity of implementation experiences within countries. Micro-level, disaggregated, and geographically sensitive studies are no longer optional, they are essential.

Another set of gaps pertains to the levels at which research is conducted. The analysis established that most studies operate at the national level, analysing policies, coverage rates, and financing frameworks from a bird's-eye view. While this is valuable, it obscures the granular, everyday realities of implementation at the district, facility, and frontline levels. How do nurses, clinic managers, or district health officers interpret and deliver NHI mandates? How are budgets allocated and spent at subnational levels? These questions are seldom asked, let alone answered.

Health systems are complex, multi-layered ecosystems. Policies passed at the national level do not automatically translate into equitable outcomes on the ground. Local health governance structures, workforce availability, facility infrastructure, and even the morale of health workers can dramatically shape implementation. Yet studies that examine these layers are limited and often methodologically weak.

Another glaring omission is the lack of gender-disaggregated and intersectional analyses. Women, children, persons with disabilities, and rural populations often face unique barriers to accessing services, be it through discriminatory enrolment practices, poor maternity care, or distant and under-resourced facilities. Despite this, few studies examine how UHC policies affect different groups differently, or how gender intersects with geography, income, and education to deepen exclusion.

Similarly, multi-sectoral linkages are underexplored. While the SDGs recognise that health is interconnected with education, water, sanitation, and nutrition, UHC research rarely integrates these dimensions in a meaningful way. School health interventions, social protection programmes, and nutrition services operate in silos rather than within coordinated UHC frameworks. The implication is clear: research that fails to 'zoom in' misses critical obstacles, and opportunities within the system. Without understanding frontline dynamics, resource allocation, and user experience, we cannot design reforms that are responsive, scalable, or sustainable.

Concerning the theoretical and conceptual gaps, it was established that most studies did not employ robust theories to interpret findings. The popular Contextual Interaction Theory (CIT) is often loosely adapted, and few models are empirically tested. There is also a dearth of work that ties together theory, local context, and actor-level analysis. UHC implementation is a deeply political and contextual process. Yet many studies remain theoretically agnostic, focusing on descriptive case studies rather than explanatory or predictive models. This gap undermines the field's ability to generate transferable knowledge or inform complex adaptive policymaking. Theories like CIT, Top-down/Bottom-up governance, or Realist Evaluation are often name-checked but rarely integrated in a meaningful way.

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There is therefore the need for a new generation of theory-led empirical research that does more than name-drop frameworks. Theory should not only explain outcomes but shape the questions we ask, the data we collect, and the conclusions we draw. Combining theory with contextual specificity can elevate African research from descriptive to diagnostic and from reactive to strategic. The theoretical underdevelopment of UHC research in Africa is a strategic weakness. Scholars must resist the temptation of generic analysis and invest in rigorous, theory-informed work that accounts for power, incentives, agency, and context. Only then can research truly guide reform and innovation.

Conclusion

This study set out to explore the evolving discourse around National Health Insurance (NHI) and Universal Health Coverage (UHC) in Africa through the dual lenses of bibliometric and systematic review methodologies. It has mapped the research trajectory of the field across a 13-year timeline. The bibliometric findings revealed a field that is growing but uneven. South Africa, Ghana, and Nigeria dominate the scholarly landscape, reflecting both their historical engagement with health financing reforms and the strength of their research infrastructures. However, the relative absence of voices from francophone, lusophone, and fragile African states raises concerns about the inclusivity and comprehensiveness of the research agenda. International collaborations are increasing, but critical questions remain regarding authorship equity, knowledge ownership, and the North-South dynamics that shape research production and visibility.

The systematic review deepened these observations, highlighting three central gaps. First, at the issue and context level, the literature continues to overlook the granular realities of implementation, how people experience and make sense of NHI reforms in their everyday lives. Second, at the level of analysis, there is insufficient attention to district-level dynamics, gender-based impacts, and intersectoral linkages, all of which are crucial for building resilient and inclusive health systems. Third, at the theoretical level, the field remains dominated by borrowed conceptual frameworks, with minimal effort to develop or empirically test models that reflect Africa's political, social, and institutional heterogeneity.

These gaps are not merely academic. They speak to the moral and practical imperative of designing health systems that work, not in theory or on paper, but for real people navigating complex and unequal societies. Moving forward, several priorities are clear. Researchers must commit to methodological pluralism, embedding qualitative, participatory, and longitudinal approaches alongside econometric and statistical tools. Theoretical development must be revitalised, not through abstract modelling alone but through the co-creation of frameworks with policy actors, frontline workers, and communities. Institutions must invest in the next generation of African health policy scholars, especially those from underrepresented regions. Finally, funders and journals must recognise that excellence in health systems research is not merely technical, it is ethical, political, and deeply contextual.

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Journal of Ecohumanism
2025
Volume: 4, No: 4, pp. 2258–2280
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i4.6992

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