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Determinants of Social Health Insurance Uptake in Bayelsa, Nigeria: Understanding Barriers and Facilitators to Achieving Universal Health Coverage

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ABSTRACT

Social health insurance (SHI) had been identified as a key mechanism for advancing universal health coverage (UHC) in Bayelsa, Nigeria. However, significant barriers to SHI uptake persist, limiting access to essential health services and financial protection for vulnerable populations. This study aimed to investigate the determinants of SHI uptake in Bayelsa State, focusing on the barriers and facilitators influencing participation and the achievement of UHC. A cross-sectional survey was conducted among 600 adult residents of Bayelsa State, utilizing a multi-stage sampling technique to gather data on socio-demographic characteristics, awareness, and perceptions of SHI. Structured questionnaires were administered through face-to-face interviews. Quantitative data were analyzed using descriptive statistics, chi-square tests, and regression analysis to identify associations between various determinants and SHI enrolment. The findings revealed that 53% of respondents did not enroll in SHI, with primary barriers including affordability (31%), lack of knowledge about benefits (25%), and awareness of the enrollment process (14%). A significant association was found between access to financial resources and enrolment status ($p < 0.0001$). Moreover, respondents enrolled in formal-sector SHI were more likely to extend coverage to dependents than those enrolled in informal or student insurance schemes. The study highlighted critical barriers to SHI uptake in Bayelsa State, including economic constraints and information deficits. It underscored the necessity for targeted interventions aimed at enhancing public awareness, simplifying the enrolment process, and improving financial accessibility to foster greater participation in SHI, ultimately contributing to the realization of UHC in the region.

INTRODUCTION

Social health insurance (SHI) emerged as a crucial financing arrangement aimed at improving access to healthcare services and enhancing financial protection for individuals and families. In the context of Nigeria, particularly in Bayelsa State, the implementation of SHI was recognized as a pathway to achieving universal health coverage (UHC). The SHI model involved pooling contributions from various stakeholders, including employers, employees, and the government, to fund a defined set of health benefits. Historically, SHI was linked to formal employment, with enrolment processes varying across different contexts. Despite its potential, the uptake of SHI in Bayelsa faced significant challenges, including socio-demographic barriers, economic constraints, and administrative complexities. Prior studies indicated that individual-level factors, such as age, gender, education, and income, significantly influenced individuals' decisions to enroll in SHI schemes. Younger individuals often perceived themselves as healthier and, therefore, displayed less urgency in obtaining coverage. In contrast, those with higher levels of education were generally more aware of the benefits of SHI and better equipped to navigate the enrolment process. Economic factors played a dual role; while higher income facilitated the ability to contribute to premiums, lower-income individuals often faced greater financial barriers to accessing insurance.

Community dynamics also shaped the landscape for SHI uptake. Geographic disparities, social norms, and the performance of local health systems influenced individuals' perceptions of the value and effectiveness of SHI. Many residents expressed concerns regarding the quality of healthcare services provided under SHI, which further complicated their willingness to enroll. The existing literature highlighted that barriers to SHI participation were compounded by a lack of awareness and understanding of the program among the population. Recognizing the fragmented approach to health financing and the need for greater inclusivity, the study aimed to investigate the determinants of SHI uptake in Bayelsa State. By focusing on the barriers and facilitators of SHI enrolment, the research sought to provide valuable insights for policymakers and stakeholders involved in the pursuit of UHC in Nigeria. The findings of this study were anticipated to contribute to the broader discourse on health insurance and provide context-specific recommendations that would enhance access to health coverage for the residents of Bayelsa State.

LITERATURE REVIEW

Social health insurance was a financing arrangement in which contributions were pooled from employers, employees, and, in some contexts, the government to fund a defined set of health benefits. Coverage was

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typically linked to formal employment and organized through dedicated pools with governance structures and preassigned entitlements. SHI rested on core concepts such as risk pooling, prepayment, a defined benefits package, and the distinction between contributory financing and non-contributory subsidies (Kumar, 2014). Enrolment could be mandatory or voluntary, and provider payments were managed through mechanisms like capitation, fee-for-service, or diagnosis-related groups, which shaped access and incentives. Universal health coverage, in contrast, represented a broader system goal in which all people received the health services they needed without suffering financial hardship, encompassing population coverage, service coverage, and financial protection (Hosseinpoor *et al.*, 2011; Uzochukwu *et al.*, 2015). Historically, SHI connected to UHC as a pathway to financial protection and improved access by pooling risks and reducing out-of-pocket expenditures, thereby contributing to the financial protection dimension of UHC. Over time, many countries used SHI as a stepping-stone toward broader UHC, expanding inclusion beyond formal workers to cover informal workers, dependents, and vulnerable groups. SHI created prepayment mechanisms and risk pools that shielded households from catastrophic health expenditures, and through standardized benefit packages and organized provider networks, it aimed to improve service availability and quality. The degree of connection between SHI and UHC varied by country and period; in some contexts, SHI was successfully scaled and integrated into broader UHC strategies, while in others, fragmentation or limited inclusivity hindered progress toward universal coverage.

Social health insurance (SHI) had been framed as a core vehicle for advancing universal health coverage (UHC) by linking eligibility for financial protection with accessible, high-quality health services. The SHI was designed to pool risks and prepay a portion of health care costs, thereby reducing the likelihood that households would face catastrophic out-of-pocket expenditures and burdensome financial barriers at the point of care (Galárraga *et al.*, 2010). Within that framing, eligibility criteria for enrolment served as the pivotal gateway through which populations could access protected services, subsidies, and the accompanying provider networks. Historically, eligibility criteria tended to reflect a progression from targeted, contributory models toward broader, more inclusive arrangements aligned with UHC principles of leaving no one behind. Early schemes commonly prioritized formal-sector workers, with automatic or straightforward enrolment through payroll deductions and employer sponsorship. Dependents, such as spouses and children, typically attained eligibility by association with the insured worker, creating a cascade effect that extended protection beyond the primary enrollee. Government employees or public-sector workers often enjoyed explicit eligibility within a contributory framework, supported by subsidies in some contexts to maintain affordability. Beyond formal employment, many SHI programs incorporated

non-contributory arrangements to reach vulnerable groups, including the unemployed, the elderly, persons with disabilities, and the poor. Means-testing, income-based subsidies, or universal-but-targeted enrolment pledges were used at times to balance equity with fiscal sustainability. Administrative simplicity and transparent rules were emphasized as critical enablers: clear documentation requirements, streamlined enrolment processes, and user-friendly verification procedures reduced barriers to entry and improved retention. As SHI systems evolved, eligibility criteria were frequently revised to broaden coverage in pursuit of UHC objectives. Policy designers integrated informal-sector workers, peri-urban residents, and other underserved populations through subsidized schemes, exemptions, or hybrid financing models that mixed contributory and tax-funded elements. The trend toward universality often involved moving from narrowly defined eligibility toward near-universal enrolment, accompanied by efforts to simplify renewals, reduce administrative burdens, and harmonize eligibility across programs to minimize fragmentation. Policymakers experimented with tiered contribution structures, income-adjusted premiums, and differential subsidies to maintain solvency while expanding protection. Enrolment eligibility was not solely a matter of law; it depended crucially on the functionality of enrolment channels, the reliability of subsidy flows, and the perceived value of the benefits package. In contexts where governance was transparent and accountable, subsidies were well-targeted, and benefit packages were deemed adequate, uptake and retention tended to be higher, reinforcing the linkage between inclusive eligibility and progress toward UHC. Conversely, where eligibility expansion outpaced administrative capacity or where subsidies were opaque or inadequately funded, enrolment lagged, and the aspirational goals of UHC faced setbacks. In summary, the historical arc of SHI eligibility criteria reflected a shift from formal-sector, contributory enrolment toward broader inclusion designed to achieve universal access and financial protection. The literature consistently indicated that effective translation of eligibility into actual enrolment required coherent policy design, accessible enrolment processes, credible subsidies, and trustworthy governance. When these elements aligned, SHI contributed meaningfully to UHC by reducing financial barriers, expanding service coverage, and strengthening risk pooling; when misaligned, fragmentation and inequities emerged, undermining both enrolment and outcomes (Treaty Commission, 2024).

Social health insurance (SHI) was shaped by a constellation of determinants that operated across multiple layers of society, beginning with individual-level factors before expanding to household and community contexts (Chukwuezie *et al.*, 2025). At the individual level, a person's socio-demographic characteristics, such as age, gender, education, and income, significantly influenced enrolment decisions (Muchie *et al.*, 2025; Wambete *et al.*, 2024). Younger individuals often perceived themselves as

healthier and perceived less immediate value in paying for insurance, while higher levels of education typically enhanced awareness of SHI, understanding of its benefits, and the ability to navigate enrolment procedures. Income played a dual role: higher personal earnings increased willingness and ability to contribute, whereas lower-income individuals faced tighter budget constraints and greater sensitivity to premiums and opportunity costs (Adekunle & Vincent, 2025; Hone *et al.*, 2024). Employment status and formal sector affiliation emerged as critical determinants; those with formal employment generally possessed automatic or easier access to SHI schemes through payroll deductions, whereas informal workers confronted barriers related to irregular income, lack of employer sponsorship, and documentation requirements. Perceived health status and past experiences with healthcare services also matters; individuals who frequently used health services or who anticipated higher future medical needs often valued SHI more highly, while those with previously satisfactory out-of-pocket experiences might deprioritize enrolment. Cultural beliefs and trust in institutions influenced decisions as well; individuals who trusted government programs and providers tended to enroll more readily, whereas skepticism regarding governance, corruption, or perceived inefficiencies reduced uptake. Household-level determinants interplayed with individual factors in meaningful ways, generating a broader understanding of SHI uptake. Household income and financial resilience determined whether families could allocate resources to premiums, copayments, and associated costs without compromising essential needs. Within households, decision-making dynamics—such as which family member-controlled finances or who bore responsibility for health expenditures—shaped enrolment outcomes, with collective bargaining processes sometimes leading to prioritization of SHI for specific household members or a broader family enrolment (Ntabirubal *et al.*, 2024). Educational attainment within the household influenced shared knowledge about SHI, collective risk perceptions, and the perceived value of coverage, while kinship and trust networks within the household facilitated information exchange and navigation of enrolment channels. Perceived vulnerability within the family, including the presence of elderly members, chronically ill individuals, or dependents, prompted more proactive enrolment as a strategy to mitigate potential financial shocks from illness. Additionally, households' exposure to financial shocks, debt, or economic downturns affected decisions; during periods of uncertainty, households sometimes enrolled preemptively or renewed coverage to safeguard against future medical expenses (Adekunle & Vincent, 2025). Community-level factors further shaped SHI uptake by altering the surrounding environment in which individuals and households operated. Community norms and social capital influenced enrolment through word-of-mouth, collective efficacy, and reputational cues about the benefits and reliability of SHI schemes.

Geographic factors, including urban-rural disparities and distance to enrolment offices or insured facilities, affected accessibility and convenience; communities with better physical access, transportation, and proximity to enrolment centres tended to exhibit higher uptake. Local health system performance, such as perceived quality of care, facility availability, and reliability of services under SHI, influenced enrolment decisions; communities with well-functioning networks and consistent service delivery reinforced trust and sustained participation, whereas experiences of stock-outs, long wait times, or poor-quality discouraged enrolment and renewal. Public awareness campaigns, community engagement initiatives, and local leadership also played pivotal roles by disseminating information, addressing misconceptions, and mobilizing residents to enroll. Finally, macro-level policy environments and intergovernmental coordination affected community contexts by shaping subsidy schemes, eligibility criteria, and administrative simplification efforts, which, in turn, influenced community readiness and enthusiasm for SHI uptake. Again, social health insurance (SHI) was shaped by an intricate set of determinants spanning health system architecture, financing arrangements, political economy, policy design, and institutional capacity. Within the health system, the structure and performance of health services significantly influenced SHI uptake, sustainability, and effectiveness. Health system strengthening—characterized by governance, workforce capacity, service delivery reliability, and infrastructure adequacy—determined the credibility and attractiveness of SHI to potential enrollees (Chakraborty, 2009; Kieny *et al.*, 2017). Where primary care was well integrated with SHI financing, referral systems functioned more efficiently, enabling smoother access to a defined benefits package; conversely, weak health systems undermined perceived value, leading to lower enrolment or underutilization despite formal eligibility. The alignment between SHI and health system priorities moderated how effectively pooled funds translated into accessible, high-quality care. In some contexts, SHI served as a mechanism to strengthen primary health care and promote efficiency through standardized protocols and performance monitoring; in others, fragmentation between SHI and service delivery networks produced gaps in access and uneven quality of care. Financing determinants repeatedly influenced SHI viability through revenue sufficiency, risk pooling, and financial protection. The sustainability of SHI depended on stable revenue sources, including payroll contributions, government subsidies, and voluntary premiums, which had to be calibrated to household ability to pay and macroeconomic conditions. Adequate risk pooling required broad-based enrolment across formal and informal sectors, diverse age groups, and geographic regions; when risk pools remained narrow or actuarial risk was not adequately shared, premiums could drift upward, subsidies could be insufficient, and cross-subsidization weakened. Financial protection depended

on the generosity of benefit packages, pricing of services, and the timing of reimbursements to providers; delays in payments or restrictive benefit sets eroded trust and reduced enrolment continuity. Subsidy design, means-testing, and waivers for the poor and vulnerable emerged as critical financing determinants, influencing equity and access; where subsidies were well-targeted and transparently managed, SHI advanced toward universal coverage objectives, whereas opaque subsidy mechanisms undermined legitimacy and uptake. Macro-financial policies, exchange rate risks, and fiscal space for health influenced long-term SHI trajectories, with periods of fiscal consolidation or competing budget demands constraining expansion and reform (Eunice *et al.*, 2015; Gruen & Howarth, 2009; Uzochukwu *et al.*, 2015). Political determinants explained much of the variation in SHI implementation and progression toward universal coverage. The political economy of SHI reflected competing stakeholder interests, including governments, employers, employees, professional associations, and external lenders; coalitions and lobbying shaped the design, timing, and scale of reforms. Political will and leadership were pivotal; sustained commitment to health financing reform created windows of opportunity for expanding coverage, clarifying eligibility, and integrating SHI into broader UHC agendas. Policymakers navigated trade-offs among equity, efficiency, and fiscal sustainability, often balancing universal aspirations with domestic political feasibility. The level of political decentralization influenced SHI architecture, as federal or centralized control dictated subsidy flows, regulatory standards, and the pace of expansion to subnational jurisdictions. Corruption risks and governance quality also mattered; transparent governance, competitive procurement, and robust oversight mechanisms increased stakeholder trust and enrolment, while governance failures and perceived elite capture reduced legitimacy and participation (Laeven *et al.*, 2004; Petrović, 2022). Policy determinants encompassed the design choices embedded in SHI, including eligibility criteria, contribution rules, benefit packages, and provider payment methods. Early policy models frequently started with contributory, formal-sector schemes and gradually experimented with non-contributory subsidies or mixed financing to reach broader populations in line with UHC objectives. The breadth and clarity of eligibility rules affected enrolment decisions; formal-sector automatic enrolment was common, but successful reforms tended to harmonize eligibility across groups, reduce administrative burdens, and simplify renewal processes. Benefit package design mattered for perceived value and utilization patterns; comprehensive or frequently updated packages with essential preventive, curative, and rehabilitative services increased perceived return on enrolment. Provider payment mechanisms—such as capitation, diagnosis-related groups, or blended payment schemes—shaped provider behaviour, resource allocation, and access. Administrative simplification, digital enrolment, and

streamlined documentation lowered barriers to entry and improved continuity of coverage. Policy coherence and alignment with broader health financing reforms, including tax-funded strategies and sister social protection programs, mediated SHI's contribution to UHC and prevented policy fragmentation (Raviv, 2024). Institutional determinants encompassed governance arrangements, capacity, and organizational culture that either facilitated or impeded SHI operations. The presence of capable institutions—competent boards, defined mandates, skilled administrative staff, and robust information systems—proved essential for effective risk pooling, premium collection, claims processing, and fraud prevention (Obermann *et al.*, 2006; Ogundeji *et al.*, 2019). Inter-institutional coordination among ministries of health, finance, labor, and social security agencies determined the smooth functioning of SHI ecosystems; misalignment or weak coordination produced delayed reimbursements, inconsistent policy signals, and enrolment bottlenecks. Legal and regulatory frameworks established rights, duties, and accountability mechanisms; credible legal bases protected beneficiary entitlements and provider expectations, reinforcing trust in the system. Stakeholder engagement and participatory governance structures, including oversight committees and community representation, enhanced legitimacy and accountability, while top-down, opaque decision-making processes tended to erode public confidence and reduce uptake. Finally, data systems and monitoring and evaluation capabilities allowed continuous learning; reliable data on enrolment, utilization, and financial performance supported evidence-based refinements, whereas data gaps and limited analytic capacity constrained adaptive policymaking. Across these dimensions, interactions among health system capacity, financing arrangements, political dynamics, policy choices, and institutional capabilities determined SHI outcomes. In settings where health systems were stronger, financing mechanisms were sustainable and inclusive, political leadership was committed to equity, policy design was coherent, and institutions functioned with transparency, SHI progressed toward broader coverage, improved financial protection, and more efficient service delivery. In contexts where any of these determinants faltered—weak governance, narrow risk pools, misaligned incentives, or fragmented policy—that progress stagnated, enrolment waned, and financial protection eroded. Again, social health insurance (SHI) was shaped by a constellation of barriers that encompassed geographic, urban-rural, economic, and financial dimensions, collectively influencing uptake, equity, and sustainability (Asabere *et al.*, 2024; Raichle, 2023). In early chapters of many policy narratives, geographic barriers constrained physical access to enrolment centres, insured facilities, and key services; remote and dispersed communities faced longer travel times, higher transport costs, and information deficits, which diminished awareness and willingness to enroll. Urban areas, while generally

offering greater proximity to enrolment offices and networks, exhibited their own burden of congestion, bureaucratic complexity, and uneven service distribution that sometimes-limited universal reach, underscoring that urban advantage was not universal. Riverine, upland, and coastal geographies introduced distinctive logistical hurdles (Yuan *et al.*, 2024; Zhou & Ping, 2024). Riverine regions depended on variable boat transport and seasonal water levels, which could disrupt enrolment activities and service delivery; upland terrains posed challenging travel conditions and supply chain fragilities that hindered timely reimbursements and facility access; coastal zones confronted climate-related vulnerabilities that threatened facility operations, workforce stability, and financing flows, thereby shaping enrolment decisions and continuity of coverage. Economic and financial barriers were intrinsically tied to these spatial realities. When distances to enrolment points amplified travel costs and time away from work, households faced higher effective premiums and indirect expenses, reducing net participation despite subsidies. In economically diverse settings, poorer households in geographically isolated areas experienced pronounced affordability constraints, whereas wealthier urban residents often encountered perceived value gaps, administrative hurdles, or opportunity costs that tempered enthusiasm for SHI enrolment. Financing arrangements interacted with geographic and spatial facets to influence the viability and fairness of SHI. Stable revenue streams, accurate risk pooling, and predictable subsidies depended on macroeconomic stability and fiscal space; shocks or proclivity could erode contributions, delay reimbursements, and undermine trust in the system. Substantial cross-subsidization hinged on widening the contribution base across formal, informal, and rural populations; where informal workers were inadequately captured or premium collection was irregular, risk pools narrowed and equity objectives were compromised. The design of subsidies, means-testing, and waivers for the poor and vulnerable emerged as critical instruments for geographic equity; however, poorly targeted or opaque subsidy mechanisms tended to exacerbate disparities between neighboring communities, reinforcing perceptions of geography-driven inequity. Health system and infrastructure factors amplified geographic and economic barriers. Inadequate transport networks, stock-outs, and long wait times at insured facilities diminished perceived value and discouraged enrolment and renewal, particularly among rural, riverine, and peri-urban groups with sparser service distribution. The digital divide limited the reach of online enrolment tools and e-services, advantaging populations with reliable internet access while leaving others dependent on in-person processes that were hampered by distance and travel costs. Administrative complexity, documentation requirements, and jurisdictional fragmentation could magnify barriers, creating opaque enrolment pathways that disproportionately affected residents in hard-to-reach locales (Ewulum *et al.*, 2022; Shewamene *et al.*, 2021).

Environmental and demographic dynamics added further nuance. Riverine and coastal communities faced recurring exposure to extreme weather events and seasonal livelihood disruptions that affected health needs and financial readiness for premium payments, contributing to cyclical enrolment fluctuations. Urban-rural gradients reflected broader socio-economic inequalities, with rural residents often contending with informational gaps and limited health service availability, while urban poor contended with informal employment structures and fluctuating incomes that constrained consistent participation. Scholarly analyses across historical and contemporary periods highlighted that addressing SHI barriers required integrated, multi-level strategies. Initiatives such as mobile enrolment units, community-based enrolment agents, and targeted subsidies to reduce travel and information costs were identified as practical mitigations for geographic and financial obstacles. Flexible premium structures, expanded subsidy coverage for informal workers and rural residents, and investments in reliable insured service networks were emphasized as essential to reducing disincentives to enroll. Complementary investments in transport and health facility networks, coupled with digital platforms for enrolment, claims processing, and data management, were recognized as pivotal interventions to alleviate spatial and economic impediments, thereby advancing more inclusive and sustainable SHI coverage.

Social health insurance (SHI) had been propelled by a constellation of facilitators and enabling conditions that supported uptake, sustainability, and broader financing coverage. In early policy moments, institutional readiness stood out as a key enabler: credible governance arrangements, clear legal mandates, and capable administrative systems provided the scaffolding needed to design, implement, and steward pooled funds, enrolment, and provider payments. When ministries of health, finance, and social security aligned their aims, SHI ecosystems benefited from coherent policy signals, streamlined procedures, and predictable funding streams, which in turn-built trust, participation, and continuity. Financial and economic enablers repeatedly underscored the importance of stable and predictable revenue streams. Regular payroll contributions, government subsidies, and well-calibrated premium schedules supported risk pooling and financial protection, while macroeconomic stability reduced enrolment volatility. Cross-subsidization schemes redistributed resources across formal and informal sectors, rural and urban areas, and vulnerable populations, proving essential for equity in pursuit of universal coverage aspirations. Subsidy design targeted the poor, unemployed, elderly, and chronically ill, enhancing affordability and acceptance when means-testing or income-based criteria were applied transparently and administered efficiently. Transparent pricing, timely reimbursements, and streamlined claims processes reinforced provider participation and patient confidence, sustaining SHI as a viable component of broader UHC

objectives. Policy design and implementation formed another cluster of enabling conditions. Clear eligibility criteria, simple enrolment procedures, and user-friendly information systems reduced administrative barriers and improved enrolment and renewal rates. Benefit packages that combined essential preventive, curative, and rehabilitative services with sensible co-pay arrangements heightened perceived value and utilization. Innovative financing arrangements, such as blended payment methods (e.g., capitation with case-based adjustments) and performance-based incentives, helped align provider behaviour with population health goals and system efficiency. Alignment with other social protection programs and tax-funded financing reforms created synergies that supported universal access and reduced fragmentation. Consistent policy messaging and strategic sequencing—expanding coverage gradually while maintaining financial sustainability—facilitated stakeholder buy-in and public confidence. Institutional and governance determinants functioned as critical enablers. Independent and accountable governance bodies, transparent procurement practices, robust anti-corruption measures, and routine audits contributed to credibility and trust, translating into higher enrolment willingness. Multi-stakeholder engagement, including dialogues with employers, labor unions, civil society, and community leaders, improved legitimacy and social acceptance of SHI schemes. Data systems, monitoring and evaluation frameworks, and evidence-informed decision-making processes allowed ongoing refinements, performance tracking, and timely policy adjustments in response to enrolment patterns and financial performance. International cooperation, technical assistance, and peer-learning networks often served as accelerants, introducing best practices, standardization of benefits, and harmonization across subnational jurisdictions. Health system integration and service delivery context stood as meaningful enablers. When SHI networks integrated with primary health care, referral systems, and facility networks, access to care improved and continuity of coverage strengthened. Quality improvement initiatives, supply chain reliability, and workforce capacity development reinforced beneficiaries' confidence in SHI and encouraged sustained participation. The presence of effective information and communications technology (ICT) tools—digital enrolment platforms, mobile payments, and remote monitoring—reduced transaction costs, enhanced transparency, and extended reach to underserved populations. Finally, the broader enabling environment—political commitment to UHC, macro-financial stability, and absence of abrupt policy reversals—created a conducive climate for SHI advancement and long-term viability. Across contexts, the relative strength of facilitators and enablers varied in step with local conditions, political economy, and health system maturity. In settings with transparent governance, stable financing, aligned policy objectives, and robust institutional capacity, SHI advanced toward broader coverage,

improved financial protection, and strengthened service delivery. Conversely, weak institutional capacity, opaque subsidies, fragmented financing, and inconsistent policy signals impeded uptake and undermined sustainability. The literature consistently showed that facilitators and enablers operated synergistically; the presence of one often reinforced other, producing compounding effects that accelerated progress toward universal coverage.

Theoretical and Conceptual Framework

Social health insurance (SHI) had historically been examined through a suite of health economics theories, conceptual frameworks, and contextual understandings that framed its design, implementation, and potential to advance universal health coverage (UHC) in Bayelsa State and across Nigeria. At the theoretical core, the analysis began with the notion that health care represented a special form of consumption with imperfect information and uncertainty about future health needs, which justified risk pooling and prepayment mechanisms. Household utility maximization and the idea of moral hazard suggested that insurance could alter behaviour by smoothing consumption in the face of health shocks, while the presence of provider payment incentives and cost-sharing influenced demand, utilization, and efficiency. Adverse selection and asymmetric information were repeatedly emphasized in the literature as potential threats to actuarial balance, prompting designs that encouraged broad participation, standardized benefits, and credible enrolment processes. In this tradition, SHI was understood as a financing arrangement intended to pool risk, finance a defined benefits package, and reduce catastrophic out-of-pocket expenditures, thereby contributing to financial protection and access under UHC.

Theoretical frameworks provided further guidance for interpreting uptake determinants and system performance. Andersen's Behavioural Model of Health Services Use offered insight into how predisposing factors (such as age, education, and beliefs), enabling resources (including income, insurance, and access to services), and perceived need influenced enrolment decisions and continued participation. The Health Belief Model illuminated how perceived susceptibility, perceived severity, perceived benefits, and perceived barriers shaped individuals' willingness to engage with SHI. In the Nigerian context, and specifically Bayelsa, these concepts were often integrated with broader frameworks of health financing, social protection, and governance to understand why certain populations enrolled while others remained uninsured (Berger *et al.*, 2023; Krzyż *et al.*, 2023). Push–Pull factors in health financing highlighted how macro-level subsidies, premium structures, and incentives for providers could either attract or deter enrolment, depending on perceived value, quality of care, and trust in the system (Mackey & Liang, 2013; Yarhere & Adeboye, 2023). Bayelsa State and the Nigerian health system—provided critical empirical grounding

for interpreting SHI dynamics. Bayelsa, located in the Niger Delta, exhibited distinctive governance, economic, and health system characteristics, including reliance on federal policies, local administrative capacity, and exposure to environmental and sociopolitical risks that shaped health financing decisions. Nigeria's broader health financing landscape included the National Health Insurance Authority (NHIA) at the federal level, state-level SHI experiments, and a substantial informal sector that posed challenges for voluntary enrolment and premium collection. Demographic and economic profiles—marked by variables such as oil-dependent revenue streams, urban-rural stratification, and varying education and employment patterns—affected willingness to pay, trust in public programs, and access to insured facilities. Policy environments, including federal statutes, state policies, and intergovernmental coordination, influenced the sequencing and coherence of SHI reforms, subsidy design, and the integration of SHI with tax-funded or external donor-supported initiatives. The literature repeatedly noted that Bayelsa's experience occurred within a broader Nigerian aspiration toward UHC, tempered by governance capacity, fiscal space, and the pace of health system strengthening. In terms of health system configuration, SHI in Bayelsa and Nigeria was discussed in relation to core health system functions: service delivery, workforce, information systems, financing, and governance. The alignment between SHI financing and service delivery determined whether pooled funds translated into accessible, high-quality care for insured populations. Provider payment mechanisms—ranging from capitation to global budgets or fee-for-service blended models—were analyzed for their effects on provider behaviour, efficiency, and service availability. Administrative capacity, enrolment procedures, and public trust in governance influenced uptake and retention, while the quality and reliability of insured services affected perceived value and continued participation. Health outcomes and financial protection were linked to the extent to which SHI contributed to risk pooling that supported a broad benefit package and mitigated catastrophic health expenditures. Empirically, the literature highlighted that Bayelsa's SHI experiences intersected with Nigeria's policy trajectories, including federal- and state-level reforms aimed at expanding coverage, subsidizing vulnerable populations, and streamlining enrolment. Contextual factors such as population health needs, disease burden, and geographic characteristics (including urban-rural distribution and access to insured facilities) shaped enrolment patterns and the perceived value of SHI. The role of external actors—development partners, international organizations, and non-governmental organizations—was frequently noted as influential in providing technical assistance, funding, and governance innovations, though sustainability depended on domestic capacity and policy coherence. In a nutshell, the health economics perspective on SHI in Bayelsa and Nigeria integrated theoretical insights with

context-specific features to illuminate determinants of uptake, design trade-offs, and pathways toward universal coverage through prudent financing, governance, and service delivery improvements.

Statement of the Problem

The statement of the problem highlighted that social health insurance (SHI) uptake in Bayelsa, Nigeria, faced significant challenges that hindered the achievement of universal health coverage (UHC). Despite the conceptual framework linking SHI to enhanced financial protection and improved access to healthcare services, actual enrolment rates remained suboptimal. Key barriers, including individual socio-demographic factors, economic constraints, and administrative complexities, contributed to low participation levels. Additionally, the lack of awareness and understanding of the SHI program further impeded enrolment. Community-level dynamics, such as geographic disparities and social norms, also influenced individuals' decisions to engage with SHI. The health system's performance, characterized by inadequate service delivery and governance issues, exacerbated these challenges, creating a fragmented approach to health financing. The research underscored the necessity of identifying and addressing these multifaceted barriers to facilitate broader SHI uptake and ultimately move toward UHC in Bayelsa and similar contexts.

Justification of the Study

The gaps in the literature regarding social health insurance (SHI) uptake in Bayelsa State highlighted a significant underrepresentation of studies focused specifically on the region. Prior research often generalized findings across Nigeria or concentrated on more populous states, neglecting the unique socio-economic, cultural, and geographic contexts of Bayelsa. This oversight limited the understanding of the specific barriers and facilitators influencing SHI enrolment in the state, which had distinct challenges such as a high prevalence of informal employment, geographic isolation, and a unique health system landscape shaped by its oil-dependent economy. Furthermore, existing studies frequently failed to adequately address the indigenous beliefs and cultural factors that affect health-seeking behaviour in Bayelsa. The lack of disaggregated data on enrolment patterns across different local government areas (LGAs) and demographic groups further compounded the issue, making it difficult to tailor interventions effectively. By embarking on this study, researchers aimed to fill these critical gaps by providing a focused analysis of SHI uptake in Bayelsa, thereby offering insights that could inform policy and practice. The justification for this study stemmed from the pressing need to understand how local dynamics influence SHI enrolment and to identify context-specific strategies that could enhance access to health coverage. Given the ongoing efforts toward achieving universal health coverage (UHC) in Nigeria, this research sought to contribute to the broader

discourse by presenting evidence that reflects the realities faced by Bayelsa's residents. Additionally, the study aimed to engage local stakeholders, thereby fostering a sense of ownership and collaboration in addressing health financing challenges. Ultimately, the findings were intended to support the development of targeted policies and programs that could improve health outcomes and financial protection for the people of Bayelsa State.

General Objective

The general objective of the study was to investigate the determinants of social health insurance (SHI) uptake in Bayelsa State, Nigeria, with a particular focus on understanding the barriers and facilitators that influenced the achievement of universal health coverage (UHC).

Specific Objectives

a. To assess the individual-level factors that affected the enrolment decisions of residents in Bayelsa State, including socio-demographic characteristics, awareness, and perceived value of SHI.

b. To examine the household and community-level determinants that influenced SHI uptake, including household income, decision-making dynamics, social norms, and access to enrolment centres.

c. To analyze the health system and financing determinants that shaped the effectiveness of SHI schemes in Bayelsa, focusing on eligibility criteria, benefit package adequacy, provider payment mechanisms, and administrative processes.

d. To identify the economic and financial barriers that hindered enrolment in SHI, particularly the affordability of premiums and indirect costs related to accessing health care services.

e. To evaluate the political, policy, and institutional factors that impacted SHI implementation and uptake in Bayelsa State, including governance quality, stakeholder interests, and policy coherence.

f. To explore the facilitators and enablers that supported SHI uptake, highlighting effective subsidy designs, community engagement initiatives, and the role of digital tools in improving access to enrolment processes.

Research Questions

a. What socio-demographic factors (such as age, gender, education, and income) influence individuals' decisions to enrolling Social Health Insurance programs in Bayelsa State?

b. How do household dynamics and financial literacy affect the willingness of families to participate in Social Health Insurance schemes?

c. What are the perceived barriers and facilitators to accessing Social Health Insurance enrolment, particularly concerning geographic and economic factors in both urban and rural areas of Bayelsa?

d. How do trust in government institutions and perceived quality of healthcare services under SHI impact enrolment rates among potential beneficiaries in Bayelsa?

e. What role do community engagement and awareness-raising initiatives play in improving Social Health Insurance uptake and retention among different population segments in Bayelsa State?

Scope and Limitation of the Study

Scope of the Study

Geographic Focus

The study specifically focused on Bayelsa State, Nigeria, allowing for an in-depth exploration of social health insurance (SHI) uptake within a unique socio-economic and cultural context.

Target Population

The research targeted diverse demographic groups, including formal and informal sector workers, unemployed individuals, and vulnerable populations, thereby capturing a comprehensive view of SHI enrolment.

Determinants of SHI Uptake

The study examined various determinants influencing SHI uptake, including individual-level factors (age, gender, education), household dynamics (income, decision-making), community contexts (social norms, access to services), and broader health system factors (governance, policy design).

Qualitative and Quantitative Methods

A mixed-methods approach was employed, integrating quantitative surveys and qualitative interviews to provide a richer understanding of the barriers and facilitators to SHI enrolment.

Temporal Scope

The study focused on recent developments and trends in SHI uptake and governance, providing insights into contemporary challenges and opportunities related to achieving universal health coverage (UHC) in Nigeria.

Limitations of the Study

Sample Size Constraints

The study's sample size might have limited the generalizability of findings across the entire population of Bayelsa State, as not all demographic groups might have been adequately represented.

Response Bias

Participants might have provided socially desirable responses regarding their awareness and attitudes toward SHI, potentially skewing the data and impacting the authenticity of the findings.

Cross-Sectional Design

The cross-sectional nature of the study limited the ability to establish causal relationships between determinants and SHI enrolment, confining analysis to associations rather than causation.

Data Collection Challenges

Difficulties in accessing certain communities, particularly

in remote or riverine areas, might have hindered comprehensive data collection and resulted in gaps in the representation of certain populations.

Temporal Relevance

The rapidly changing health policy landscape in Nigeria might have rendered some findings less relevant over time, particularly as new reforms and initiatives were introduced.

Limited Longitudinal Data

The study did not utilize longitudinal data, which could have provided insights into changes in SHI enrolment over time and the long-term effects of various determinants.

MATERIALS AND METHODS

Study Design

The study was designed to investigate the determinants of Social Health Insurance (SHI) uptake in Bayelsa, Nigeria, focusing on the barriers and facilitators that impacted the achievement of Universal Health Coverage (UHC). The research employed a cross-sectional survey methodology to gather quantitative data from a representative sample of the population within the region. The study area was identified as Bayelsa State, which was characterized by its unique socio-economic and health system context. The population targeted for the study included adult residents, specifically those aged 18 years and above, who were either directly involved in decision-making about health insurance or were potential beneficiaries of SHI. To determine the appropriate sample size, the researchers employed a formula for cross-sectional studies, taking into consideration the expected prevalence of SHI awareness and enrolment within the population. A total of 600 respondents were selected to ensure statistical significance and to allow for subgroup analyses. A multi-stage sampling technique was utilized to achieve a representative sample. Initially, local government areas (LGAs) within Bayelsa were stratified based on urban and rural classifications. Subsequently, specific communities were randomly selected within each stratum, and households were chosen using systematic sampling methods. Within each selected household, one eligible respondent was randomly chosen to participate in the study.

Study Area

Bayelsa State is located in the southern part of Nigeria, in the Niger-Delta region. It is bordered by Rivers State to the West and Delta State to the East with a long span of Atlantic Ocean at the south. The capital city is Yenagoa. Bayelsa has a population of about 2,537,400 with a landscape area of 9,391 km² (NPC, 2022). Demographic data for Bayelsa State indicates that most of the population belongs to the Ijaw ethnic group, which is the dominant ethnic group in the state. Other minority ethnic groups include the Ogbia, Nembe, and Epic-Attisa. The main languages spoken in Bayelsa State are Ijaw, Epic-

Attisa, Isoko, Urhobo and English. Bayelsa State has a predominantly Christian population, with Christianity being the major religion practiced in the state. However, there are also adherents of other religions, including traditional Africans religions and Islam. The economy of Bayelsa State is predominantly petroleum resources, as the state is in the oil-rich Niger Delta region. Bayelsa has one of the largest crude oil and natural gas deposits in Nigeria, with the Oloibiri Oilfield being the site of the country's first oil discovery. Other mineral raw materials found in the state include salt, agro raw materials include cassava, plantain, rice, and fish.

Study Population

The study population comprised individuals residing in Bayelsa State, Nigeria, who were potential or actual beneficiaries of the Social Health Insurance (SHI) program. Participants were selected based on specific criteria, including their awareness of SHI, enrolment status, and socio-demographic characteristics. The sample included a diverse group of respondents, reflecting variations in age, gender, education, and employment status, which allowed for a comprehensive understanding of the factors influencing SHI uptake. The study aimed to capture insights from both enrolled individuals and those who were not enrolled, providing a holistic view of the barriers and facilitators affecting participation in the SHI program. By including a mix of urban and rural residents, the study sought to address geographic disparities and understand how community contexts played a role in shaping perceptions and experiences related to health insurance. The sample size was determined based on statistical considerations to ensure adequate power for analysis, and a combination of stratified and random sampling techniques was employed to achieve a representative cohort. Data collection involved face-to-face interviews, which allowed for deeper engagement and clarification of responses. This approach facilitated the gathering of rich qualitative and quantitative data, enhancing the overall robustness of the findings.

Sample Size Determination

To calculate the sample size for the study on determinants of social health insurance uptake in Bayelsa State, we used a formula suitable for unknown population sizes. Given that the population size was unknown and infinite, we applied Cochran's formula for sample size estimation. The formula was as follows:

$$n_o = Z^2 \times p(1-p) / E^2$$

Where:

n_o = required sample size

Z = Z-value (the number of standard deviations from the mean for a given confidence level)

p = estimated proportion

E = margin of error

Given:

$p = 0.5$ (5%)

$Z = 1.96$ (confidence interval of 95%)

$E = 0.04$ (margin of error of 4%)

Calculation:

Using the assumed margin of error of 0.04, we can calculate the sample size:

Substitute the values into the formula:

$$n_o = ((1.96)^2 \times 0.5 \times (1-0.5)) / (0.04)^2$$

Calculate:

$$Z^2 = (1.96)^2 \approx 3.8416$$

$$(1-p) = 1-0.5 \approx 0.5$$

$$p(1-p) = 0.5 \times 0.5 \approx 0.25$$

$$E^2 = (0.04)^2 = 0.0016$$

$$n_o = (3.8416 \times 0.25) / 0.0016$$

$$= 0.9604 / 0.0016$$

$$= 600.25 \approx 600$$

Thus, the final sample size calculated for the study was 600 participants.

Sampling Technique

The sampling technique adopted for this study involved a comprehensive approach that included the selection of all eight Local Government Areas (LGAs) within Bayelsa State. Initially, mapping of households was conducted to identify potential participants. Following this mapping, eligible individuals were sampled from these households, focusing specifically on those employed by the government as well as individuals working in the informal sector. This dual focus ensured a diverse representation of the population, allowing for a more robust analysis of the determinants of Social Health Insurance uptake in the region.

Selection Criteria

Inclusion Criteria

- Participants were included in the study if they met the following criteria:
- They were residents of Bayelsa State, Nigeria.
- They were aged 18 years or older at the time of the interview.
- They had either enrolled in the Social Health Insurance (SHI) program or had sufficient awareness of the SHI program to provide informed responses regarding their perceptions and experiences.
- They consented to participate in the study by signing the informed consent form.

Exclusion Criteria

- Participants were excluded from the study if they met any of the following criteria:
- They were younger than 18 years old at the time of the interview.
- They had no prior awareness of the Social Health Insurance (SHI) program and could not provide relevant information regarding it.
- They were unable to provide informed consent due to cognitive impairments or other reasons that hindered their understanding of the study's purpose.
- They had been living outside Bayelsa State for more than six months prior to the study.

Method of Data Collection

A structured questionnaire was utilized for data collection in the study on the determinants of social health insurance uptake in Bayelsa, Nigeria. To facilitate real-time data collection and monitoring, the questionnaire was configured within the Kobo Collect Toolkit, enabling data enumerators to gather information efficiently. Face-to-face interviews were conducted to engage participants directly and elicit detailed responses. Prior to data collection, data enumerators underwent comprehensive training, which included an overview of the study objectives, the importance of gathering accurate data, and the ethical considerations involved in the research process. Ethical issues were clearly explained to the enumerators, ensuring that they understood the significance of obtaining informed consent and maintaining the confidentiality and privacy of participants. This rigorous preparation allowed for a systematic and ethical approach to collecting data on the factors influencing social health insurance uptake.

Validity and Reliability Test

Validity Test

To establish the validity of the questionnaire, a comprehensive validation process was undertaken. Initially, the questionnaire was developed based on a thorough review of existing literature on social health insurance and its determinants. This foundational work ensured that the questions were relevant and aligned with the study's objectives. Subsequently, the questionnaire was subjected to a content validity assessment by a panel of experts in health economics and public health. Their feedback was instrumental in refining the questions, ensuring that they effectively captured the key constructs related to social health insurance uptake. Additionally, a pilot test was conducted with a small sample representative of the target population. This pre-testing phase allowed for the identification of any ambiguous or unclear questions, which were then revised based on participant feedback. The adjustments made during this phase further enhanced the validity of the instrument, ensuring that it accurately measured what it intended to.

Reliability Test

The reliability of the structured questionnaire was assessed through several methods. During the pre-testing phase, the internal consistency of the questionnaire was evaluated using Cronbach's alpha, which provided a quantitative measure of the reliability of the scale. A Cronbach's alpha value above 0.70 was considered acceptable for this study, indicating that the items within the questionnaire were measuring the same underlying construct consistently. Furthermore, test-retest reliability was established by administering the questionnaire to a subset of participants at two different points in time, allowing for the comparison of responses. The results revealed a strong correlation between the two sets of responses, indicating that the questionnaire yielded stable

results over time. Additionally, the training provided to data enumerators emphasized the importance of uniformity in administering the questionnaire, which minimized variability in responses due to interviewer effects. Collectively, these measures ensured that the data collected were both valid and reliable, providing a strong foundation for the analysis of the determinants of social health insurance uptake in Bayelsa, Nigeria.

Data Management and Analysis

In investigating the determinants of social health insurance (SHI) uptake in Bayelsa, Nigeria, a systematic approach to data management and analysis was imperative for deriving meaningful insights from the collected data. The research utilized Kobo Collect Toolkit for data collection, which facilitated the gathering of information through structured questionnaires administered to respondents across various local government areas in Bayelsa. This mobile data collection tool enabled real-time data entry and reduced the potential for errors associated with manual data recording. Once the data collection phase was concluded, the data was downloaded into a Microsoft Excel sheet for initial management. This step involved cleaning the dataset to address inconsistencies, missing values, and outliers, ensuring the integrity of the data before further analysis. The Excel sheet served as a preliminary platform to conduct descriptive analyses, where key demographic variables and response patterns were summarized using measures of central tendency and dispersion. Through this process, the researchers were able to establish a foundational understanding of the sample population, identifying trends and variances in SHI awareness, enrolment status, and perceived barriers to uptake. Following this descriptive analysis, the research transitioned to inferential statistics using SPSS version 23. This software provided robust analytical capabilities, enabling the researchers to explore relationships between variables and test hypotheses regarding the determinants of SHI uptake. Specifically, logistic regression models were employed to examine the influence of socio-demographic factors, economic conditions, and community-level determinants on individuals' likelihood of enrolling in SHI. The findings from the inferential analysis illuminated key predictors of SHI uptake, revealing how factors such as education, income level, and trust in governmental institutions significantly impacted enrolment decisions. To enrich the analysis further and provide a comprehensive understanding of the data, the XLMiner Analysis Toolkit was utilized. This advanced statistical tool allowed for more complex analyses, including cluster analysis and multivariate regression techniques. By employing these methods, the researchers were able to segment the population into distinct groups based on their responses, thereby uncovering nuanced insights into the varying motivations and barriers faced by different demographics in relation to SHI. The application of XLMiner facilitated the visualization of data patterns, contributing to a more profound interpretation of the results in the context

of the study's objectives. Throughout the analysis, the researchers ensured that all findings were meticulously documented and referenced. The Word document containing the analysis was managed using Mendeley Referencing Manager, which streamlined the process of in-text citations and bibliography creation. This approach enhanced the scholarly rigor of the study, allowing for seamless integration of literature and theoretical frameworks that informed the research. In summary, the data management and analysis process undertaken in this study on the determinants of social health insurance uptake in Bayelsa was characterized by a structured and methodical approach. From the initial data collection with Kobo Collect to the extensive analyses conducted using Microsoft Excel, SPSS, and XLMiner, the research was grounded in a solid analytical foundation. By employing a combination of descriptive and inferential statistics, the researchers were able to draw significant conclusions about the factors influencing SHI enrolment, thereby contributing to the broader discourse on universal health coverage in Nigeria. The integration of efficient referencing practices further bolstered the scholarly quality of the study, ensuring that the findings were well-supported by existing literature and frameworks.

Timeline of the Study

Research Planning and Proposal

In July 2025, the research team engaged in comprehensive planning and development of the research proposal. This included identifying key objectives, formulating research questions, and outlining the methodology to investigate the determinants of social health insurance uptake in Bayelsa, Nigeria. The proposal was prepared for submission to the relevant institutional bodies for approval.

Institutional Ethical Approval

In August 2025, the research team obtained institutional ethical approval for the study, marked by reference number PHCB/AD/172/Vol.1/p.22. This approval ensured that the study adhered to ethical guidelines and protected the rights and welfare of the participants involved in the research.

Data Collection Preparedness

In September 2025, the team focused on preparing for data collection. This involved training research assistants, finalizing data collection instruments, and establishing logistical arrangements for conducting interviews and surveys in the designated study areas.

Data Collection

The data collection phase took place from October to November 2025. During this period, researchers implemented the prepared data collection instruments, conducting interviews and surveys across various local government areas in Bayelsa. Efforts were made to ensure a representative sample and to gather comprehensive data on the determinants of social health insurance uptake.

Report Writing and Dissemination

From December 2025 to January 2026, the research team engaged in report writing and dissemination of the findings. The team compiled the data analysis and synthesized the results into a comprehensive report. Subsequently, the findings were shared with stakeholders, including policymakers, healthcare providers, and community members, to inform future initiatives aimed at enhancing social health insurance uptake in Bayelsa.

Ethical Considerations

Institutional Consent

The study was reviewed and approved by the Ethics Committee of the Bayelsa State Primary Health Care Board, under the reference number PHCB/AD/172/Vol.1/p.22. The committee evaluated the research proposal to ensure that it adhered to ethical standards concerning the treatment of participants, data collection methods, and the overall integrity of the research process. The approval ensured that the study respected the rights and welfare of participants, particularly in a context where social health insurance uptake was being explored. The committee emphasized the importance of transparency, confidentiality, and informed consent throughout the research process, thereby providing oversight and guidance to the researchers.

Community Consent

Prior to the commencement of the study, community consent was sought from local leaders and representatives

in the areas where the research was to be conducted. This was achieved through community meetings where the objectives and significance of the research were outlined. The researchers made efforts to engage with community members, addressing their concerns and answering questions regarding the study's purpose and procedures. By obtaining community consent, the research respected local norms and values, fostering a sense of ownership and collaboration among residents. This approach was crucial in establishing trust and facilitating the acceptance of the study within the communities involved.

Individual Consent

Informed individual consent was obtained from all participants prior to their involvement in the study. Participants were provided with comprehensive information about the research, including its aims, potential risks, and benefits. They were assured of their right to withdraw from the study at any point without any consequences. The consent process was designed to ensure that participants understood the nature of the research and their role in it. Consent forms were written in clear and accessible language, and provisions were made for participants who required assistance in understanding the documentation. This careful approach aimed to uphold the ethical principles of autonomy and respect for persons, ensuring that individuals voluntarily participated in the study based on adequate understanding of the research context.

RESULTS AND DISCUSSIONS

Table 1: Demographic characteristics of respondents

Variable	Category	Frequency (n=600)	Percent (%)
Settlement	Urban	175	29%
	Rural	425	71%
Religion	Christianity	590	99%
	Islam	4	0%
	Traditional	6	1%
Age	19-34 years	171	28%
	35-54 years	286	48%
	55-60 years	107	18%
	61-70 years	27	4%
	71 years and above	9	2%
Gender	Male	274	46%
	Female	326	54%
Marital status	Single	114	19%
	Married	413	69%
	Divorce	20	3%
	Separated	31	5%
	Widow	22	3%
Educational level	No formal education	32	5%
	Primary education	77	13%
	Secondary education	323	54%
	Tertiary education	168	28%

Occupation	Artisans	34	
	Civil servants	151	25%
	Clergy men	2	0%
	Farmers	83	14%
	Fishermen/women	59	10%
	Petty traders	171	28%
	Students	43	7%
	Retirees	16	3%
	Taxi driver/Keke driver	41	7%
Employment status	Self-employed	93	15%
	Unemployed	345	58%
	Government employed	162	27%

Table 1 provided a comprehensive overview of the sociodemographic characteristics of respondents sampled regarding social health insurance uptake. The data revealed that a significant majority, 71%, of the respondents resided in rural areas, while 29% lived in urban settings. This rural predominance might have implications for access to and perceptions of social health insurance. In terms of religion, an overwhelming 99% of the respondents identified as Christians, with only a small fraction (1%) adhering to traditional beliefs, and a negligible 0.7% identifying as Muslims. This religious homogeneity might have influenced community attitudes towards social health insurance initiatives. The age distribution indicated that the largest segment of respondents (48%) fell within the 35-54 years age bracket, suggesting that middle-aged individuals were the most represented group. Younger adults aged 19-34 accounted for 28%, while the older age groups (55 years and above) represented a smaller portion of the sample. This age distribution could reflect varying levels of health insurance needs and priorities. Gender representation showed that females constituted 54% of the respondents, while males made up 46%. The slight majority of females might suggest different healthcare-seeking behaviours or access to information regarding social health insurance. Regarding marital status, a significant 69% of respondents were married, indicating that many individuals might be more likely to consider social health insurance for their families. In contrast, only 19% were single, and a minority reported being divorced, separated, or widowed. Educational levels indicated that more than half (54%) of the respondents had attained secondary education, with 28% having pursued tertiary education. This educational attainment could play a crucial role in understanding the respondents' awareness and comprehension of social health insurance options. Occupationally, the data showed a diverse range of employment statuses, with 28% of respondents being petty traders, followed by 25% civil servants, and a notable 58% identified as unemployed. The high unemployment rate might reflect economic challenges that could affect the ability to pay for or engage with social health insurance schemes. Lastly, employment status data indicated that 27% of

respondents were government employed, while 15% were self-employed. The high number of unemployed individuals might present significant barriers to the uptake of social health insurance. In conclusion, the sociodemographic characteristics examined in Table 1 highlighted various factors, including residence, religion, age, gender, marital status, education, occupation, and employment status, all of which played essential roles in the context of social health insurance uptake among the sampled population.

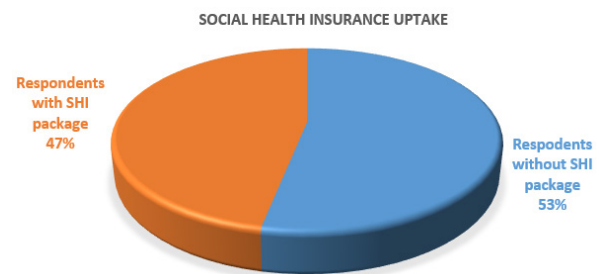


Figure 1: Social health insurance uptake

Figure 1 illustrated the status of respondents regarding their uptake of the social health insurance (SHI) package. It showed that 319 respondents, accounting for 53% of the total surveyed population, did not take up the SHI package, while 281 respondents, representing 47%, opted for the insurance. This distribution indicated that a majority of the respondents chose not to participate in the SHI, highlighting potential barriers or hesitations among

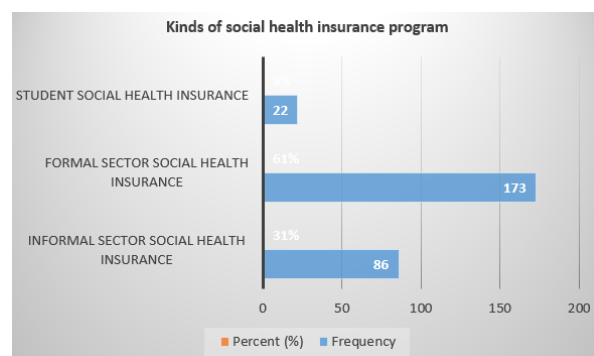


Figure 2: Type of social health insurance cover

the population toward adopting such insurance coverage during that period. The data reflected the challenges that social health insurance faced in gaining widespread acceptance and utilization among the respondents. In the context of social health insurance uptake, Figure 2 illustrated that a significant portion of respondents, 61%, were enrolled in formal sector social health insurance programs. This indicates that the majority of individuals had access to and utilized the insurance options available through formal employment.

Meanwhile, 31% of respondents participated in informal sector social health insurance, suggesting that a notable minority of individuals engaged with insurance options outside of formal employment settings. Lastly, only 8% of respondents were enrolled in student social health insurance programs, reflecting a relatively low uptake among students compared to the other categories. Overall, the data from Figure 2 revealed a predominant reliance on formal sector social health insurance among the respondents to drive the health insurance scheme.

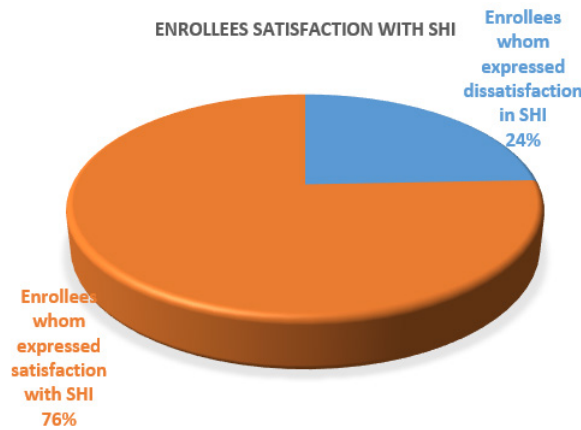


Figure 3: Respondents expression of satisfaction of social health insurance scheme

In Figure 3, respondents expressed their satisfaction levels regarding the social health insurance (SHI) scheme after enrolment and gaining access to healthcare. A total of 205 respondents indicated that they were satisfied with the SHI, reflecting a positive perception of the scheme’s effectiveness and the healthcare services provided. In contrast, 66 respondents expressed dissatisfaction, highlighting areas of concern or unmet expectations

within the SHI framework. This data suggested that, while the majority of participants found the SHI beneficial, a significant minority experienced challenges or issues that led to their dissatisfaction. Overall, the findings illustrated a mixed response to the SHI, emphasizing the need for ongoing evaluation and improvement of the scheme to address the concerns of all beneficiaries.

Table 2: Respondents’ reasons why they don’t go for insurance package

Variable	Frequency	Percent (%)
I am not aware of social health insurance scheme	98	17%
I don’t have knowledge of the benefits	144	25%
I don’t fall sick	2	0%
I can’t afford the monthly or annual premium	181	31%
The enrolment process is difficult	80	14%
The services provided are poor	55	10%
I am okay with the out-of-pocket fees	20	3%

The data presented in Table 2 highlighted several reasons why respondents did not engage with the social health insurance scheme. A significant portion of the respondents, 31%, indicated that the primary barrier to their participation was the inability to afford the monthly or annual premium. This financial constraint suggests that cost was a crucial factor affecting uptake. Additionally, 25% of the respondents expressed a lack of knowledge regarding the benefits of the insurance, which points to a potential gap in awareness and education about the advantages of enrolling in such a scheme. This lack of information might have contributed to their decision not

to participate. Moreover, 17% of the individuals reported that they were not aware of the existence of the social health insurance scheme at all, indicating a need for improved outreach and communication efforts to inform the public about available health insurance options. A smaller proportion of respondents, 14%, found the enrolment process to be difficult, which could suggest that simplifying the registration process might enhance participation rates. Additionally, 10% of the respondents were dissatisfied with the perceived quality of services provided by the insurance, which might have deterred them from enrolling. Only 3% of the respondents

indicated that they were comfortable with paying out-of-pocket fees for healthcare, suggesting that a minority preferred this method over insurance coverage. Lastly, a very small number, 2%, stated that they did not fall sick, which reflects a lack of perceived need for insurance among this group. Overall, the findings from the data

indicated that financial constraints, lack of awareness and knowledge, difficulties in the enrolment process, and concerns about service quality were significant factors that influenced the low uptake of social health insurance among the respondents in the past.

In the context of the social health insurance scheme,

Table 3: Chi-square test of independence between enrolment status and access to financial resources

Observed			
Variable	Enrolment Status		
	No	Yes	Grand Total
Respondents whom have access to financial resource (personal savings, loan)			
No	297	98	395
Yes	14	191	205
Grand Total	311	289	600
Expected			
Respondents whom have access to financial resource (personal savings, loan)			
No	204.742	190.258	395
Yes	106.258	98.742	205
Grand Total	311	289	600

$p\text{-value} = 6.995 \times 10^{-57}$

Table 3 illustrated the results of a chi-square test of independence that examined the relationship between respondents' enrolment status (whether they were enrolled or not) and their access to financial resources, specifically personal savings or loan facilities. The analysis revealed a significant association between these two variables, as indicated by a p-value of 6.995×10^{-57} , which was far below the conventional alpha level of 0.05. This strongly suggested that access to financial resources was related to the likelihood of enrolment in the health insurance scheme. The observed values showed that among the 600 respondents, a substantial number (297) who had no access to financial resources were not enrolled in the scheme, while a smaller group (14) with access to financial resources were also not

enrolled. Conversely, a considerable number (191) of those with access to financial resources were enrolled, compared to only 98 without access. The expected values demonstrated how enrolment would be distributed if there was no association between enrolment status and access to financial resources. However, the stark differences in observed versus expected counts indicated that access to financial resources played a crucial role in the enrolment decisions of respondents in the social health insurance scheme. This analysis highlighted the importance of financial accessibility in facilitating greater enrolment and participation in health insurance programs, suggesting that efforts to enhance financial support could lead to improved enrolment outcomes in such schemes.

Table 4: Chi-square test of independence of insurance coverage for dependents by type of insurance

Observed			
Variable	Insurance Cover for Dependents		
	No	Yes	Grand Total
Type of Insurance			
Formal sector social health insurance	10	163	173
Informal sector social health insurance	86	0	86
Student social health insurance	22	0	22
Grand Total	118	163	281
Expected			
Type of Insurance			
Formal sector social health insurance	72.65	100.4	173
Informal sector social health insurance	36.11	49.89	86
Student social health insurance	9.24	12.76	22
Grand Total	118	163	281

$p\text{-value} = 2.40 \times 10^{-53}$

The chi-square test (Table 4) conducted on the data regarding respondents who enrolled in various types of social health insurance and extended coverage to include dependents and family members revealed significant findings. The p-value of 2.40×10^{-53} indicated a highly statistically significant difference between the observed and expected frequencies in the categories of insurance coverage for dependents. From the observed data, it was noted that within the formal sector social health insurance, a majority of respondents (163) extended their coverage to include dependents, while only 10 did not. In contrast, the informal sector social health insurance had a predominance of respondents (86) who did not include dependents, with no respondents extending coverage in that category. The student social health insurance also showed a similar trend, with 22 respondents not extending coverage and none including

dependents. Expected frequencies suggested that, based on the distribution of policyholders across the types of insurance, approximately 100.4 individuals were anticipated to include dependents under the formal sector social health insurance, while only 49.89 and 12.76 were expected to do so within the informal and student social health insurance categories, respectively. These results highlighted the disparity in the uptake of insurance coverage for dependents across different types of social health insurance, indicating that while formal sector insurance facilitated extending coverage to dependents, the informal and student insurance schemes struggled to do so. This significant difference in coverage patterns underscored the importance of type of insurance in determining the extent of health benefits extended to dependents, reflecting broader trends in social health insurance uptake during that period.

Table 5: Linear regression of trust on SHI with confident, enrolment and payment of premium

ANOVA								
	df	SS	MS	F	Significance F			
Regression	4	26.5318	6.6329	54.4911	0.0000			
Residual	595	72.4266	0.1217					
Total	599	98.9583						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	1.0132	0.0558	18.1468	0.0000	0.9035	1.1228	0.9035	1.1228
Respondents' confident in the SHI	0.0899	0.0155	5.7871	0.0000	0.0594	0.1204	0.0594	0.1204
Awareness of enrolment centres	0.1729	0.0376	4.6055	0.0000	0.0992	0.2467	0.0992	0.2467
Commitment to enrolment	0.2533	0.0783	3.2329	0.0013	0.0994	0.4072	0.0994	0.4072
Payment of monthly or annual premium	-0.1268	0.0783	-1.6192	0.1059	-0.2806	0.0270	-0.2806	0.0270

The linear regression analysis presented in Table 5 provided insightful findings regarding the factors influencing respondents' ability to trust the insurance scheme and the government in managing health insurance funds. The results indicated that there was a significant positive relationship between respondents' confidence in the social health insurance (SHI) and several key variables. For instance, higher levels of confidence in the SHI were associated with an increase of approximately 0.0899 in the overall trust score, which was statistically significant ($p < 0.0001$). This suggests that when individuals felt more confident in the SHI, they were more likely to trust the system, potentially leading to higher uptake of health insurance. Moreover, knowledge of the nearest enrolment centre also had a notable impact, with an increase of 0.1729 in the trust score. This relationship was also statistically significant ($p < 0.0001$), indicating that when respondents were aware of where to enroll, their trust in the insurance scheme and government management increased, which likely facilitated a greater

likelihood of them enrolling in the health insurance program. Additionally, the determination to enroll in SHI was reflected in the coefficient of 0.2533, demonstrating a strong positive influence on trust ($p = 0.0013$). This finding reinforces the idea that individuals who were committed to enrolling were more confident in the management of the fund. On the other hand, the payment of premiums had a negative coefficient of -0.1268, although this was not statistically significant ($p = 0.1059$). This suggests that the perception of the burden of premium payments might have diminished trust in the insurance scheme, highlighting a potential barrier to uptake. Overall, the regression analysis revealed that confidence in the SHI, awareness of enrolment centres, and commitment to enrolment positively influenced trust in the insurance scheme and government management. These factors were crucial in shaping respondents' decisions to engage with social health insurance, ultimately impacting the overall uptake of these programs.

Discussions

In recent years, the uptake of social health insurance (SHI) had garnered significant attention within public health discourse, particularly as it pertains to improving health outcomes and access to healthcare services. This study analyzed the sociodemographic characteristics of respondents sampled on social health insurance uptake, drawing on data collected from a diverse population. The findings highlighted several determinants that influenced SHI participation, including settlement type, religion, age, gender, marital status, educational level, occupation, and employment status. The data revealed that a substantial proportion of the respondents resided in rural areas (71%), contrasted with 29% in urban settings. This urban-rural divide had been shown to significantly affect health insurance uptake, as rural populations often experience barriers related to accessibility, awareness, and economic constraints (Yang *et al.*, 2022; Yuan *et al.*, 2024). Rural residents might have less exposure to health insurance education programs and fewer healthcare providers, which could inhibit their willingness or ability to enroll in SHI schemes. Religion also played a crucial role in influencing SHI uptake. The overwhelming majority of respondents identified as Christians (99%), with a mere 1% adhering to traditional religions and almost none to Islam. Previous research had indicated that religious beliefs could impact health behaviours and perceptions of healthcare (Franke *et al.*, 2026). Thus, the homogeneity in religious affiliation among the surveyed population might have contributed to a uniformity in attitudes toward health insurance, potentially affecting the overall uptake. Age emerged as another significant determinant, with the largest cohort of respondents falling within the age range of 35-54 years (48%). This age group was often characterized by increased health care needs and financial stability, factors that could enhance the likelihood of insurance enrolment. In contrast, older adults (aged 61 years and above) represented only 6% of the sample, which might indicate lower engagement in health insurance schemes among this demographic due to factors such as fixed incomes or lack of awareness regarding available options. Gender disparities were also evident in the data, with a higher proportion of female respondents (54%) compared to male respondents (46%). Gender had been shown to influence health insurance uptake, with women often facing unique barriers such as lower income levels and cultural norms that affect their decision-making autonomy regarding health care (Baker *et al.*, 2017). Therefore, understanding these gender dynamics was essential for designing targeted interventions that promote SHI uptake among both men and women. Marital status further contributed to understanding SHI uptake, as the majority of respondents were married (69%). Marital status could influence health insurance decisions, as married individuals often share resources and might be more likely to prioritize health coverage for their families (Yamaya *et al.*, 2020). In contrast, single individuals, who constituted 19% of the sample, might

exhibit different motivations and considerations regarding health insurance enrolment. Educational attainment also emerged as a pivotal factor, with 54% of respondents having completed secondary education. Higher levels of education have been associated with greater health literacy, which could facilitate understanding of health insurance options and benefits (Przybylska *et al.*, 2014). Conversely, the 5% with no formal education might face significant challenges in navigating the complexities of health insurance systems, further impeding their uptake. Lastly, employment status was a critical determinant of SHI uptake, with a staggering 58% of respondents classified as unemployed. Unemployment was often linked to economic insecurity, which could deter individuals from investing in health insurance (Adekunle & Vincent, 2025; Erinoso *et al.*, 2023). Moreover, those employed in government jobs (27%) or self-employment (15%) might have different motivations for seeking insurance coverage, with government employees potentially benefiting from employer-sponsored plans. Understanding these factors was essential for policymakers and health administrators aiming to enhance health insurance enrolment and ultimately improve health outcomes within communities. The uptake of social health insurance (SHI) packages among respondents (Figure 2) revealed significant insights into the determinants influencing their decisions. The findings indicated that 319 respondents (53%) opted not to enroll in an SHI package, while 281 respondents (47%) chose to participate. This disparity in uptake rates underscores the multifaceted nature of health insurance decisions and highlights various socio-economic, cultural, and informational determinants that have been documented in previous literature. One of the primary determinants influencing SHI uptake was income level. Prior studies have shown that individuals with higher income levels are more likely to engage with health insurance products, as they could better afford the premiums associated with these packages (Hone *et al.*, 2024b). Conversely, lower-income respondents often perceive insurance as an unnecessary financial burden, leading to their underutilization of available health services. In this study, a notable proportion of non-respondents might have been deterred from enrolling in SHI due to financial constraints, aligning with findings, which reported that economic factors significantly affected health insurance uptake in diverse populations. Another critical factor that emerged from the analysis was the level of awareness and understanding of SHI benefits. Research findings indicated that individuals who possess adequate knowledge about the advantages of health insurance are more likely to enroll. This study's respondents who did not take up the SHI package might have lacked sufficient information regarding the coverage and potential benefits of the insurance scheme (Bugshan *et al.*, 2022). Previous literature had emphasized the importance of health education and communication strategies in enhancing public awareness and promoting SHI uptake. Thus, targeted outreach

programs could effectively address knowledge gaps among potential enrollees. Cultural beliefs and attitudes towards healthcare also played a significant role in the decision-making process. Many individuals might have a strong reliance on traditional medicine or community-based health practices, which might lead them to view formal health insurance as unnecessary (Majeed *et al.*, 2023; Miranda, 2021). The respondents' choices reflect a broader trend wherein cultural perceptions could either facilitate or hinder engagement with formal healthcare systems, including SHI. Addressing these cultural barriers through community involvement and culturally sensitive health promotion strategies could enhance the effectiveness of SHI programs. Moreover, the perceived quality of healthcare services covered by SHI packages was another determinant affecting uptake. Studies have shown that potential enrollees are more likely to invest in insurance if they believe that the services offered meet their healthcare needs and expectations. If respondents perceived the quality of care provided under SHI as inadequate, it could deter them from enrolling. This finding suggests that policymakers should focus on improving the quality of healthcare services associated with SHI to boost enrolment rates.

The findings from Figure 3 indicated a diverse landscape of social health insurance enrolment among respondents, with 31% participating in informal sector social health insurance, 61% in formal sector social health insurance, and 8% in student social health insurance. This distribution illuminates several critical determinants influencing the uptake of social health insurance, which was pivotal for achieving universal health coverage (UHC). The predominance of formal sector social health insurance among respondents aligns with previous studies that suggest employment status significantly impacts access to health services. According to findings, the formal employment sector typically offers better access to comprehensive health benefits, thereby facilitating higher enrolment rates (Infanta *et al.*, 2025). This finding underscores the importance of stable employment and its associated benefits in promoting health insurance uptake. Conversely, the lower uptake in informal sector social health insurance, despite its representation, indicates potential barriers faced by individuals in this category, such as lack of awareness, perceived value of the insurance, and financial constraints. In addition, the relatively low enrolment in student social health insurance (8%) raises concerns regarding the accessibility and appeal of such programs to younger populations. Research findings highlighted that the perceived irrelevance of health insurance during youth often leads to lower uptake rates (Završnik, 2021). This suggests that strategies aimed at increasing awareness and the perceived value of health insurance among students might be necessary to enhance participation in this demographic. The determinants of social health insurance uptake are multi-faceted and often intertwined with socio-economic factors. For instance, socio-economic status had been shown to play a crucial

role in health insurance enrolment, with individuals from higher socio-economic backgrounds more likely to obtain coverage (Anarwat, 2022; Ellegård & Laberge, 2025). The substantial enrolment in formal sector insurance in this study might reflect the socio-economic advantages of those employed in formal sectors, thus highlighting the disparities in health insurance access that persist across different economic strata. Moreover, the implications of these findings extend to the broader goal of UHC, which seeks to ensure that all individuals have access to necessary health services without financial hardship. As noted by research findings, achieving UHC requires not only increasing enrolment in social health insurance programs but also addressing the underlying determinants that inhibit access to these programs (Hone *et al.*, 2024; Nay *et al.*, 2016). This includes enhancing the quality of informal sector insurance schemes and tailoring student health insurance programs to meet the specific needs and preferences of younger populations. In a nutshell, the varying rates of enrolment in different types of social health insurance programs reflect the complex interplay of determinants influencing uptake. Addressing these determinants was essential for advancing towards UHC, emphasizing the need for targeted policies that promote equitable access to health insurance across all sectors of society.

The findings from the assessment of respondents' satisfaction (Figure 4) with the Social Health Insurance (SHI) scheme reveal a significant disparity between satisfaction and dissatisfaction levels among enrollees. Specifically, while 205 respondents expressed satisfaction with the SHI, a notable 66 respondents reported dissatisfaction. This disparity highlights critical issues in the implementation and perception of health insurance schemes, which are essential determinants of the overall uptake and effectiveness of SHI in achieving universal health coverage (UHC). Previous studies have identified several determinants that influence the uptake of social health insurance. According to the studies, accessibility, affordability, and quality of healthcare services are pivotal in determining individuals' willingness to enroll in SHI schemes (Afegbua *et al.*, 2025). In this context, the high level of satisfaction among the majority of respondents suggested that these factors were adequately addressed, allowing for a more positive healthcare experience. Conversely, the dissatisfaction reported by a segment of respondents might point to gaps in service delivery, such as long waiting times, inadequate facilities, or perceived inequities in care (Limiri, 2025). Moreover, the socioeconomic status of respondents had been shown to significantly influence their perceptions and satisfaction with health insurance schemes. A study indicated that individuals from lower socioeconomic backgrounds often face barriers to accessing healthcare, which could lead to dissatisfaction with insurance schemes designed to provide coverage (Anarwat, 2022). In our findings, the disparity in satisfaction levels could reflect underlying socioeconomic factors that were not fully explored, warranting further

investigation. Furthermore, the role of information dissemination regarding the benefits and coverage of SHI schemes could not be overstated. Research had demonstrated that a lack of awareness and understanding of health insurance benefits could deter individuals from enrolling and utilizing services effectively (Bugshan *et al.*, 2022). The positive assessment of SHI among the majority of respondents suggests that effective communication strategies might have been employed, enhancing their understanding and utilization of healthcare services. However, the dissatisfaction expressed by a minority could indicate that targeted educational efforts are still necessary to ensure all enrollees are fully informed of their rights and the services available to them. Overall, these findings emphasize the importance of addressing the determinants of social health insurance uptake to achieve universal health coverage. Policymakers must focus on enhancing service quality, ensuring equitable access, and improving information dissemination to foster greater satisfaction among all enrollees.

The results from the survey indicated several key barriers to the uptake of social health insurance among respondents (Table 2). Notably, the most prominent reason cited was the inability to afford the monthly or annual premium, with 31% of participants identifying this as their primary concern. This finding aligns with existing literature that highlights affordability as a significant barrier to health insurance coverage, particularly in low- and middle-income countries. The financial burden associated with insurance premiums could deter individuals from enrolling, especially when faced with competing economic demands. Additionally, 25% of respondents reported a lack of knowledge regarding the benefits of social health insurance as a contributing factor to their non-enrollment. This echoes findings from previous studies that suggest a direct correlation between awareness and insurance uptake, indicating that educational interventions could potentially enhance enrolment rates. The importance of disseminating clear information about the advantages of health insurance could not be overstated, as individuals who understand the potential benefits are more likely to invest in coverage. Moreover, the difficulties associated with the enrolment process were cited by 14% of respondents. This aligns with research findings, which found that cumbersome registration procedures could serve as a significant hurdle for potential enrollees. Simplifying the enrolment process might reduce barriers and encourage more individuals to obtain insurance (Howard *et al.*, 2021). Furthermore, the perception of poor service provision (10%) also contributed to hesitance in enrolling. This concern reflects a broader issue within health systems where service quality directly impacts patients' willingness to utilize insurance products. If individuals believe that the services provided under a health insurance scheme are inadequate, they might prefer to rely on out-of-pocket payments or forgo care altogether. Interestingly, only 3% of respondents indicated they were satisfied with out-of-

pocket fees, suggesting that while some individuals might prefer this payment method, it was not a predominant view among the majority. The responses indicate a complex interplay between financial considerations and perceptions of service quality, which underscores the need for a multifaceted approach to improving health insurance coverage.

The analysis presented in Table 3 utilized a chi-square test of independence to explore the relationship between enrolment status in health insurance and access to financial resources, such as personal savings or loan facilities. The results indicated a statistically significant association, as evidenced by an exceedingly low p-value (6.995×10^{-57}), suggesting that respondents' access to financial resources played a critical role in their decision to enroll in health insurance. The findings align with previous literature highlighting the importance of financial accessibility in the uptake of social health insurance. For instance, studies had noted that individuals with greater financial resources were more likely to enroll in health insurance schemes, as they perceived a lower risk of financial hardship associated with health expenditures. This observation was particularly relevant in low- and middle-income countries, where economic barriers often hinder the pursuit of health insurance coverage. Moreover, the chi-square results demonstrated that respondents with access to financial resources were significantly more likely to enroll in health insurance compared to those without such access. This reinforces the argument made by research finding, who emphasized that financial security was a key determinant of health insurance uptake (Eunice *et al.*, 2015; Uzochukwu *et al.*, 2015; Wei & Weiss, 2024). The presence of personal savings or the ability to secure loans could mitigate the perceived risks associated with health expenditures, thus encouraging individuals to seek coverage. Additionally, the expectation that economic factors influence health insurance decisions was substantiated by the observed frequencies in the dataset. Respondents without access to financial resources were disproportionately represented among those who did not enroll in health insurance, highlighting a crucial barrier to achieving universal health coverage (UHC). As posited by the International Association of Insurance Supervisors, addressing these financial barriers was essential for enhancing health insurance enrolment and achieving UHC goals (IAIS, 2011). In a nutshell, the results of this analysis underscored the significant impact of financial resources on health insurance enrolment. The findings contributed to the broader discourse on the determinants of social health insurance uptake, emphasizing that improving access to financial resources could be a vital strategy in promoting universal health coverage. Future policies should thus focus on integrating financial support mechanisms to facilitate health insurance enrolment, particularly for vulnerable populations.

In this study, the chi-square test (Table 4) was employed to analyze the relationship between the type of social health insurance and the provision of insurance coverage for

dependents. The results indicated a statistically significant association, as evidenced by the extremely low p-value (2.40×10^{-53}), suggesting that the type of insurance significantly influenced whether policyholders extended coverage to their dependents. The findings aligned with previous research highlighting the determinants of social health insurance uptake and their implications for achieving universal health coverage (UHC). The observed data indicated that individuals enrolled in formal sector social health insurance were more likely to extend coverage to dependents compared to those in informal sector and student social health insurance schemes. This trend could be attributed to several factors previously identified in the literature. For instance, formal sector insurance often provides more comprehensive benefits and greater financial security, which might encourage policyholders to include their dependents in their coverage. Additionally, the structural features of formal sector insurance, such as employer contributions and regulatory frameworks, might facilitate higher participation rates among employees, thereby enhancing family coverage. Conversely, the lack of dependent coverage in informal sector insurance could be linked to financial constraints and limited access to resources. Informal sector workers often face economic instability, which could impede their ability to afford additional coverage for dependents (Ntabirubal *et al.*, 2024). This finding underscores the significance of addressing the barriers faced by informal sector workers to bolster health insurance uptake, thereby promoting equity in health care access (Magambo *et al.*, 2022; Okumu *et al.*, 2024). The results also highlighted the limited uptake of dependent coverage within student social health insurance schemes. This could be attributed to the transient nature of student populations and the often-limited financial resources available to them. Therefore, targeted interventions aimed at improving awareness and accessibility of dependent coverage among students could enhance overall health insurance uptake. Overall, the study reinforced the notion that the type of social health insurance influences the extent to which policyholders extend coverage to their dependents. This finding was pivotal in understanding the broader determinants of social health insurance uptake and its role in achieving universal health coverage.

The analysis presented in Table 5 highlights the significant impact of respondents' trust in the insurance scheme and the government on various determinants of social health insurance (SHI) uptake, which was essential for achieving universal health coverage (UHC). The regression results indicate that trust was positively associated with respondents' confidence in the SHI, their knowledge of the nearest enrolment centre, and their determination to enroll in the health insurance program, while it had a negative association with the willingness to pay premiums. This nuanced relationship underscores the complexity of factors influencing SHI uptake. A key finding from the analysis was the positive coefficient associated with respondents' confidence in the SHI,

which suggests that higher levels of trust corresponded with greater confidence in the insurance scheme. This finding aligns with previous research that had established trust as a crucial determinant of health insurance uptake. For instance, studies emphasized that trust in health systems and governmental bodies significantly influenced individuals' decisions to enroll in health insurance programs (Guiso, 2021). Trust mitigates perceived risks and uncertainties related to health insurance, fostering a more favorable attitude towards enrolment and engagement with health services (Adewole *et al.*, 2021). Additionally, the positive relationship between trust and knowledge of the nearest enrolment centre indicates that when individuals trust the system, they were more likely to seek information and engage with available resources. This finding corroborates with previous findings, who documented that enhancing public trust could facilitate access to information about health services, thereby supporting enrolment processes. In contrast, the negative coefficient related to the willingness to pay premiums suggests that even with high levels of trust, financial barriers remained a significant challenge. This finding was consistent with existing literature that emphasizes the role of affordability in health insurance uptake (Eibner *et al.*, 2013). The reluctance to pay premiums, despite trust, highlighted the need for strategies to address financial constraints, such as subsidizing costs or providing flexible payment options. The results also demonstrate the importance of government and institutional transparency in fostering trust. When individuals perceive that the government was transparent and accountable in managing health insurance funds, their trust might likely to increase. This trust, in turn, could lead to more proactive behaviours regarding health insurance enrolment and premium payments. Overall, the findings from this regression analysis provide valuable insights into the determinants of SHI uptake. They underscored the necessity of building and maintaining trust in health systems as a prerequisite for achieving UHC. Policymakers should prioritize strategies that enhance transparency, stakeholder engagement, and communication to foster trust, which might subsequently improve SHI uptake. Future research should explore longitudinal effects of trust on health insurance behaviours and consider the integration of qualitative methodologies to deepen the understanding of the underlying factors influencing these dynamics.

CONCLUSION

In conclusion, this research successfully investigated the determinants of social health insurance (SHI) uptake in Bayelsa State, Nigeria, highlighting significant barriers and facilitators that influenced the achievement of universal health coverage (UHC). The study revealed that socio-demographic characteristics, including age, gender, education, and income, played crucial roles in individuals' decisions to enroll in SHI programs. A predominant number of respondents resided in rural areas, which

underscored the geographic disparities that limited access to health insurance. The research also identified financial constraints as a primary barrier, with many participants citing the inability to afford premiums as a significant obstacle to enrolment. Furthermore, awareness and understanding of SHI benefits emerged as critical factors influencing uptake. A substantial portion of respondents expressed a lack of knowledge regarding the advantages of health insurance, suggesting a need for enhanced outreach and education initiatives. The findings indicated that trust in government institutions and perceived quality of healthcare services under SHI significantly impacted enrolment rates, emphasizing the importance of transparency and effective governance in fostering public confidence. The study utilized a mixed-methods approach, combining quantitative surveys and interviews, which provided a comprehensive understanding of the complexities surrounding SHI uptake in Bayelsa. The results highlighted the necessity for policymakers and health administrators to address the multi-faceted barriers identified in this research to facilitate broader SHI enrolment. By implementing targeted interventions aimed at improving financial accessibility, enhancing public awareness, and ensuring the quality of healthcare services, stakeholders could effectively promote greater participation in SHI programs. Overall, this research contributed valuable insights into the determinants of SHI uptake in Bayelsa State, underscoring the need for context-specific strategies that align with the unique socio-economic and cultural landscape of the region. The findings offered a foundation for further studies and policy discussions aimed at advancing UHC in Nigeria, ultimately enhancing health outcomes and financial protection for the population.

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insurance uptake in Bayelsa State. This collective effort has enriched our understanding of the determinants of social health insurance and will undoubtedly contribute to the ongoing discourse surrounding universal health coverage in Nigeria.

No Conflict of Interest

The authors of this research work declared that there were no conflicts of interest related to the study. They confirmed that the research was conducted without any financial or personal relationships that could have influenced the outcomes or interpretations of the findings. All funding sources were transparently disclosed, and no external parties had a role in the design, execution, or reporting of the research.

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