



## OPEN ACCESS

## EDITED BY

Abdene Weya Kaso,  
Arsi University, Ethiopia

## REVIEWED BY

Isaac Odeyemi,  
Manchester Metropolitan University,  
United Kingdom  
László Vértesy,  
Hungarian University of Agricultural and Life  
Sciences, Hungary

## \*CORRESPONDENCE

Gelgelo Wodessa  
✉ galgishaatasoo@gmail.com

RECEIVED 14 January 2025

ACCEPTED 21 April 2025

PUBLISHED 15 May 2025

## CITATION

Wodessa G, Gelchu M, Fikrie A and Tuke G  
(2025) Determinants of the decision to enroll  
in community-based health insurance among  
households in the West Guji Zone, Oromia  
State, southern Ethiopia, in 2022.  
*Front. Health Serv.* 5:1559578.  
doi: 10.3389/frhs.2025.1559578

## COPYRIGHT

© 2025 Wodessa, Gelchu, Fikrie and Tuke. This  
is an open-access article distributed under the  
terms of the [Creative Commons Attribution  
License \(CC BY\)](https://creativecommons.org/licenses/by/4.0/). The use, distribution or  
reproduction in other forums is permitted,  
provided the original author(s) and the  
copyright owner(s) are credited and that the  
original publication in this journal is cited, in  
accordance with accepted academic practice.  
No use, distribution or reproduction is  
permitted which does not comply with  
these terms.

# Determinants of the decision to enroll in community-based health insurance among households in the West Guji Zone, Oromia State, southern Ethiopia, in 2022

Gelgelo Wodessa\*, Miesa Gelchu, Anteneh Fikrie and Gemechis Tuke

School of Public Health, Institute of Health, Bule Hora University, Bule Hora, Ethiopia

**Background:** In recent years, the Ethiopian government has introduced community-based health insurance (CBHI) schemes to increase healthcare accessibility and affordability. Despite these efforts, enrolment rates remain low, posing challenges to achieving universal health coverage. This study investigates the determinants influencing household enrolment decisions in community-based health insurance within the West Guji Zone, Oromia Regional State, southern Ethiopia, in 2022.

**Methods and materials:** A community-based, unmatched case-control study was conducted among 690 randomly selected households (345 cases and 345 controls) in the West Guji Zone from 15 April to 15 June 2022. Data were collected via a pretested and structured face-to-face interviewer-administered questionnaire. The data were entered into EpiData 3.1 and analyzed via SPSS Version 26. Bivariate and multivariate binary logistic regression models were used to identify the determinants of enrolment decisions in community-based health insurance. An adjusted odds ratio (AOR) with a 95% confidence interval and  $p$ -value  $<0.05$  was used to declare statistically significant associations.

**Results:** The findings of this study revealed that factors such as no formal education (AOR = 2.885, 95% CI: 1.252, 6.648), negative perception (AOR = 0.067, 95% CI: 0.040, 0.112), poor and middle wealth index (AOR = 0.307, 95% CI: 0.166, 0.569), community solidarity practices (AOR = 4.266, 95% CI: 2.352, 7.736), trust in the CBHI scheme (AOR = 4.782, 95% CI: 2.926, 7.816), quality of service (AOR = 2.209, 95% CI: 1.324, 3.687), availability of prescribed drugs (AOR = 1.829, 95% CI: 1.102, 3.035), and satisfaction with services (AOR = 3.209, 95% CI: 1.937, 5.315) were identified as significant determinants of CBHI enrolment decisions.

**Conclusion:** This study revealed that a lack of formal education, negative perceptions, and a lower wealth index negatively impact CBHI enrolment. However, community solidarity practices, trust, quality of service, availability of prescribed drugs, and satisfaction positively influence CBHI enrolment. This study highlights the need for targeted interventions to increase community awareness, foster community solidarity at the local level, increase trust in the health system, and increase the affordability of premiums, thereby promoting community-based health insurance enrolment and achieving universal health coverage in Ethiopia.

## KEYWORDS

community-based health insurance, decision, determinants, enrolment, West Guji, southern Ethiopia

## 1 Introduction

It is rightly said that health is wealth (1). An individual's and society's health are severely impacted by excess out-of-pocket (OOP) payments, changing lifestyle patterns, and the unaffordability of medical-related services (2). This leads to a variety of illnesses and diseases, and since the expense of treating these illnesses is increasing quickly, it is vital to invest in community-based health insurance (CBHI) to protect the local community from excessive medical expenses (3).

Globally, there is an enormous mismatch between countries' health financing needs and health spending (4). Approximately 11.7% of the world's population faces catastrophic health expenditure, while 25 million households are impoverished because of direct healthcare payments (5). Every year, more than 150 million individuals in Africa face high healthcare costs, with the majority of these treatment seekers living in poverty as a result of out-of-pocket payments (6).

In addition, low- and middle-income countries (LMICs) have developed alternative health financing strategies for out-of-pocket expenses to protect their population from catastrophic health service expenditure (7, 8). More importantly, as a community health financing mechanism, CBHI seems more appropriate for LMICs where governments have limited fiscal space and overreliance on OOP spending (9). Over 90% of healthcare financial difficulties and their consequences have occurred in sub-Saharan African countries, where resources are limited (10).

CBHI has emerged as a context-appropriate risk-pooling mechanism to provide some financial protection to populations without access to formal health insurance and as an emerging strategy for providing financial protection against health-related poverty (11). The CBHI decouples the time of payment from the time of use of services, which is relevant for rural households because of seasonal variations in their incomes and provides access to healthcare with financial risk protection (12).

Henceforth, CBHI has gained popularity as a makeshift health financing mechanism for OOP payments in poor communities by combining resources and risk at the individual and community levels (13).

Ethiopia, a sub-Saharan African country, has many difficulties in delivering affordable healthcare to its citizens, as people lack access to needed medical services, medications, and pharmaceutical supplies (13). One national report in Ethiopia showed that only 48% of households are enrolled in pilot schemes, with large variations within and between districts. This percentage ranges from as low as 25% in Deder and as high as 100% (universal enrolment) in Yirgalem (14, 15).

The Ethiopian government set goals for 2020 to achieve CBHI schemes, aiming to have 80% of districts and 80% of households enrolled to reduce OOP health expenditure to less than 15% and increase general government expenditure on health (GGE) as a share of total GGE from 6% to 10%; nevertheless, these ambitious targets were not attained (16). In addition, demonstrating the existing regional variation, the 2019 Ethiopian Mini Demographic and Health Survey (EMDHS) results suggest that 28% of households were enrolled in community-based

health insurance, rural households (32%) were more likely to be enrolled than urban households (19%), and at the population level, three out of 10 Ethiopians (28%) were enrolled, whereas 72% were not (17). In general, many studies suggest that the magnitude of enrolment in this country is low (18).

In recent years, the Ethiopian government has made efforts to improve healthcare accessibility and affordability through the implementation of CBHI schemes (19). However, the uptake and enrolment rates in these schemes remain low, hindering the achievement of universal health coverage (20).

Despite the low enrolment rate, little is known about the factors that influence CBHI enrollment decisions. In addition, the available data on this limited coverage have identified the factors that discourage the enrolment of households (21). A review of the literature also revealed a methodological gap; to our knowledge, no similar study has been conducted in the study area in the West Guji Zone in Ethiopia. The objective of this study was to assess the determinants of the decision to enroll in community-based health insurance in households in the West Guji Zone, southern Ethiopia, in 2022.

## 2 Methods and materials

### 2.1 Study setting

The study was conducted in the West Guji Zone of Oromia, southern Ethiopia. It is 467 km from Addis Ababa on the paved Addis Ababa-Moyale route. The zone is administratively composed of nine districts. The total number of eligible households for CBHI was estimated to be 219,017, and the number of those enrolled in CBHI schemes was only 23,745, according to the West Guji Zone Health Office report of 30 March 2022. The health facilities in the zone include approximately 196 health posts, 42 health centers, three primary hospitals, and one comprehensive specialized hospital.

### 2.2 Study design and period

The community-based unmatched case-control study design was conducted from 15 April to 15 June 2022.

### 2.3 Source and study population

All households in the West Guji Zone were the source population, whereas randomly selected households in the selected kebeles (i.e., the smallest administrative unit in Ethiopia) in the West Guji Zone during the data collection period composed the study population. Households that registered and renewed their membership in the CBHI for 2022 and households not registered for the CBHI were included in the study as cases and controls, respectively. Those for which the government covers their CBHI enrolment payment and critical illnesses were excluded from the study.

## 2.4 Sample size determination and sampling procedure

The double population proportion formula using Epi Info version 7.0.8.3 was used to determine the sample size via the following assumption: at the 95% confidence level, a power of 80% was used. The ratio of controls to cases ( $r$ ) was 1, adjusted odds ratio (AOR) = 2.2, the percentage of controls exposed (P1) was 17.2, and the percentage of cases exposed (P2) was 29.5% (22). Considering the design effect (DEFF = 2) and the possible non-response rate of 10%, a sample size of 690 (345 cases and 345 controls) households was included in the study.

The study participants were drawn via a multistage sampling technique. In the first stage, three districts were chosen at random (lottery method) from among the nine districts (accounting for 30% of the districts located in the West Guji Zone). In the second stage, 21 kebeles were selected at random (lottery method) from 65 kebeles. A list of households to be enrolled as cases from the CBHI membership register and a list of households to be enrolled as controls were subsequently obtained from each kebele's administration household record list. The sample size was then proportionally allocated for selected kebeles on the basis of the number of households enrolled and not enrolled in the CBHI in each kebele. Finally, the cases and controls were selected via systematic sampling techniques.

## 2.5 Data collection procedures and quality assurance

Data collection tools were adapted by reviewing the literature and manuals from prior studies (22–24). The questionnaire was prepared in English, then translated to the regional language “Afaan Oromo” by fluent speakers of both languages, and then translated back to English to maintain the consistency of the questionnaire. Four BSc-holding nurses and two BSc-holding public health officers participated as the data collectors and supervisors, respectively. The data collectors used pretested, structured, face-to-face interviewer-administered questionnaires.

The supervisors oversaw and guided the data collectors during the data collection process by checking the completeness of the required data and correcting errors in the field.

To maintain the quality of the data, a pretest was conducted on 5% of the sample size in other kebeles in the Galana District in the source population. Training was given to the data collectors and supervisors over 2 days. Before the data collection, the consistency, coherence, and time to complete the questionnaire to be checked.

## 2.6 Data processing and analysis

The data were entered into EpiData 3.1, and SPSS version 26 was used for the analysis. Inconsistent and missing values were checked in the data. Descriptive statistics were used to

characterize the study's aims using relevant variables. Bivariate and multivariate binary logistic regression models were used to determine the determinants of enrolment in the CBHI.

Variables with a  $p$ -value of  $\leq 0.25$  in the bivariable logistic regression analysis were entered and further computed in a multivariate binary logistic regression model to control for confounding variables. The assumptions of model fitness and multicollinearity between independent variables were assessed via the Hosmer–Lemeshow test statistic and a variance inflation factor  $< 10$ , respectively. The reliability analysis was conducted via Cronbach's alpha, which was found to be 0.86. This indicates a high level of internal consistency among the items, suggesting that the measurement tool reliably reflects the construct being evaluated. Odds ratios (ORs) with 95% CIs and  $p$ -values  $< 0.05$  were considered statistically significant determinants.

## 2.7 Study variables and operational definitions

The dependent variable for the study was the enrolment decision in the CBHI, and the explanatory variables are as follows:

*Sociodemographic and economic characteristics of the household:* age, sex, religion, ethnicity, marital status, educational status, occupational status, family size, source of income, and wealth index.

*Scheme-related factors:* having information about CBHI, time waiting for a CBHI service card after paying, year-based payment without services, high payment compared with OOP, convenience of premium collection time, accidental change in rules, no trust in scheme management, and inappropriate use of service cards.

*Medical/health-related factors:* waiting time, poor service in governmental institutions, chronic illness in the family, satisfaction with service in the nearby facility, and drug availability.

*Cases:* households that registered with community-based health insurance and renewed their membership in 2022.

*Controls:* households that were not registered with community-based health insurance until 2022.

*Knowledge of the CBHI:* The participants' knowledge of CBHI was assessed via five questions that included the concepts, roles, and beneficiaries of the CBHI. The participants who answered these questions correctly were categorized as having a correct response, whereas those who answered incorrectly were classified as having an incorrect response. Participants who responded “I do not know” were also included in a separate category. Each question carried equal weight, with a score of 1 assigned to each correct response, a score of 2 for each incorrect response, and a score of 0 for “I do not know” responses. Consequently, the aggregate score for all the knowledge questions ranged from 0 to 5 points. Participants' overall knowledge was considered “good” if they scored 4 or 5 (representing  $\geq 70\%$  of the points) and otherwise labeled “poor” (18).

*Perception of study participants toward the CBHI scheme:* The perception of the study participants toward the CBHI scheme refers to an individual's or household's beliefs, opinions, and views regarding the CBHI scheme's effectiveness in providing financial protection against healthcare costs (6). Participants were asked to express their opinions in four perception tools via a five-point Likert scale ranging from "1 strongly disagree" to "5 strongly agree." To rank the tools on the basis of relative importance, the minimum attainable score was first determined. The maximum attainable score for each grade in the scale was subsequently calculated by multiplying the minimum attainable score (4) by the corresponding grades (1, 2, 3, 4, and 5). Finally, respondents with scores greater than the median were classified as having positive perceptions, whereas those with scores lower than the median were categorized as having negative perceptions (22).

Equb is a rotating savings and credit association where members contribute a fixed amount of money regularly, and the collected funds are then distributed to each member in turn, providing a mechanism for savings and access to credit (25).

Edir is a traditional, informal, community-based institution that offers financial and social support, primarily serving as a form of social insurance and mutual aid, particularly for members' families in the event of death (25).

## 3 Results

### 3.1 Sociodemographic characteristics of the study participants

In this study, a total of 345 cases and 345 controls participated, with a response rate of 100% for both groups. The mean age of the respondents for the cases was 39.7 years, with a standard deviation (SD) of  $\pm 7.859$ , and for the controls, it was 39.83 years, with an SD of  $\pm 7.435$ . With respect to the wealth index of the households, a comparable number of poor households were found among both the cases and the controls, with 127 (36.8%) and 145 (42%), respectively. In terms of education, approximately 162 (47%) of the respondents in the case group had formal education, whereas 28 (8.1%) respondents in the cases and 44 (12.8%) respondents in the controls had only completed education above the secondary level. In addition, approximately 151 (43.8%) case and 118 (34.2%) control households took less than 1 h to reach the nearby health institution. Furthermore, the majority of households practiced mixed types of agriculture (Supplementary Table S1).

### 3.2 Perception of the CBHI in households

In this study, a significantly greater proportion of cases (145, 42%) than controls (57, 16.5%) agreed with the statement that CBHI management is trustworthy. Moreover, the quality of

service provided by the CBHI was reported to be satisfactory by a greater number of cases (179, 51.9%) than by the controls (73, 21.2%) (Supplementary Table S2).

### 3.3 Medical and health-related characteristics of the respondents

Concerning medical and health-related factors, comparable households had a non-communicable disease prevalence of 37.1% (128) among the cases and 42.3% (146) among the control group. With respect to the availability of prescribed essential drugs, 260 (75.4%) cases and 163 (47.2%) controls received service provision. With respect to satisfaction with the CBHI service, 260 (75%) cases and 163 (36.5%) controls reported that they were satisfied with the CBHI services (Supplementary Table S3).

### 3.4 Determinants of the decision to enroll in CBHI schemes

In the bivariable analysis, variables were found to be significant at a  $p$ -value  $< 0.25$  with a 95% confidence interval and were further analyzed in a multivariable binary logistic regression model to control for confounders and determine the effect of each independent variable on the likelihood of CBHI enrolment. According to the final multivariable logistic regression analysis, several factors were significantly associated with the decision to enroll in the CBHI.

Individuals with no formal education had approximately three times greater odds of enrolling in CBHI than those with above-secondary-level education (AOR = 3, 95% CI: 1.25–6.64). Household heads with a negative perception of the CBHI had 94% lower odds of enrolling than their counterparts did (AOR = 0.06, 95% CI: 0.04–0.11). Furthermore, households in the poor wealth quintile (AOR = 0.31, 95% CI: 0.16–0.56) and middle wealth quintile (AOR = 0.44, 95% CI: 0.22–0.84) were 69% and 56% less likely to enroll in the CBHI, respectively, than those in the rich wealth quintile. Compared with non-participants, respondents who participated in local solidarity practices (Equb and Edir) were four times more likely to enroll in CBHI (AOR = 4.26, 95% CI: 2.35–7.73). In addition, households that had trust in the CBHI scheme's management had nearly five times higher odds of enrolling (AOR = 4.78, 95% CI: 2.92–7.81) than did those without trust. The respondents who rated the quality of CBHI service provision as good had two times greater odds of enrolling (AOR = 2.20, 95% CI: 1.32–3.68) than those who rated it as poor. Moreover, the odds of enrolment in CBHI were nearly two times greater among household heads who had access to prescribed drugs (AOR = 1.83, 95% CI: 1.10–3.03). Finally, respondents who expressed satisfaction with CBHI services were three times more likely to enroll (AOR = 3.20, 95% CI: 1.93–5.31) than their counterparts were (Supplementary Table S4).

## 4 Discussion

The objective of this study was to identify the determinants influencing households' enrolment decisions in the CBHI scheme among households in the West Guji Zone, southern Ethiopia. These determinants include factors such as the perception of households toward the CBHI, absence of formal education, and participation of communities belonging to poor and middle-wealth quintiles in solidarity practices, trust in the CBHI scheme, quality of service, availability of prescribed drugs, and satisfaction with the services provided by the CBHI packages.

In this study, the odds of deciding to enroll in CBHI were 93.3% lower among household heads who had a negative perception of the CBHI scheme than among their counterparts. This finding is consistent with a study conducted in the Armachiho district, North China (22); a pilot study on the evaluation of the CBHI performed nationally in Ethiopia (26); and a study performed in rural Burkina Faso (27). This similarity might be due to the methodological and socioeconomic characteristics of the community. This implies that a negative perception of CBHI blocks the uptake of the service and utilization of the service and exposes the community to OOP expenses (28).

In this study, participating in local solidarity practices (Equb or Edir) increased the odds of enrolling in the CBHI. This result is consistent with different studies performed in the Jimma Zone and West Gojjam Zone in the Sidama Region and a pilot study on the evaluation of CBHI performed nationally across Ethiopia and Senegal (29–32). The similarities are due to the study methods and sociocultural characteristics of the community, which imply that the community practices are related to solidarity practices in their settings.

This study revealed that respondents who had no formal education had greater odds of deciding to enroll in CBHI than did respondents who had above-secondary educational status. This finding is constrained by studies conducted in Gida Ayana, western Ethiopia (23); the Boricha District in the Sidama Regional State, Ethiopia (10); and the Southern Nations, Nationalities, and Peoples' Region (SNNPR) in Ethiopia (33). This implies that efforts to increase enrolment in CBHI need to address the problem of communities with lower socioeconomic status. Likewise, individuals with a higher educational status may not be eligible for CBHI because of their employability and the low quality of CBHI services.

In addition, this study revealed that households with poor and middle-wealth statuses were less likely to enroll in the CBHI scheme than those with the richest status. This result is inconsistent with different studies conducted in Ethiopia (23, 31, 32). The reason behind the inconsistency may be the difference in the study setting, methodological differences, and pressure from CBHI officials. This finding shows that CBHI membership is based on the activity of officials and that the community may consider it a valueless scheme. Moreover, CBHI membership is mandatory for the informal sector of society.

This study also reveals that the odds of deciding to enroll in the CBHI were greater among households that had trust in the scheme.

This finding is in line with studies performed in different settings in Ethiopia (10, 22). This is due to the study design used and the sociodemographic and economic characteristics of the society, which implies that the management system of the CBHI program is weak, and it offers a low quality of service. Furthermore, respondents who rated the quality of CBHI schemes as good were more likely to enroll in the CBHI. This finding is consistent with studies conducted in Ethiopia (22, 34). This might be due to methodological and health infrastructure-related similarities. This indicates that there is better enrollment if full packages of health services are provided by corporations to solve the health problems of communities.

Furthermore, households that received essential drug provision were more likely to decide to enroll in CBHI. This study is in line with a study conducted in Ethiopia (34, 35). This similarity is also due to the poor health infrastructure that the health facility serves above its catchment area. This implies poor delivery of prescribed drugs, which prevents the community from enrolling in CBHI. On the other hand, respondents who were satisfied with the CBHI scheme service had higher odds of enrolling in CBHI. This result was consistent with different studies performed in Ethiopia (10, 34). This is due to socioeconomic similarity and the fact that they share common cultural practices.

This study has both strengths and limitations. The strengths of this study include the use of a community-based methodology to identify the socioeconomic, demographic, and health-related aspects that determine enrolment decisions in CBHI. The results of this study also have the potential to significantly advance the body of knowledge in this area and offer insightful information to national stakeholders and policymakers. Importantly, the study was limited to a particular area in Ethiopia, which may limit the applicability of the conclusions. The respondents were asked to recall details about their choice to enroll in CBHI, which increases the likelihood of recall bias.

## 5 Conclusion

The results of this thorough study offer convincing evidence of the important aspects that strongly influence people's decisions to sign up for CBHI. The findings highlight the crucial role that formal education, perception, wealth index, community solidarity practices, trust in the CBHI scheme, quality of service, accessibility of necessary medications, and satisfaction with services play as key drivers of CBHI enrolment. Access to health insurance can be significantly enhanced by addressing and prioritizing advancements in education, perception, affordability, community involvement, trust, and service quality, which will ultimately result in better healthcare results overall. This study demonstrates the need for targeted interventions to improve community awareness, trust in the health system, and affordability of premiums. Strengthening community engagement, addressing service quality concerns, and improving accessibility can enhance enrolment in community-based health insurance and contribute to achieving universal health coverage in Ethiopia.

## Data availability statement

The raw data supporting the findings of this study is available without undue reservation upon reasonable request from the corresponding author.

## Ethics statement

The studies involving humans were approved by the Abinet Bekele Elema Bule Hora University Institutional Review Board. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

## Author contributions

GW: Conceptualization, Methodology, Supervision, Writing – original draft, Writing – review & editing. MG: Methodology, Resources, Writing – review & editing. AF: Conceptualization, Data curation, Formal analysis, Writing – original draft, Writing – review & editing. GT: Data curation, Investigation, Supervision, Validation, Writing – review & editing.

## Funding

The author(s) declare that financial support was received for the research and/or publication of this article. Bule Hora University funded the research (Grant ID: BHU/RPD/897/14). The funding institution was not involved in the study design, data collection, analysis, decision to publish, or development of the manuscript.

## References

1. Pauline OI. Health is wealth: newspaper coverage of the economic impact of COVID-19 in Nigeria. *Libr Philos Pract.* (2021):1–28.
2. Rich DQ, Kipen HM, Huang W, Wang G, Wang Y, Zhu P, et al. Association between changes in air pollution levels during the Beijing Olympics and biomarkers of inflammation and thrombosis in healthy young adults. *JAMA.* (2012) 307(19):2068–78. doi: 10.1001/jama.2012.3488
3. Haileselassie H. *Ethiopia Health Sector Financing Reform/Health Finance and Governance (HSFR/HFG) Project end-of-project Report 2013–2018.* Addis Ababa: St. Mary University Institutional Repository (2018).
4. Abay S, Dibaba A, Gebreyohannes Y, Ararso D, Mengistu F, Hadis M. Improving the health workforce distribution in remote and rural areas of Ethiopia: an evidence-based policy brief. *J Invest Manag.* (2018) 7(2):45–52. doi: 10.11648/jjim.20180702.11
5. Getachew N, Shigut H, Jeldu Edessa G, Yesuf EA. Catastrophic health expenditure and associated factors among households of non-community-based health insurance districts, Ilubabor zone, Oromia regional state, southwest Ethiopia. *Int J Equity Health.* (2023) 22(1):40. doi: 10.1186/s12939-023-01847-0
6. Demissie GD, Atnafu A. Barriers and facilitators of community-based health insurance membership in rural Amhara region, northwest Ethiopia: a qualitative study. *Clinicoecon Outcomes Res.* (2021) 13:343–8. doi: 10.2147/CEOR.S293847
7. Artignan J, Bellanger M. Does community-based health insurance improve access to care in sub-Saharan Africa? A rapid review. *Health Policy Plan.* (2021) 36(4):572–84. doi: 10.1093/heapol/czaa174
8. Ashagrie B, Biks GA, Belew AK. Community-based health insurance membership dropout rate and associated factors in Dera district, northwest Ethiopia. *Risk Manag Healthc Policy.* (2020) 13:2835–44. doi: 10.2147/RMHP.S277804
9. Abebe Z. *The Contribution of Community Based Health Insurance (CBHI) in Improving Access and Utilization of Healthcare Services.* Adea District, East Shoa Zone, Oromia Region, Ethiopia: St. Mary's University (2018).
10. Nageso D, Tefera K, Gutema K. Enrollment in community based health insurance program and the associated factors among households in Boricha district, Sidama zone, southern Ethiopia: a cross-sectional study. *PLoS One.* (2020) 15(6):e0234028. doi: 10.1371/journal.pone.0234028
11. Ethiopian Public Health Institute (EPHI) [Ethiopia] and ICF. *Ethiopia Mini Demographic and Health Survey 2019: Final Report.* Rockville, MD: EPHI and ICF (2021).
12. Bantie GM, Woya AA, Zewdie BM. Community-based health insurance and associated factors in north-western Ethiopia. The case of Bahir Dar city. *Int J Gen Med.* (2020) 13:1207–17. doi: 10.2147/IJGM.S264337

## Acknowledgments

We want to express our sincere gratitude to the Bule Hora University Institute of Health for allowing us to conduct this study and for kindly covering the fees related to data enumeration. We also want to express our gratitude to the hardworking data collectors, supervisors, and study participants for their cooperation and unshakable dedication to the accomplishment of this research project.

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## Generative AI statement

The author(s) declare that no Generative AI was used in the creation of this manuscript.

## Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

## Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/frhs.2025.1559578/full#supplementary-material>

13. Ranson MK. Reduction of catastrophic health care expenditures by a community-based health insurance scheme in Gujarat, India: current experiences and challenges. *Bull W H O.* (2002) 80:613–21.
14. Mulat AK, Mao W, Bharali I, Balkew RB, Yamey G. Scaling up community-based health insurance in Ethiopia: a qualitative study of the benefits and challenges. *BMC Health Serv Res.* (2022) 22(1):1–12. doi: 10.1186/s12913-022-07889-4
15. Demissie B, Negeri KG. Effect of community-based health insurance on utilization of outpatient health care services in southern Ethiopia: a comparative cross-sectional study. *Risk Manag Healthc Policy.* (2020) 13:141. doi: 10.2147/RMHP.S215836
16. Ministry of Health, Federal Democratic Republic of Ethiopia. *HSTP: Health Sector Transformation Plan 2015/16 – 2019/20 (2008–2012 EFY)*. Addis Ababa: Ethiopian Ministry of Health (2015). Available at: <https://www.medbox.org/document/ethiopia-health-sector-transformation-plan-201516-201920-2008-2012-efy> (Accessed March 07, 2025).
17. Ethiopian Public Health Institute – EPHI, Federal Ministry of Health – FMOH, and ICF. *Ethiopia Mini Demographic and Health Survey 2019*. Addis Ababa: EPHI/FMOH/ICF (2021).
18. Abdilwohab MG, Abebo ZH, Godana W, Ajema D, Yihune M, Hassen H. Factors affecting enrollment status of households for community based health insurance in a resource-limited peripheral area in southern Ethiopia. Mixed method. *PLoS One.* (2021) 16(1):e0245952. doi: 10.1371/journal.pone.0245952
19. Kaso AW, Haji A, Hareru HE, Hailu A. Is Ethiopian community-based health insurance affordable? Willingness to pay analysis among households in south central, Ethiopia. *PLoS One.* (2022) 17(10):e0276856. doi: 10.1371/journal.pone.0276856
20. Tefera Y, Ayele A. Community-based health insurance scheme implementation in Ethiopia: a mini-review on the experience and its implementation process. *World Med Health Policy.* (2022) 14:1–3. doi: 10.1002/wmh3.539
21. Workneh SG, Biks GA, Woreta SA. Community-based health insurance and communities' scheme requirement compliance in Thehuldere district, northeast Ethiopia: cross-sectional community-based study. *Clinico Economics and Outcomes Research: CEOR.* (2017) 9:353–9. doi: 10.2147/CEOR.S136508
22. Chanie MG, Ewunetie GE. Determinants of enrollment in community based health insurance among households in Tach-Armachiho Woreda, North Gondar, Ethiopia, 2019. *PLoS One.* (2020) 15(8):e0236027. doi: 10.1371/journal.pone.0236027
23. Fite MB, Roba KT, Merga BT, Tefera BN, Beha GA, Gurmessa TT. Factors associated with enrollment for community-based health insurance scheme in western Ethiopia: case-control study. *PLoS One.* (2021) 16(6):e0252303. doi: 10.1371/journal.pone.0252303
24. Tadesse G, Atnafu DD, Ketemaw A, Alemu Y. Determinants of enrollment decision in the community-based health insurance, north west Ethiopia: a case-control study. *Global Health.* (2020) 16(1):1–9. doi: 10.1186/s12992-019-0535-1
25. Kayranto A. Role of Equb in financing micro and small business enterprises in Konso. *Univ J Account Finance.* (2017) 5:1–8. doi: 10.13189/ujaf.2017.050101
26. Berman P, Mann C, Ricculi M-L. Can Ethiopia finance the continued development of its primary health care system if external resources decline? *Health Syst Reform.* (2018) 4(3):227–38. doi: 10.1080/23288604.2018.1448240
27. De Allegri M, Kouyaté B, Becher H, Gbangou A, Pokhrel S, Sanon M, et al. Understanding enrolment in community health insurance in sub-Saharan Africa: a population-based case-control study in rural Burkina Faso. *Bull W H O.* (2006) 84:852–8. doi: 10.2471/BLT.06.031336
28. Panda P, Dror I, Perez Koehlmoos T, Shahed Hossain S, John D, Khan J, et al. What factors affect take up of voluntary and community-based health insurance programmes in low-and middle-income countries? *Protocol.* (2013) :2–5. doi: 10.2139/ssrn.2656059
29. Mladovsky P, Ndiaye P, Ndiaye A, Criel B. The impact of stakeholder values and power relations on community-based health insurance coverage: qualitative evidence from three Senegalese case studies. *Health Policy Plan.* (2015) 30(6):768–81. doi: 10.1093/heapol/czu054
30. Garedew MG, Sinkie SO, Handalo DM, Salgado WB, Yitebarek Kehali K, Kebene FG, et al. Willingness to join and pay for community-based health insurance among rural households of selected districts of Jimma zone, southwest Ethiopia. *Clinicoecon Outcomes Res.* (2020) 12:45–55. doi: 10.2147/CEOR.S227934
31. Mirach TH, Demissie GD, Biks GA. Determinants of community-based health insurance implementation in West Gojjam zone, northwest Ethiopia: a community based cross sectional study design. *BMC Health Serv Res.* (2019) 19(1):1–8. doi: 10.1186/s12913-019-4363-z
32. Yitayew MY, Adem MH, Tibebe NS. Willingness to enroll for community-based health insurance and associated factors in Simada district, north-west, Ethiopia, 2020: a community-based cross-sectional study. *Risk Manag Healthc Policy.* (2020) 13:3031–8. doi: 10.2147/RMHP.S280685
33. Gebru T, Lentiro K. The impact of community-based health insurance on health-related quality of life and associated factors in Ethiopia: a comparative cross-sectional study. *Health Qual Life Outcomes.* (2018) 16(1):1–6. doi: 10.1186/s12955-018-0946-3
34. Shigute Z, Mebratie AD, Sparrow R, Alemu G, Bedi AS. The effect of Ethiopia's community-based health insurance scheme on revenues and quality of care. *Int J Environ Res Public Health.* (2020) 17(22):8558. doi: 10.3390/ijerph17228558
35. Hailie MT, Hassen SL, Temesgen MM. Client satisfaction on community based health insurance scheme and associated factors at Boru Meda hospital, northeast, Ethiopia: institutional based cross-sectional study. *BMC Health Serv Res.* (2021) 21:1–8. doi: 10.1186/s12913-021-07223-4