Journal of Tikapur Multiple Campus
Vol.9; February 2026
ISSN: 2382-5227
Published by Research Management Committee (RMC)
Tikapur Multiple Campus, Kailali, Nepal

Assessing Beneficiaries' Perception towards National Health Insurance Scheme in Nepal

[1]Min Bahadur Shahi [2]Khem Raj Subedi
[1]Associate Professor at Tikapur Multiple Campus,
Far Western University, shahiminsir@gmail.com,
https://orcid.org/0000-0001-9988-3613
[2]Associate Professor at Tikapur Multiple Campus,
Far Western University, khem7434@fwu.edu.np, khem7434@gmail.com,
https://orcid.org/0000-0003-1162-2828,
Corresponding author email: khem7434@gmail.com.
DOI: https://doi.org/10.3126/jotmc.v9i9.90411

Abstract

Financial risk protection and efficient use of healthcare resources remain critical challenges for Nepal as a low-income country. This study examines beneficiaries' perceptions of financial risk protection and service coverage under the National Health Insurance Scheme (NHIS) from a health economics perspective, with a focus on optimizing limited resources. The study aims to capture beneficiaries' perception on satisfaction, challenges, and gaps in scheme implementation within the study area. Primary data were collected during the first quarter of 2025 from 62 NHIS-enrolled households across nine wards of Tikapur Municipality, Kailali district, using a structured questionnaire. Proportionate stratified sampling based on ward-level enrollment was applied, with purposive sampling within each stratum. The findings indicate that beneficiaries generally rate the NHIS positively in terms of financial security. However, notable weaknesses persist, particularly regarding emergency care support and the availability of health services. A major concern expressed by respondents is the exclusion of several essential medicines from the benefit package, especially those needed by vulnerable populations. In addition, the current annual coverage ceiling of NPR 100 thousand is widely perceived as insufficient to meet actual healthcare costs. These gaps highlight the need for operational and policy reforms. Expanding benefit packages and increasing coverage limits could enhance enrollee satisfaction, reduce out-of-pocket payments for healthcare, promote equity, and support Nepal's progress toward universal health coverage.

Keywords: Health insurance, Universal health coverage, financial risk protection, Service coverage, Beneficiary perception analysis

JEL Classification: I13, I18, H51

Introduction

Nepal, being a low-income country, healthcare expenditure optimization is a pertinent development issue. Perception of financial risk protection and service coverage core proposition within the realm of health economics meant for optimization of limited and scarce resource. Nepal has begun systematic financial protection mechanism effectively by establishing the National Health Insurance Scheme (NHIS) only after a decade or so. The initial attempt at health insurance in Nepal can be traced back to 1976 at Patan Hospital located in the Lalitpur District. Subsequently, in 2000, the BP Koirala Institute of Health Sciences launched a second initiative across 17 distinct communities in the Morang and Sunsari districts. However, by establishing the Social Health Security Development Committee in 2015 and the Social Health Insurance Program in 2016, Nepal started a health insurance scheme. Nepal has embarked on the ambitious journey of implementing a national health insurance program aiming to provide universal health coverage (UHC) to its population (Pradhan et al, 2022).

Health care financing has an important role to play in transforming the health care system into one which provides efficient and effective health care to poor and vulnerable people in Nepal (Subedi, 2018). Despite this effort to enhance financial risk protection, many Nepali beneficiaries remain unclear about the adequacy and limitations of coverage, hindering effective utilization of healthcare service. Moreover, service coverage is a pressing issue in Nepal's NHIS and seriously affecting trust and stake of beneficiary to ensure comprehensive healthcare access with quality. This issue is to be resolved urgently and consistently to ensure to meet the requirement of UHC, ensuring access to quality healthcare without financial hardships, covering all essential services. This is instrumental to ensure financial risk protection and reduce out-of-pocket (OOP) payments for healthcare to protect from catastrophic healthcare expenditure (NHRC, 2022). Evidently, macroeconomic data on healthcare shows that OOP payment for health ranges around 60 percent of current health healthcare expenditure in Nepal. This clearly indicates that patients are out of financial protection mechanisms and severely affected by catastrophic healthcare expenditure (Sapkota et al., 2023).

In this context, the NHIS is structured to address two primary concerns. Firstly, financial risk protection of beneficiaries and secondly, adequate healthcare service coverage to ensure better healthcare utilization (Kruk et al., 2018). Moreover, financial risk protection is instrumental to ensure that health services do not lead beneficiaries into poverty due to high OOP payment for health. Furthermore, service coverage pertains to the range and quality of services that beneficiaries can access under the insurance scheme (Subedi & Adhikari, 2025; Frenz & Vega, 2010).

This paper is focused to assess beneficiaries' perception towards NHIS in Nepal for ensuring their financial protection and ensuring overall healthcare coverage based on the survey data of Tikapur municipality of Kailali district. In this regard, this paper aims to fill the knowledge and evidence gap by identifying challenges faced by the beneficiaries of NHIS based on their survey data in the study area. Moreover, within the realm of health economics and social protection theories, it explores how perceptions of financial risk protection and service coverage are formed. Therefore, the general aim of the study was to assess the contribution of NHIS to ensure financial protection to access the healthcare utilization from the prospective beneficiary. Based on the empirical evidence from Tikapur Municipality, the study assesses how NHIS enrollment influences

healthcare utilization and addresses the broader issue of healthcare affordability of households in the low-income country like Nepal. In this context, the pertinent research questions are: What is the socio-economic and demographic status of the beneficiary households in the study area? How are the beneficiaries' perception of financial risk protection and service coverage among National Health Insurance Beneficiaries in the study area? Why are the financial risk protection and service coverage among National Health Insurance beneficiaries not sufficient in the study area? Thus, the research questions provide a clear framework for investigating the perception of impact of NHIS to ensure financial protection in Nepal.

Review of Related Literature

Theoretical Foundation

Perception of financial risk protection and service coverage core proposition within the realm of health economics meant for resource optimization given the healthcare utility maximization. Therefore, this current study draws upon the theories from health economics, and social protection to explain how beneficiaries form perceptions of financial risk protection and service coverage under the NHIS in Nepal. In this regard, theoretical frameworks explain beneficiaries' perceptions of national health insurance through access, beliefs, and trust. Andersen's behavioral model links predisposing, enabling, and need factors to enrollment and utilization (Andersen, 1995). Health Belief Model highlights perceived susceptibility, benefits, and barriers shaping attitudes toward scheme uptake (Rosenstock, 1974). Local socio-cultural norms and prior experiences mediate perception differences in Tikapur and require context-specific assessment for targeted policy responses.

Empirical Review

The perception of financial risk protection under Nepal's NHIS is critical, given the dominance of informal labor and widespread household financial instability. Evidence shows that programs like the NHIP can reduce OOP payments for healthcare, thereby improving healthcare utilization and outcomes (Khatri et al., 2025). However, the NHIS scheme effectiveness depends largely on beneficiaries' awareness and perception of its benefits (Saksena et al., 2014). In this regard, service coverage is equally vital, as timely access to essential care without unnecessary referrals determines satisfaction and trust (Timsina et al., 2024).

Moreover, the scope and quality of healthcare services significantly shape perceptions towards NHIS (Lagomarsino et al., 2012). The studies conducted earlier present mixed findings on the issue. In general, many beneficiaries appreciate the reduced financial burden during emergencies, others highlight limited healthcare service coverage and administrative hurdles. Likewise, the perceptions are also influenced by socio-economic status, education, and prior healthcare experiences (Alhassan et al., 2016). To address these disparities, there requires contextualized analysis across diverse populations.

Intuitively, continuous stakeholder engagement and adaptive policies are desirable to strengthen financial protection and healthcare service delivery (Ranabhat et al., 2019). Therefore, NHIS sustainability depends on integrating beneficiary feedback to align financial protection and

coverage with population healthcare needs (Chokshi et al., 2016). However, limited empirical research on beneficiary perceptions creates a knowledge gap that constrains policy advancement.

The perception analysis is focused on the six key dimensions that cover all aspects of the perception analysis the health insurance service receives (Andersen, 1995). The study is grounded in health economics, developed by several scholars. Moreover, it is grounded on the Structure-Process–Outcome framework Donabedian (1988) to evaluate health insurance performance, and Expectation–Confirmation Theory (Oliver, 1980) to explain enrollee satisfaction. The theories are consistent with health financing theory (Arrow, 1963), enrollee perceptions that reflect financial protection, access efficiency, and welfare outcomes of insurance systems. They are financial protection that focus on the reduction in personal health expenditure burden, access to health services that assess improved physical and financial access to health facilities, coverage adequacy that emphasizes satisfaction with the breadth & scope of services covered. Likewise, perception analysis is also regarding process quality that focuses on transparency, claims process, information flow, received effectiveness and gives emphasis to perceived improvement in health care quality and service effectiveness and satisfaction and continuity considering beneficiary satisfaction, willingness to renew and recommend insurance. The summary of thematic review is presented subsequently.

Financial Risk Protection

Perceived financial risk protection refers to beneficiaries' sense of being protected from high OOP payments for healthcare. In this regard empirical studies show mixed evidence. The insurance schemes in Ghana, Rwanda, and Vietnam have lowered catastrophic health expenditure (Giedion et al., 2013), beneficiaries often report residual costs due to partial coverage or exclusions (Chankova et al., 2008). Paudel et al. (2021) study identified interconnected challenges in Nepal's health insurance, including poor awareness, delayed reimbursement, weak coordination, fraud, and limited political support. The studies complied the suggested solutions that include the arrangement of digital enrollment, programme integration, better human resource management in healthcare, legal reforms, and early site evaluation, underscoring solution from institutional level.

Access to Healthcare Services

Perceived access of NHIS enrollee encompasses both physical availability of healthcare services and the ease of healthcare utilization. In this context, Wagstaff et al. (2009) underscored that insurance has been linked to increased service utilization in several low- and middle-income countries. However, this does not always translate to better access. In this regard, there are several barriers such as travel distance, overcrowding, and limited provider choice undermine the benefit. In Nepal, logistical challenges and lack of trust in listed facilities deter some from using insured services (Paudel et al., 2021).

Coverage Adequacy

There are several types of healthcare issues that a person comes across during life time and they are termed as healthcare coverage adequacy. Therefore, coverage adequacy reflects to what extent the benefit package of NHIS meets healthcare needs of beneficiaries. In this regard

Mathauer et al. (2017) stated that inadequate coverage of NHIS is a matter of serious criticism from the side of beneficiaries, especially for the patients that require specialist care due to chronic conditions, and expensive medicines. Similarly, the study of Jehu-Appiah et al. (2011) in Ghana reported serious dissatisfaction when essential services were either excluded or inconsistently provided or both. There is wide spread general perception amongst Nepalese that the benefit ceiling is inadequate and an extremely narrow package.

Process Quality

In the context of NHIS, the process quality implies experience of NHIS enrollee during service delivery, such as healthcare provider's behavior, waiting time for healthcare service, and administrative clarity on the service delivery. In this regard, empirical studies reveal that insured patients mostly face longer waiting times and are sometimes treated less favorably than paying patients (Chankova et al., 2008). The poor and weak arrangement for claim processing and referral inefficiencies further seriously erode trust. Likewise, Nunnally and Bernstein (1994) emphasized that reliable perception measurement of enrollee should include such subjective experiential dimensions.

Perceived Effectiveness

In the context of NHIS perception analysis, perceived effectiveness refers to whether beneficiaries believe the scheme has improved their healthcare security. The evidence supports the increased use of healthcare services (Giedion et al., 2013), and the perceptions of effectiveness of service quality are affected by system-level weaknesses such as drug stockouts, non-responsive care, and referral breakdowns. In Nepal, people often express doubt about the insurance's role in improving health outcomes (Paudel et al., 2021).

Satisfaction and Continuity of Enrollment

In the context of NHIS beneficiary perception, beneficiary satisfaction determines whether they will continue the NHIS enrollment. Empirical studies underscore that satisfaction correlated with service quality and financial relief and positive outcome enhances the enrollment (Wang et al., 2012). However, the studies of Jehu-Appiah et al. (2011) and Khanal et al. (2021) underscored that dissatisfaction due to limited coverage and poor service has led to the dropout from NHIS and non-renewal in countries like Ghana, Tanzania, and Nepal. The continuity NHIS enrollment is also shaped by awareness, and trust of enrollee, and administrative efficiency of the supply side.

The literature reveals the mixed effect of NHIS on financial protection across its selected construct and beneficiaries' perceptions remain conflicted across all six dimensions. Moreover, the financial risk protection is often incomplete, inadequate, and access is compromised by logistical, geographical, and systemic factors. Similarly, coverage is seen as inadequate when essential healthcare services and medicines are excluded. In addition, the process quality and perceived effectiveness are neglected and undermined by the bureaucratic inefficiencies and poor service experiences. Consequently, the studies have gauged low and moderate level satisfaction, threatening the continuity of enrollment. Therefore, there is gap between the policy promises and implementation of realities. In Nepal, context-specific insights across the proposed construct

remain scarce, making knowledge and evidence gap for policy refinement aimed at improving financial protection, healthcare utilization, and sustainability of enrollment in the NHIS scheme.

Data and Methodology

The study adopts cross-sectional design in terms of number of contacts with respondents to conduct surveys on their perception analysis. In terms of nature of data, it is a quantitative design that examines beneficiary perceptions on the contribution of National Health Insurance Scheme (NHIS) on the financial risk protection on healthcare expenditure and summarizes the data to draw inference. In this regard, the population of the studies were all the HHs of Tikapur Municipality that are enrolled in NHIS as this municipality was selected in the first phase by the Government of Nepal to introduce the NHIS scheme. To fulfil research objectives, primary data were collected during the first quarter of 2025 from 62 NHIS-enrolled households across nine wards of Tikapur Municipality, Kailali district, using a structured questionnaire. Moreover, proportionate stratified sampling based on ward-level enrollment was applied, with purposive sampling within each stratum. Moreover, out of 21,638 enrolled households in the Fiscal Year 2023/24, as a sample 62 households were selected for perception analysis using purposive sampling. The sample size was deemed sufficient to capture in-depth insights across key dimensions of service quality, financial protection, and satisfaction, consistent with exploratory perception studies in health insurance and service evaluation (Parasuraman et al., 1988; Sharma et al., 2024; Oliver, 1980). The relevant data were collected using a structured questionnaire administered through Google Forms, supplemented by trained enumerators. The survey focused on household healthcare expenditure, demographic and socioeconomic characteristics, and experiences with health insurance. A five-point Likert scale measured six key dimensions of service perception to assess the scheme's impact. Moreover, limited qualitative inputs were also gathered to capture challenges and contextual insights.

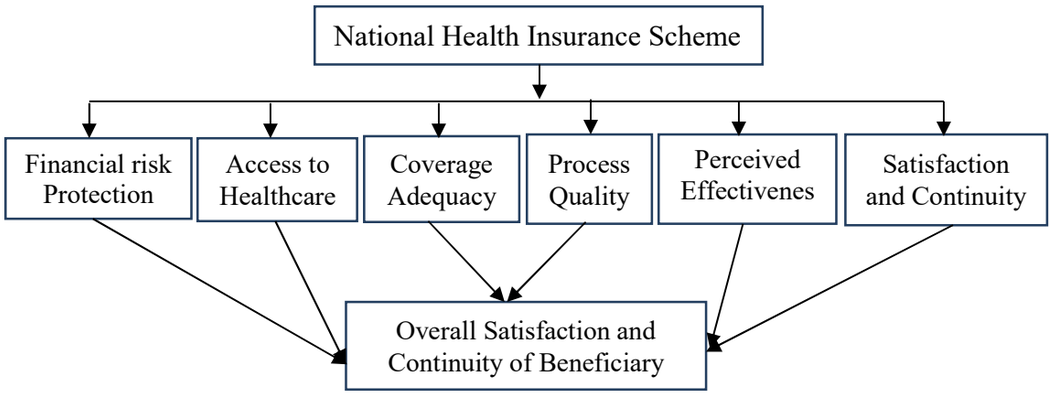
The research takes post-positivist instances in the context of this research. In this regard, the constructs such as NHIS enrollment, financial burden, and service perceptions are observable and measurable realities and value ranges within a certain scale of measurement and reflecting healthcare and economic conditions in Nepal. Moreover, the epistemological instance of the study is objectivism as the findings are reliable and generalizable, based on rigorous data collection and hypothesis testing. Furthermore, the study maintains value neutrality by analyzing relationships objectively and avoiding subjective bias of the researchers, followed by the ethical safeguards, including informed consent, confidentiality, and privacy of respondents. Pilot testing of questionnaire was done. Finally, Cronbach's alpha value was estimated to ensure the internal consistency and reliability of a set of scales and constructs and items used as survey tools.

Conceptual Framework of the Study

The conceptual framework was constructed based on the literature survey to identify the construct of the survey. Figure 1 demonstrates the complete conceptual framework.

Figure 1

Conceptual Framework of the Study



Note. **F**igure 1 demonstrates the key Construct for Beneficiary Survey.

Result and Discussion

This section is outlined as per the objectives of the paper. Moreover, it presents socio-economic and demographic information of the respondents, followed by the descriptive analysis of the data to arrive at a conclusion as per the paper objectives. They are discussed subsequently.

Economic and Demographic Profile of Respondents

Table 1 below presents the socio-economic and demographic profile of households enrolled in the National Health Insurance Scheme (NHIS) and provides important insights into the economic capacity, healthcare behavior, and willingness to pay (WTP) for improved insurance services among respondents.

Table 1

Socio-economic and Demographic Profile of Respondents

Particular	Mean	SD
Income per HH members (NPR)	8814.93	365.29
HH OOP payments for healthcare (NPR)	2645.02	586.90
Household Size	4.45	1.54
Average age of HH head (in years)	52.10	14.68
Annual Hospital visit rate	10.35	0.84

Note. Table 1 shows the summary of key socio-economic and health-related statistics HHs.
Source: Field Survey, 2025.

Table 1 presents key socioeconomic and healthcare-related indicators among the sampled households. The average monthly per HH member income was NPR 8,814.93 with Standard deviation (SD) 365.29. The distribution of income as measured as mean and standard deviation, is relatively uniform income levels across respondents. Similarly, mean OOP payments for healthcare was NPR 2,645.02 with Standard Deviation (SD) 586.90. On average, this accounts for roughly 30 percent of household income spent for OOP payments, which is a clear indication of catastrophic healthcare expenditure. In other words, this highlights a considerable financial burden even for insured families, consistent with findings by Karan et al. (2017). The average household size was 4.45 with SD 1.54, reflecting Nepal's common multi-generational family structure has changed. The average age of household heads was 52.10 years with (SD) 14.68. This figure clearly suggests that a predominantly elderly population with higher healthcare needs are serving the HH heads. With an annual hospital visit rate of 10.35 times (SD = 0.84), healthcare utilization was notably high, likely supported by NHIS coverage.

Table 2

Respondents Status WTP, Education and Chronic Disease

Particular	**Response Category**	
WTP for increased health insurance premium	Yes	79.04
	No	20.96
Threshold of WTP for Increased Premium Health Insurance in percent	6.98	4.22
Education level of HH head (in Percent)	Illiterate	16.10
	Basic and Primary	32.30
	Secondary	27.40
	Bachelor	16.10
	Masters	8.10
Gender of HH Head (in Percent)	Male	61.16
	Female	38.84
Chronic Disease in HH	**Yes**	**51.60**

Note. Table 2 presents social and household characteristics of respondents.

Source: Field Survey, 2025.

Table 2 shows that 16.10 percent of household heads were illiterate, 32.30 percent had attained basic and primary education, 27.40 percent HH heads secondary education graduate, 16.10 percent HH heads have bachelor level education, and only 8.10 percent held a master's degree. Essentially, this educational distribution reflects a predominantly low to moderately educated population and this may influence understanding and perception of health insurance benefits. Likewise, the gender distribution of household heads shows that 61.16 percent were male and 38.84 percent female, which is in line with the patriarchal structure of many Nepali households, where males traditionally assume the role of household heads. Finally, 51.60 percent

of households reported the presence of chronic diseases, while 48.40 percent did not. The high prevalence of chronic illness underscores the importance of health insurance in managing long-term healthcare costs.

Perception Analysis of NHIS Beneficiaries

The perception analysis is focused on the six key dimensions that covers all aspects of the perception analysis the health insurance service receives. They are financial protection that focus on the reduction in personal health expenditure burden, access to health services that assess improved physical and financial access to health facilities, coverage adequacy that emphasizes satisfaction with the breadth & scope of services covered.

Reliability of Measurement Scales

Table 3 presents the reliability analysis results in terms of Cronbach's Alpha for the perception scale items used to assess key six dimensions encompassing 33 constructs of health insurance among the enrollees in the study area.

Table 3

Cronbach's Alpha for Item used to Perception Analysis of Health Insurance Enrollee

Dimensions of analysis	Number of items	Cronbach's Alpha	Interpretation
Financial Protection	7	0.846	Very good reliability
Access to Healthcare Service	6	0.811	Good reliability
Coverage Adequacy	5	0.798	Acceptable
Process Quality	5	0.859	Very good reliability
Perceived Effectiveness	6	0.874	Excellent Reliability
Satisfaction and Continuity	4	0.889	Excellent Reliability
Overall	33	0.846	Very good overall consistency

Note. Table 3 shows Cronbach's Alpha for Item used Perception Analysis of Health Insurance Service Receiver in the Study area.

Source: Field Survey, 2025.

Evidently, the results indicate that the Cronbach's Alpha values range between 0.798 and 0.889 for all six dimensions**,** indicating acceptable to excellent internal consistency. Comparatively, the dimension **'**Coverage Adequacy' has the lowest Cronbach's Alpha value 0.798. The overall scale reliability Cronbach's Alpha values is 0.846 suggests that the instrument is consistently measuring the basic constructs related to health insurance perception. These results align with the previous studies such as Alhassan et al. (2016) and Kim et al. (2010), which reported similar Cronbach alpha values in health insurance perception surveys. However, few contrasting findings are also evident based on contexts like rural India (Aggarwal et al., 2020), and Ghana (Nguyen et al., 2011). These studies highlight the importance of policy environment and beneficiary understanding in shaping perception consistency.

Perception of National Health Enrollee on Financial Security

Table 4 below summarizes perception analysis results using descriptive statistical tools. The dimension of perception on financial security from health insurance enrolment was surveyed based on the six constructs as displayed in Table 4.

Table 4

Perception on Financial Security from Health Insurance Enrolment

Financial Protection	Mean	SD
NHIS has reduced my OOP payments for healthcare	4.06	0.248
NHIS has supported me to manage my health expenses.	3.89	0.680
NHIS has reduced my stress during medical treatments.	3.58	0.897
NHIS enrollment has made my financial burden is bearable.	3.79	0.727
NHIS has increased my healthcare service utilization	3.89	0.515
Without NHIS my health care costs would have been unbearable.	3.85	0.507

Note. Table 4 above shows perception of NHIS beneficiaries on financial security.
Source: Field Survey, 2025.

Table 4 shows that mean scores ranged from lowest 3.58(SD =0.897) to highest 4.06 (SD0.248), all above the neutral value of 3.0, indicating positive perceptions. The highest mean was for the statement, "Health insurance has reduced my OOP payment for health," suggesting strong agreement. This re-emphasizes that financial protection with health insurance dominates. Though Nepal's National Health Insurance Scheme caps OOP payment for health, the beneficiaries still find that the coverage breadth and depth of the scheme are limited. The results are consistent with Fang et al. (2010), whose research found that financial demands were significantly reduced among the beneficiaries of Korea's National Health Insurance.

Chankova et al. (2008) in the research undertaken on West African Mutual Health Organizations likewise discovered that coverage through insurance significantly led to a reduction of OOP payment for health accompanied by increased financial predictability.

However, the long-term inability of insured members to afford health care validates warnings provided for Ghana by Alhassan et al. (2016) and for India by Aggarwal et al. (2020), that benefit limits, co-payments, and uninsured services blocked insurance schemes from having their full protective impact.

Perception on Improvement of Access to Healthcare Services

Table 5 below shows the perception analysis result on the contribution of NHIS Programme to improve access to health services in the study area. Evidently, the result indicate that Nepal's National Health Insurance Programme significantly increased the accessibility of health service ranging the mean score of the construct in lowest 3.39(SD=0.930) to highest 3.97(SD=0.254), which indicates that overall respondents agreed that health insurance increased their accessibility of primary health service and motivated towards utilization of medical care.

Table 5

Contribution of Health Insurance Programme to Improve Access to Health Services

Access to Health Service	Mean	SD
Health insurance has increased my access to basic health services.	3.92	0.454
With health insurance, I am more willing to seek medical treatment.	3.94	0.475
Health insurance has increased the number of available health service providers for me.	3.85	0.560
My health insurance enables me to visit nearby hospitals or clinics.	3.87	0.495
I am satisfied with the scope of health services covered by national health insurance.	3.97	0.254
Health insurance provides an appropriate coverage limit for my health needs.	3.39	0.930

Note. Table 5 shows perception of NHIS beneficiaries regarding improvement in the healthcare access.

Source: Field Survey, 2025.

However, the perceived adequacy of coverage limits scored lower (Mean = 3.39, SD = 0.930, $p < 0.01$), reflecting concerns about whether the financial ceiling sufficiently addresses household health needs. Moreover, this concern is important in the context of rising healthcare costs and persistent OOP payment for healthcare. Likewise, coverage ceilings of NPR 100,000 per family per year have been criticized as inadequate, particularly for chronic and catastrophic illnesses. Similar trends in the perception analysis are confirmed in LMICs like Vietnam and Ghana, where health insurance improved access and reduced financial barriers. Pandey et al. (2023) confirmed improved service utilization among insured households in Nepal. However, the result is contrasting with the findings by Wolf et al. (2012), who argued the improvement in the benefits of comprehensive coverage.

Healthcare Service Coverage Adequacy by National Health Insurance Scheme

Table 6 demonstrates perception of NHIS enrollee regarding the adequacy of healthcare service coverage under Nepal's NHIS. Evidently, the mean score for across overall coverage adequacy perception ranges higher than average. Moreover, mean and standard deviation (SD) from 3.55 (0.843) to 3.97(0.254). Having estimated mean score above 3.0, it can be stated that respondents have a positive perception regarding the coverage adequacy of NHIS.

Table 6

Healthcare Service Coverage Adequacy

Coverage Adequacy	Mean	SD
National health insurance generally provides the necessary health services for me.	3.55	0.843
National health insurance covers most of my medical expenses.	3.69	0.759
NHIS health service coverage is satisfactory to me.	3.97	0.254
The process of claiming NHIS is easy and effective.	3.94	0.356
NHIS program provides transparent information about covered and uncovered expenses.	3.97	0.254

Note. Table 6 shows perception of NHIS beneficiaries on the adequacy of healthcare service coverage.

Source: Field Survey, 2025.

Table 6 clearly shows that perception of the NHIS enrollee on service coverage is moderate, with a mean score of 3.55 and SD 0,843. Likewise, the mean score and standard deviation for perception analysis of respondents for NHIS coverage of medical expenses 3.69, and 0.759 respectively. Though the moderate SD indicates differing experiences based on healthcare utilization and coverage limits. Similarly, perceived satisfaction with the scope of overall coverage is also high with mean 3.97, and SD 0.254. This construct indicates relatively strong and consistent perception. Likewise, the claim process of NHIS was rated positively with mean 3.94, and SD 0.356. This also suggests ease and satisfaction with administrative procedures. Chankova et al. (2008) also confirm these results and reported enhanced access and satisfaction in West Africa. But a study of Alhassan et al. (2016) in Ghana found an albeit contrasting result stating that variability in perceptions echoes concerns in the perception analysis. In contrast, Savitha and Banerjee (2020) noted lower satisfaction in India's fragmented micro-insurance schemes.

Perceived Process Quality of Health Insurance Service

This Table 7 below presents the perception of health insurance enrollees regarding the process quality of services offered by the NHIS, based on four constructs. The overall mean and SD of perception of healthcare service process quality ranges between 3.44 to 3.97. This indicates that the respondents generally have a positive perception towards the process quality of the NHIS. The mean score above 3.0 suggests agreement with the statement, indicating higher than average satisfaction with process-related aspects of health insurance services.

Table 7

Perception of Health Insurance Enrollee on Process Quality of Health Insurance Service

Process quality	Mean	SD
Customer service provided by the health insurance program responds promptly.	3.94	0.356
The health insurance program provides clear and helpful information about my benefits.	3.82	0.615
The health insurance program assures me of support during medical emergencies.	3.44	0.898
Health insurance provision has increased my financial security regarding health expenses.	3.97	0.254

Note. Table 7 shows perception of NHIS beneficiaries on process quality of care providers.
Source: Field Survey, 2025.

Table 7 reveals that perception of respondents on NHIS customer service is also with mean 3.94, and SD 0.56). This indicates strong and consistent satisfaction with the service promptness of the caregiver. Similarly, the perception on the construct of clear and helpful information is also high with mean of 3.82, and SD 0.615). This implies general agreement, though the higher SD reflects some variation perhaps due to unclear communication for some enrollees. The perceived score for the construct on emergency support assurance is relatively the lowest with mean 3.44, followed by highest SD 0.898. Intuitively, this highlights mixed perceptions and uncertain scenarios of support during emergencies. Notably, perception on the statement on financial security scored the highest mean 3.97, followed by lowest SD 0.254. This indicates widespread agreement and positive outlook of NHIS enrollee on improved financial protection. These results and findings echo with Kim et al. (2010) regarding customer service satisfaction in Korea. Moreover, Chankova et al. (2008) also aligns results on financial security in West Africa. Concerns on emergency response align with Alhassan et al. (2016), while Aggarwal et al. (2020) found lower satisfaction in India's fragmented schemes.

Perceived Effectiveness

Table 8 below provides insight into the construct of perceived effectiveness of the NHIS based on the responses of enrollees. The mean and SD values across the six indicators of perceived effectiveness range from 3.66 to 3.97 and 0.254 to 0.788 respectively. This indicates that the respondents generally hold a positive view of the effectiveness of NHIS to ensure access to quality healthcare and reducing financial vulnerability. Essentially, a mean score above 3.5 on five-point Likert scale suggests that the majority of respondents agree or strongly agree with the positive statements regarding the NHIS.

Table 8

Perceived effectiveness of the National Health Insurance Scheme

Perceived Effectiveness of Service	Mean	SD
Due to health insurance coverage, I am less likely to need loans or sell property for medical expenses.	3.97	0.254
The scope of my health insurance allows me to receive good quality health care.	3.68	0.742
Health facilities I can access provide better services because they are insured.	3.66	0.788
Because of health insurance, it has become easier and more desirable for me to seek health services.	3.84	0.549
The services covered by health insurance encourage me to undergo health check-ups.	3.81	0.596
Because of health insurance, I am motivated to consult a health service provider as soon as symptoms appear.	3.94	0.356

Note. Table 8 shows perception of NHIS beneficiaries on the effectiveness of the programme.
Source: Field Survey, 2025.

The statement "Due to health insurance coverage, I am less likely to need loans or sell property for medical expenses" received a high mean score of 3.97 (SD = 0.254), indicating strong consensus on NHIS's role in offering financial protection. This aligns with findings from Chankova et al. (2008) and Ekman's (2004) on the financial protection offered by community-based health insurance in low-income countries. The statement "Because of health insurance, I am motivated to consult a health service provider as soon as symptoms appear" scored a mean of 3.94 (SD = 0.356), showing NHIS's positive influence on early health-seeking behavior, consistent with Kimani et al. (2014) in Kenya. However, the mean score of 3.66 with SD 0.788 for perceptions of better services in insured facilities show higher variability. Likewise, perceived mean score 3.68 with SD 0.742 for quality care access reflect high variability. In this context, Alhassan et al. (2016) and Kusi et al. (2015) raised concern for deeper inquiry.

Perceived Satisfaction and Continuity of NHIS

Table 9 below displays perception of NHIS enrollee on the analysis dimension perceived satisfaction and continuity of enrollment based on the 4 constructs across the dimension. The mean scores for across four constructs range between 3.52 to 3.71 respectively. Essentially, overall positive attitude but higher variability as indicated by standard deviation implies that the NHIS experience is not uniform across enrollees of health insurance. It provides clues for potential areas of inquiry for improving the service.

Table 9

Perception Analysis of Perceived Satisfaction and Continuity of NHIS

Satisfaction and Continuity of Enrollment	Mean	SD
I plan to continue my NHIS in the coming years.	3.66	0.957
Based on my experience of reduced OOP payments or health, I recommend health insurance to others.	3.52	1.112
I am willing to pay a reasonable amount to continue my health insurance.	3.69	0.879
I believe the cost of NHIS is reasonable compared to its benefits.	3.71	0.894

Note. Table 9 shows perception of NHIS beneficiaries about satisfaction and continuity of the enrolment.

Source: Field Survey, 2025.

Table 9 shows that the construct on continuing NHIS in future has mean score 3.66 with SD 0.957, reflecting general optimism with noted variability, echoing Mebratie et al. (2015) in Ethiopia. Notably, the construct "I believe the cost of health insurance is reasonable compared to its benefits" has the highest mean 3.71 with SD 0.894 across the dimension. This finding is supported by Wagstaff et al. (2018), who found affordability and perceived value crucial for enrollee satisfaction and retention in Low and Middle Income Countries. Similarly, the construct "I am willing to pay a reasonable amount to continue my health insurance" has mean 3.69 and SD 0.879. This implies that beneficiaries are ready to increase NHIS premium to maintain coverage. This result is consistent with Jehu-Appiah et al. (2011) in Ghana where beneficiaries showed a positive outlook on the same. Intuitively, the lowest mean score for beneficiaries' readiness to recommend others to enroll in NHIS is 3.52, followed by highest SD 1.112 is a matter of serious concern. In general, it suggests more varied opinions, likely due to inconsistent service experiences. In fact, this finding also aligns with the findings of Alhassan et al. (2016).

Problem Encountered by Health Insurance Enrollee in the Study Area

Table 10 below presents perceived problems faced by the enrollee during the process of service receiving within certain themes that are derived from semantic similarities across respondents' statements. In this regard, the responses mostly relate to waiting time, availability of medicines, service quality, staff behavior, and cost issues.

Table 10

Problem Encountered by NHIS Enrollee

Theme / Category	Representative Statements	Frequency
Long waiting time	Long waiting time; Problems with queues; Elderly have difficulty standing in line	25
Unavailability of medicines	All medicines not available; Essential medicines unavailable; Distribution of low-quality medicines	15
Service not fully available	Not all treatments provided; Some services unavailable; Not all services accessible	10
Bias in Staff behavior	No time for staff to handle queues; Staff show favoritism; Staff behavior lacks empathy	7
Financial burden / Extra cost	10% payment required; Problems if money is insufficient; Some medicines must be bought outside at higher prices	6
Overcrowding / Congestion	Overcrowding; Standing in line all day; Sometimes services take 2–3 days	5
Need to visit other facilities	Must go outside for complex health problems; Need to go to other pharmacies if medicine unavailable	3
Administrative delays / Reports	Reports not delivered on time; Not all services available in one place	3

Note. Table 10 above summarizes the problem encountered by health insurance enrollee in the Study Area,

Source: Field Survey, 2025.

Based on the field survey, problems faced by NHIS enrollee are discussed in some key themes as presented in Table 10. Most of the respondents reported standing in long queues for registration, check-ups, tests, and medicines, often spending the entire day to access basic insured services. Beneficiaries expressed frustration over the unavailability of essential medicines, forcing them to purchase costly alternatives outside the insurance network. Respondents noted that major surgeries and complex treatments were either not covered or required referrals without proper documentation or clarity. Complaints included inadequate skilled personnel, delayed service, and perceived discriminatory behavior toward insured patients compared to non-insured ones. Mandatory co-payment, OOP payment costs, and fragmented service requiring multiple counter visits created stress, especially for the elderly and vulnerable groups.

Conclusions and Policy Implication

The NHIS in Nepal has improved healthcare access and reduced financial barriers, yet concerns remain regarding the adequacy of financial protection. To strengthen impact, the government should raise benefit ceilings and expand the scope of covered services. Based on the perception analysis, customer service and financial security are well-rated, inconsistencies in emergency support and service availability highlight the need for operational improvements. Addressing gaps in the benefit package and ensuring equitable delivery across regions will boost

enrollee satisfaction and confidence. The scheme must broaden coverage to include preventive, curative, rehabilitative, and palliative care for all groups, aligned with evolving health needs. This expansion is expected to promote universal health coverage and reduce OOP payments for health. Furthermore, ensuring the continuous availability of all prescribed and essential medicines is vital. Current shortages essential medicine force beneficiaries to make OOP payment to purchases, undermining the scheme's goals. Policy reforms targeting these issues will ensure sustainability and better health outcomes. Therefore, results are expected to inform policymakers and assist service users by providing evidence on how health insurance influences access, affordability, and satisfaction without causing harm.

Limitations

The limitations of the study are:

- The small sample size limits the statistical power and generalizability of the findings.
- The intertemporal dynamics during the sampling period i.e. January and April 2025 may limit ability to infer causality and observe changes over time.
- The study may suffer from recall bias and social desirability bias from the part of respondents.
- The study may not have fully captured information on alternative health-seeking behavior such as informal care, traditional healing practices, potentially affecting the accuracy of estimated effects.
- The study findings from Tikapur municipality may not reflect conditions in more urbanized and remote rural areas of Nepal, having different settings of healthcare infrastructures and insurance coverage levels.

Acknowledgements

Authors express gratitude to Tikapur Multiple Campus Research Management Cell (RMC) for providing this academic work in terms of Faculty Research financial support that facilitated field work and completed the research work. Moreover, we affirm that there is no conflict of interest regarding any matters.

References

Aggarwal, A., Jain, M., & Ghosh, P. (2020). Health microinsurance impact on enrolment and service utilization: Evidence from India. *Social Science & Medicine, 258,* 113099.

Alhassan, R. K., Nketiah-Amponsah, E., & Arhinful, D. K. (2016). A review of the National Health Insurance Scheme in Ghana: What are the sustainability threats and prospects? *PLOS ONE, 11*(11), e0165151.

Andersen, R. M. (1995). Revisiting the behavioral model and access to medical care: does it matter? *Journal of health and social behavior*, 1-10.

Arrow, K. J. (1978). Uncertainty and the welfare economics of medical care. In *Uncertainty in economics* (pp. 345-375). Academic Press.

Chankova, S., Sulzbach, S., & Diop, F. (2008). Impact of mutual health organizations: Evidence from West Africa. *Health policy and planning*, *23*(4), 264-276.

Cheng, Q., Fattah, R. A., Susilo, D., Satrya, A., Haemmerli, M., Kosen, S., ... & Wiseman, V. (2025). Determinants of healthcare utilization under the Indonesian national health insurance system: A cross-sectional study. *BMC Health Services Research*, *25*(1), 48.

Chokshi, M., Patil, B., Khanna, R., Neogi, S. B., Sharma, J., Paul, V. K., & Zodpey, S. (2016). Health systems in India. *Journal of Perinatology, 36*(3), S9-S12.

Donabedian, A. (1988). The quality of care: How can it be assessed? *Jama*, *260*(12), 1743-1748.

Fang, P., Dong, S., Xiao, J., Liu, C., Feng, X., & Wang, Y. (2010). Regional inequality in health and its determinants: evidence from China. *Health policy*, *94*(1), 14-25.

Frenz, P., & Vega, J. (2010, November). Universal health coverage with equity: What we know, don't know and need to know. In Background paper for the First Global Symposium on Health Systems Research (Vol. 2010).

Giedion, U., Alfonso, E. A., & Díaz, Y. (2013). *The impact of universal coverage schemes in the developing world: A review of the existing evidence* (pp. 1-151). Washington, DC: World Bank.

Jehu-Appiah, C., Aryeetey, G., Agyepong, I., Spaan, E., & Baltussen, R. (2011). Household perceptions and their implications for enrolment in the National Health Insurance Scheme in Ghana. *Health policy and planning*, *27*(3), 222-233.

Khanal, G. N., Bharadwaj, B., Upadhyay, N., Bhattarai, T., Dahal, M., & Khatri, R. B. (2023). Evaluation of the National Health Insurance Program of Nepal: Are political promises translated into actions? *Health research policy and systems*, *21*(1), 7.

Khatri, R. B., Khanal, P., Thakuri, D. S., Ghimire, P., & Jakovljevic, M. (2025). Navigating Nepal's health financing system: A road to universal health coverage amid epidemiological and demographic transitions. *PloS one*, *20*(5), e0324880.

Kimani, J. K., Ettarh, R., Kyobutungi, C., Mberu, B., & Muindi, K. (2012). Determinants for participation in a public health insurance program among residents of urban slums in Nairobi, Kenya: Results from a cross-sectional survey. *BMC health services research*, *12*(1), 1-11.

Kruk, M. E., Gage, A. D., Arsenault, C., Jordan, K., Leslie, H. H., Roder-DeWan, S., ... & Pate, M. (2018). High-quality health systems in the Sustainable Development Goals era: Time for a revolution. *The Lancet global health*, *6*(11), e1196-e1252.

Kusi, A., Enemark, U., Hansen, K. S., & Asante, F. A. (2015). Reflections on sustainability of health insurance schemes: A case study of Ghana's National Health Insurance Scheme. *Global Health Action, 8,* 26956.

Lagomarsino, G., Garabrant, A., Adyas, A., Muga, R., & Otoo, N. (2012). Moving towards universal health coverage: Health insurance reforms in nine developing countries in Africa and Asia. *The Lancet*, *380*(9845), 933-943.

Mebratie, A. D., Sparrow, R., Yilma, Z., Alemu, G., & Bedi, A. S. (2015). Enrollment in Ethiopia's community-based health insurance scheme. World Development, 74, 58-76.

Nguyen, H. T., Rajkotia, Y., & Wang, H. (2011). The financial protection effect of Ghana National Health Insurance Scheme: evidence from a study in two rural districts. *International journal for equity in health*, *10*(1), 4.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric Theory* (3rd ed.). McGraw-Hill.

Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of marketing research*, *17*(4), 460-469.

Pandey, J. P., Karn, R. K., Shrestha, D. K., Neupane, G. P., & Bajracharya, S. (2023). Impact of health insurance on healthcare utilization and expenditure in Nepal: Evidence from a household survey. *Journal of Nepal Health Research Council, 21*(1), 45–52.

Parasuraman, A. B. L. L., Zeithaml, V. A., & Berry, L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *1988*, *64*(1), 12-40.

Paudel, K., Raut, A., Adhikari, S., et al. (2021). Community perceptions of the national health insurance program in Nepal: A qualitative study. *BMC Health Service Research, 21*(1),1-10.

Pradhan, P., Subedi, D. R., Khatiwada, D., Joshi, K. K., Kafle, S., Chhetri, R. P., ... & Bhuju, D. R. (2022). The COVID-19 pandemic not only puts challenges but also opens opportunities for sustainable transformation. Authorea Preprints.

Rahman, T., Gasbarro, D., & Alam, K. (2022). Financial risk protection from out-of-pocket health spending in low-and middle-income countries: A scoping review of the literature. *Health Research Policy and Systems*, *20*(1), 83.

Ranabhat, C. L., Kim, C. B., Singh, A., Acharya, D., Pathak, K., Sharma, B., & Mishra, S. R. (2019). Challenges and opportunities towards the road of universal health coverage (UHC) in Nepal: A systematic review. *Archives of Public Health*, *77*(1), 5.

Rosenstock, I. M. (1974). The health belief model and preventive health behavior. *Health Education Monographs, 2*(4), 354–386.

Saksena, P., Hsu, J., & Evans, D. B. (2014). Financial risk protection and universal health coverage: Evidence and measurement challenges. *PLOS medicine,11*(9), e1001701.

Sapkota, V. P., Bhusal, U. P., & Adhikari, G. P. (2023). Occupational and geographical differentials in financial protection against healthcare out-of-pocket payments in Nepal: Evidence for universal health coverage. *Plos one*, *18*(1), e0280840.

Savitha, B., & Banerjee, S. (2020). Education and experience as determinants of micro health insurance enrolment. *International journal of health policy and management, 10*(4), 192.

Sharma, S. K., Mudgal, S. K., Gaur, R., Chaturvedi, J., Rulaniya, S., & Sharma, P. (2024). Navigating sample size estimation for qualitative research. *Journal of Medical Evidence*, *5*(2), 133-139.

Subedi, K. R. (2018). A glimpse on health care financing in Nepal. *Journal of Tikapur Multiple Campus*, *4*(4), 37–48. https://doi.org/10.3126/jotmc.v4i4.70144

Subedi, K. R., & Adhikari, C. (2025). Macroeconomic Factors Affecting Out-of-Pocket Payments for Health: Evidence from Panel Data Analysis of SAARC Countries. *Cuestiones de Fisioterapia*, *54*(5), 1239-1252.

Subedi, K. R., Shahi, M. B., & Bhatt, S. D. (2025). Assessing the contribution of National Health Insurance Scheme to reduce household out-of-pocket payments for healthcare in Nepal. *Contemporary Research: An Interdisciplinary Academic Journal*, *8*(2), 207-228.

Thapa, A. K., & Pandey, A. R. (2020). National and provincial estimates of catastrophic health expenditure and its determinants in Nepal. *Journal of Nepal Health Research Council, 18*(4), 741–746.

Timsina, K., Silwal, S., Mandal, P. K., & Basnet, S. (2024). Factors Associated with Enrollment of Household in National Health Insurance Program in Eastern Nepal. *Journal of College of Medical Sciences-Nepal*, *20*(2), 132-137.

Wagstaff, A., Flores, G., Hsu, J., Smitz, M. F., Chepynoga, K., Buisman, L. R., ... & Eozenou, P. (2018). Progress on catastrophic health spending in 133 countries: a retrospective observational study. *The Lancet Global Health, 6*(2), e169-e179.

Wagstaff, A., Lindelow, M., Jun, G., Ling, X., & Juncheng, Q. (2009). Extending health insurance to the rural population: an impact evaluation of China's new cooperative medical scheme. *Journal of health economics*, *28*(1), 1-19.

Wang, H., Switlick, K., Ortiz, C., Zurita, B., & Connor, C. (2012). *Health insurance handbook: How to make it work*. World Bank Publications.

Wang, H., Zhang, L., Yip, W., & Hsiao, W. C. (2006). Adverse selection in a voluntary Rural Mutual Health Care health insurance scheme in China. *Social Science & Medicine, 63*(5), 1236–1245. https://doi.org/10.1016/j.socscimed.2006.03.012