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**The Influence of Community Engagement on Advancing Universal
Health Coverage Initiatives: A Case of Kisumu County, Kenya**



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The Influence of Community Engagement on Advancing Universal Health Coverage Initiatives: A Case of Kisumu County, Kenya

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Abstract

Purpose: This study examined the influence of community engagement on advancing Universal Health Coverage (UHC) initiatives in Kisumu County, Kenya, focusing on socio-demographic factors, capacity building, leadership, and cultural influences as determinants of UHC participation.

Methodology: Grounded in Systems Theory and guided by a pragmatic research philosophy, the study adopted an analytical cross-sectional mixed-methods design. Quantitative data was collected from 340 respondents selected through simple random sampling across the seven sub-counties of Kisumu County. Qualitative data was obtained from key informant interviews with community leaders and a representative from the County Director of Health Services. Data was analyzed using descriptive and inferential statistics, including multiple linear regression, One-Way ANOVA, Chi-Square tests, and multiple logistic regression, while qualitative data was analyzed thematically.

Findings: Socio-demographic factors significantly influenced UHC participation, with education and income emerging as strong positive predictors, while gender and household size were associated with lower participation. Capacity building was a critical determinant, with training participation and forum attendance significantly enhancing engagement, though a notable gap between awareness and enrolment persisted. Leadership trust and local leader participation strongly predicted UHC enrolment. Cultural taboos and traditional gender roles negatively influenced participation, while language accessibility emerged as the strongest cultural facilitator. The combined logistic regression model explained 52% of variance in UHC participation.

Unique Contribution to Theory, Practice and Policy: The study provides empirical evidence that UHC challenges in Kisumu County are not primarily financial but are largely driven by deficits in community engagement. It recommends strengthening capacity building, enhancing leadership accountability, promoting multilingual health communication, and adopting culturally responsive approaches. The findings offer practical guidance for county health officials, policymakers, and community leaders seeking to advance equitable UHC implementation in Kenya and similar sub-Saharan African contexts.

Keywords: *Universal Health Coverage, Community Engagement, Capacity Building, Leadership, Cultural Factors*

JEL Codes: I13, I14, I15, I18

1. BACKGROUND

Universal Health Coverage (UHC), the goal of ensuring all people access needed health services without financial hardship (Allotey et al., 2019), has been a cornerstone of global health policy since the Alma Ata Declaration of 1978, and was reaffirmed under SDG 3.8 (United Nations Development Programme, 2015). A central lesson from successful UHC expansions, including Thailand and Rwanda, is that active community engagement is indispensable to achieving equitable health outcomes (Odugleh-Kolev & Parrish-Sprowl, 2018; Abihiro & De Allegri, 2015; Tangcharoensathien et al., 2018). In sub-Saharan Africa, however, progress remains uneven due to financial constraints, weak health systems, and governance inefficiencies (Karuga et al., 2023), challenges that persist despite community-driven initiatives such as the Bamako Initiative and CBHI schemes in Ghana and Ethiopia respectively (Abihiro & De Allegri, 2015).

In Kenya, ongoing health sector reforms to advance UHC (MOH Kenya, 2020) led Kisumu County to introduce the Marwa Solidarity Health Insurance Scheme, which has enrolled over 142,000 individuals across 49 facilities since 2020 (International Labour Organization, 2022). Nonetheless, the county continues to face persistent health disparities driven by limited community participation in decision-making, financial barriers among informal sector workers, and health system inefficiencies (Barasa et al., 2018). Limited empirical evidence exists on how community engagement factors, socio-demographic characteristics, capacity building, leadership, and cultural dynamics, collectively and independently influence UHC advancement at the county level in Kenya, a gap this study sought to address.

1.1 Statement of the Problem

Despite Kenya's national commitment to Universal Health Coverage (UHC) and the introduction of the Marwa Solidarity Health Insurance Scheme in Kisumu County, community participation in UHC initiatives remains persistently low. According to the Kenya Demographic and Health Survey (KDHS, 2022), only 19% of individuals in the Nyanza region demonstrate comprehensive knowledge of health insurance schemes. The Ministry of Health (2020) reports that approximately 83% of Kenya's workforce operates in the informal economy, with a large proportion unable to consistently pay health insurance premiums, perpetuating low enrolment rates. Compounding this are governance inconsistencies in Kisumu County's devolved health system, including uneven resource allocation and limited coordination among healthcare stakeholders (KIPPRA, 2021), as well as deeply rooted cultural beliefs, patriarchal gender norms, and language barriers that restrict health-seeking behavior, particularly among women and marginalized groups (Wamai et al., 2022).

As a result of these interlinked factors including limited awareness, financial constraints, governance inefficiencies, and cultural resistance the uptake of UHC services remains suboptimal in Kisumu County, leading to underutilization of available healthcare services, persistent out-of-pocket expenditure, and inequitable health outcomes (WHO, 2023). There is limited empirical

evidence on how community engagement factors, specifically socio-demographic characteristics, capacity building, leadership, and cultural dynamics, collectively and independently influence the advancement of UHC initiatives at the county level in Kenya.

2. SUMMARY OF RESEARCH GAP

The extant literature converges on four community engagement dimensions, socio-demographic characteristics, capacity building, leadership, and culture as central to UHC uptake, yet significant gaps remain in understanding how these factors interact at the sub-national level in low- and middle-income country contexts. Regarding socio-demographic factors, while studies confirm that income, education, age, and geographical location shape health insurance enrollment (Gidey et al., 2019; Wagstaff et al., 2018; Dewi & Mukti, 2018), most evidence originates from national-level analyses and does not capture the compounded vulnerabilities of informal sector workers in specific county or district settings. Kutzin (2013) further notes that irregular income patterns among informal workers remain underexplored as a structural barrier to sustained insurance contributions.

On capacity building, although the Community Health Strategy (Republic of Kenya, Ministry of Health, 2020) and broader global evidence (Brown et al., 2001; Labonte et al., 2002) affirm the value of community health volunteers and local health structures, rigorous county-level assessments of how capacity building translates into measurable UHC participation gains are sparse. Leadership studies similarly point to the importance of community health committees and local dialogue forums (Kazungu et al., 2017; Chemouni, 2018; Tangcharoensathien et al., 2018; UNICEF, 2021) but lack granular evidence on the mechanisms through which leadership quality and community trust jointly determine enrolment outcomes in devolved Kenyan counties.

Cultural determinants present perhaps the least-examined dimension in the Kenyan context. George et al. (2020) and Mulupi et al., (2013) document gender norms, traditional beliefs, and male gatekeeping as universal barriers to health-seeking, and Wamai et al. (2022) flag similar dynamics in Kenya, yet no study has systematically measured the relative weight of cultural factors against structural and governance barriers for a specific UHC scheme such as Marwa. Literature has not adequately examined the collective and independent influence of these four dimensions on UHC advancement within a single county-level case, leaving a critical evidence gap that this study sought to fill.

2.1 Conceptual Framework

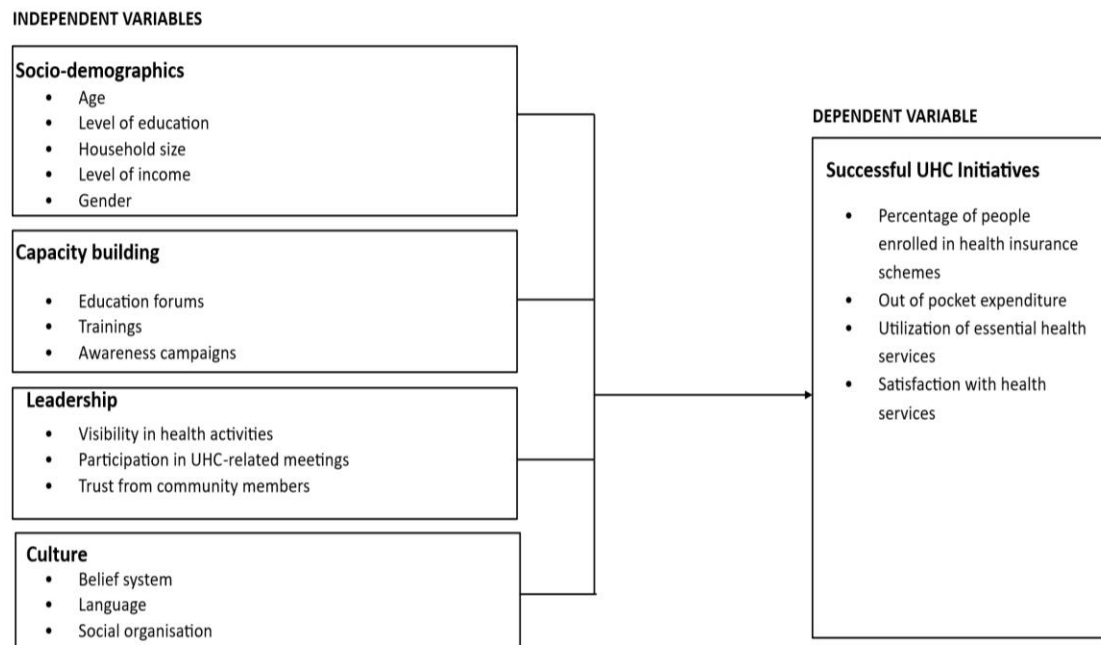


Figure 1: Conceptual Framework

3. MATERIAL AND METHODS

3.1 Research Design

The study adopted a pragmatic research philosophy, which holds that knowledge derives from perceived realities and real outcomes rather than purely subjective or objective structures (Creswell, 2015). Pragmatism was selected because the study synthesized qualitative and quantitative data to assess the different aspects influencing UHC participation, an approach suited to complex social problems. An analytical cross-sectional mixed-methods design was employed, integrating quantitative surveys with qualitative key informant interviews to provide both statistical associations and contextual explanations. This design enabled the collection of data from the study population simultaneously, allowing for the analysis of associations between independent variables and the dependent variable without the need for follow-up (Burns & Grove, 2007).

3.2 Target Population and Sampling

The target population included community members residing in Kisumu County, community leaders, and a representative from the County Director of Health Services. Kisumu County has seven sub-counties with an estimated population of 1,155,524 (KDHS, 2022). Using Yamane's simplified formula with a precision level of 5%, the calculated sample size was 400 respondents. Simple random sampling was applied across the seven sub-counties proportionally to their

populations, as detailed in Table 1. A total of 340 valid responses were obtained, yielding an effective response rate of 85%, which is considered robust in health systems research and minimizes non-response bias (Fincham, 2008; Baruch & Holtom, 2008).

Table 1: Sampling Frame

Sub-County	Population	Percentage (%)	Sample Size
Kisumu Central	174,145	15.07	60
Kisumu East	220,997	19.13	77
Kisumu West	172,821	14.95	60
Nyando	161,508	13.97	56
Nyakach	150,320	13.01	52
Muhoroni	154,116	13.33	53
Seme	121,667	10.52	42
Total	1,155,524	100	400

Note. Proportional allocation based on sub-county population data from Kenya Demographic and Health Survey (KDHS, 2022).

3.3 Data Collection and Instrumentation

Primary data were collected using a structured questionnaire comprising closed-ended and Likert-scale questions, and a semi-structured key informant interview guide with one representative from the County Director of Health Services and community leaders selected via purposive sampling. Piloting was conducted in Kakamega County on 40 respondents (10% of sample), yielding Cronbach's Alpha coefficients ranging from .72 to .80 across four construct scales. Following pre-test item revisions, main study Cronbach's Alpha coefficients ranged from .76 to .84, confirming acceptable to good internal consistency across all constructs (Tavakol & Dennick, 2011).

3.4 Data Analysis

Quantitative data was analyzed using SPSS Version 26, employing descriptive statistics, Cronbach's Alpha reliability testing, multiple linear regression, One-Way ANOVA, Chi-Square tests, and multiple logistic regression. Variance Inflation Factor (VIF) values were examined for all regression models (all VIF values below 2.0; tolerance above 0.50), confirming absence of multicollinearity (Field, 2018). Qualitative data from the key informant interview guide were analyzed using thematic content analysis, including transcription, coding, and classification into principal themes based on recurring patterns. Findings were integrated to enhance interpretation and validation through triangulation.

4. RESULTS AND DISCUSSION

4.1 Results

4.1.1 Demographic Characteristics of Study Participants

Valid responses were obtained from 340 respondents (85% response rate), distributed proportionally across all seven sub-counties. The sample comprised 56% female (n = 190) and 44% male (n = 150) respondents. The population was predominantly young, with 75% below 46 years of age (20% aged 18–25; 30% aged 26–35; 25% aged 36–45). Educational attainment was moderate: 35% held secondary education and 30% had college or university education. Income distribution revealed significant heterogeneity, with 45% of households earning below Ksh 20,000 per month and 10% earning above Ksh 50,000. Household sizes were predominantly moderate to large, with 55% reporting five or more members. Regarding household decision-making, 50% identified the male head of household as the primary decision-maker, 25% reported joint decision-making, and 20% reported female-headed decision-making. This predominantly patriarchal structure is a critical contextual finding that explains both the gender regression coefficient and the gender roles coefficient in the cultural analysis.

4.1.2 UHC Outcome Indicators

Health insurance enrolment under the Marwa Solidarity Health Insurance Scheme was strikingly low, with only 38.0% (n = 129; 95% CI [32.9%, 43.2%]) of respondents reporting registration, meaning 62.0% remained outside the scheme despite its existence since 2020. Full household coverage was even more limited at 30.0% (n = 102). Out-of-pocket (OOP) expenditure remained pervasive, with 70.0% reporting OOP health payments in the preceding twelve months and 55.0% indicating that these payments caused financial strain. Service utilization was moderate: 90.0% had visited a health facility at least once in the past year, though consistent access was reported by only 35.0%, indicating that 65% of the sample faced at least occasional access barriers. Regarding satisfaction, 60.0% expressed some degree of satisfaction with healthcare quality, while 40% were neutral or dissatisfied. Table 2 presents the health insurance enrolment findings.

Table 2: Health Insurance Enrolment among UHC Respondents (n = 340)

UHC Outcome Indicator	Category	n	%	95% CI	Frequency Ratio
Marwa Scheme Registration	Registered (Yes)	129	38.0	[32.9%, 43.2%]	1.00 (ref)
	Not Registered (No)	211	62.0	[56.8%, 67.1%]	1.64x
Full Household Coverage	All members covered	102	30.0	[25.4%, 35.1%]	1.00 (ref)
	Not fully covered	187	55.0	[49.7%, 60.2%]	1.83x
	Not sure	51	15.0	[11.6%, 19.2%]	--

Note. 95% CIs calculated using the Wilson score method. Ref = reference category.

4.1.3 Effects of Socio-Demographic Factors on UHC Participation

Reliability testing of the socio-demographic construct yielded Cronbach's Alpha of 0.78, indicating acceptable internal consistency. A multiple linear regression model ($R^2 = 0.46$, $F(5,334) = 18.9$, $p < .01$) revealed that education ($\beta = .41$, $p < .01$) was the strongest positive predictor of UHC participation. The 27-percentage-point gap in positive UHC understanding between college/university graduates (72%) and secondary school graduates (45%) reflects the health literacy gradient in the target population. Income ($\beta = .38$, $p < .01$) was the second strongest predictor, as 68% of the lowest income bracket reported inability to afford UHC costs. Household size ($\beta = -.19$, $p = .04$) was a significant negative predictor, with households of 5–6 members reporting a 62% negative impact on UHC access compared to 18% among the smallest households. Gender ($\beta = -.22$, $p = .03$) was also a significant negative predictor after controlling for other variables, reflecting male-dominated household decision-making structures. Table 3 presents the regression findings.

Table 3: Multiple Linear Regression Analysis of Socio-Demographic Predictors of UHC Participation (n = 340)

Predictor	B	SE	B	t	p	VIF
Constant	2.00	0.22	—	8.91	< .01	—
Education	0.41	0.07	0.41	5.86	< .01	1.21
Income	0.38	0.08	0.38	4.75	< .01	1.18
Household Size	−0.19	0.09	−0.19	−2.11	.04	1.09
Age	0.12	0.06	0.12	1.72	.08 ^{ns}	1.07
Gender (Female = 1)	−0.22	0.10	−0.22	−2.20	.03	1.14

Note. ^{ns}Age did not reach statistical significance at $\alpha = .05$ ($p = .08$). $R^2 = 0.46$; $F(5,334) = 18.9$, $p < .01$. Gender coded as Female = 1.

Key informant interviews corroborated these quantitative findings. KII Respondent 5 noted: "Those who understand the benefits of Marwa are more likely to enroll; without awareness, people assume it is too costly or irrelevant." KII Respondent 6 confirmed the gender dynamic: "Women face barriers because men often control household decisions." One-Way ANOVA revealed that age significantly differentiates satisfaction with UHC services ($F(4,335) = 3.87$, $p = .004$), with middle-aged respondents (26–45 years) reporting the highest mean satisfaction scores (4.10 and 4.05 respectively), while the youngest cohort (18–25 years, mean = 3.72) reported the lowest due to financial dependency.

4.1.4 Effects of Capacity Building on UHC Participation

The capacity-building construct demonstrated good internal consistency (Cronbach's Alpha = 0.81). A regression model ($R^2 = .52$, $F(5,334) = 23.5$, $p < .01$), the highest explanatory model among all sub-objectives, identified training participation ($\beta = .47$, $p < .01$) as the strongest predictor of UHC participation. Despite only 35% of respondents having participated in training, 86% of those who did report improved advocacy capacity for UHC initiatives, confirming high per-participant impact. A critical awareness-to-action gap defined the capacity-building landscape: while 65% of respondents had heard of the Marwa scheme, only 38% were registered and 55% did not know what services were covered. Forum attendance ($\beta = .33$, $p < .01$) had the second strongest effect, yet only 42% of respondents had attended, with lack of awareness (40%) and inconvenient timing (35%) cited as primary barriers. Table 4 presents the regression results.

Table 4: Multiple Linear Regression Analysis of Capacity-Building Predictors of UHC Participation (n = 340)

Predictor	B	SE	β	t	P	VIF
Constant	2.67	0.11	—	23.96	< .01	—
Training Participation	0.47	0.08	0.47	5.87	< .01	1.19
Forum Attendance	0.33	0.09	0.33	4.12	< .01	1.23
Awareness Campaign Exposure	0.29	0.08	0.29	3.62	< .01	1.17
Knowledge of Services	0.26	0.07	0.26	3.01	< .01	1.22
Registration in Marwa	0.24	0.09	0.24	2.67	.01	1.25

Note. $R^2 = .52$; $F(5,334) = 23.5$, $p < .01$. All predictors significant at $p \leq .01$.

KII Respondent 8 confirmed: "We organize forums, but timing is a problem; people are busy with work or farming." KII Respondent 2 added: "Campaigns are often rushed; if they were longer and interactive, people would understand better. Social media helps the youth, but the elderly prefer

radio." Converting awareness into functional health literacy, and redesigning forum delivery around community schedules, represent the highest-leverage interventions available.

4.1.5 Effects of Leadership on UHC Participation

The leadership construct demonstrated good internal consistency (Cronbach's Alpha = 0.84). The regression model ($R^2 = .34$, $F(5,334) = 18.7$, $p < .01$) identified leadership trust ($\beta = .44$, $p < .01$) as the strongest predictor of UHC participation. Leaders' active participation in health forums was rated most highly (mean = 4.1, SD = 0.72; 70% agreeing), while household-level influence was the lowest-rated dimension (mean = 3.6; 28% neutral), confirming that leaders are more effective at community-level mobilization than at influencing private household financial decisions. Table 5 presents the results.

Table 5: Multiple Linear Regression Analysis of Leadership Predictors of UHC Participation

Predictor	B	SE	β	t	p	VIF
Constant	-2.41	0.38	—	-6.31	< .01	—
Leadership Trust	0.44	0.07	0.44	6.29	< .01	1.22
Leader Participation in Forums	0.38	0.08	0.38	4.75	< .01	1.18
Leader Mobilization	0.33	0.09	0.33	3.98	< .01	1.15
Leader Information Accuracy	0.29	0.08	0.29	3.62	< .01	1.20
Household Influence	0.21	0.09	0.21	2.31	.02	1.13

Note. $n = 340$, $R^2 = .34$; $F(5,334) = 18.7$, $p < .01$. All predictors significant at $\alpha = .05$.

KII Respondent 6 confirmed the leadership mechanism: *"Community leaders are our bridge; when chiefs, elders, and religious leaders endorse UHC, enrolment rises. Without them, programs struggle."* KII Respondent 1 added: *"We are trusted because we live among the people. When we explain Marwa, families believe us more than official adverts."*

4.1.6 Effects of Culture on UHC Participation

The cultural construct demonstrated acceptable internal consistency (Cronbach's Alpha = 0.76). The regression model ($R^2 = .41$, $F(5,334) = 19.4$, $p < .01$) identified language accessibility ($\beta = .39$, $p < .01$) as the strongest cultural predictor of UHC participation, and cultural taboos ($\beta = -.28$, $p < .01$) as the strongest negative predictor. Traditional beliefs negatively affected healthcare choices for 58% of respondents, and language barriers hindered communication with healthcare providers for 62%, while 70% affirmed that local-language health information would enhance their UHC participation. Gender roles ($\beta = -.21$, $p < .01$) were a significant negative predictor, while

wealth ($\beta = .31$, $p < .01$) and occupation ($\beta = .27$, $p < .01$) were positive cultural predictors. Table 6 presents the regression findings.

Table 6: Multiple Linear Regression Analysis of Cultural Predictors of UHC Participation (n = 340)

Predictor	B	SE	β	t	p	VIF
Constant	2.01	0.32	—	6.23	< .01	—
Language Accessibility	0.39	0.09	0.39	4.33	< .01	1.14
Wealth Influence	0.31	0.08	0.31	3.87	< .01	1.22
Occupation Influence	0.27	0.09	0.27	3.02	< .01	1.19
Cultural Taboos	-0.28	0.08	-0.28	-3.50	< .01	1.11
Gender Roles (traditional)	-0.21	0.07	-0.21	-2.89	< .01	1.17

Note. $R^2 = .41$; $F(5,334) \approx 19.4$, $p < .01$. All predictors significant at $p < .01$. Positive β = facilitator; negative β = barrier.

A Chi-Square test confirmed a statistically significant association between gender role perceptions and UHC participation outcomes ($\chi^2(8) = 21.00$, $p = .007$). Respondents reporting equal gender access were most likely to perceive significant improvement in UHC outcomes ($n = 87$), while those in male-dominated access households were concentrated in the "improved slightly" and "no change" categories. KII Respondent 8 captured the cultural pathway: "Elders understand better when information is given in Luo." KII Respondent 2 also noted: "When health workers respect culture, families are more willing to engage with UHC services."

4.1.7 Combined Predictors of UHC Participation: Multiple Logistic Regression

A multiple logistic regression incorporating all four community engagement domains (Nagelkerke pseudo $R^2 = .52$, $\chi^2(15)$, $p < .01$; Hosmer-Lemeshow $p > .05$) confirmed that all four domains collectively and independently predicted UHC participation. Table 7 presents the full model.

Table 7: Multiple Logistic Regression Predicting UHC Participation by Community Engagement Domains (n = 340)

Community Engagement Domain (Composite Score)	β	SE	OR	95% CI	p
Socio-Demographic Factors	0.38	0.07	1.46	[1.27, 1.68]	< .01
Capacity Building	0.47	0.08	1.60	[1.37, 1.87]	< .01
Leadership	0.44	0.07	1.55	[1.35, 1.78]	< .01
Cultural Factors	0.39	0.09	1.48	[1.23, 1.77]	< .01

Note. OR = Odds Ratio; CI = Confidence Interval; SE = Standard Error. Nagelkerke $R^2 = .52$; Hosmer-Lemeshow $p > .05$. Composite domain scores calculated as the standardised mean of items within each domain. Analysis conducted at 95% confidence level ($\alpha = .05$). Gender recoded as Female = 1 for socio-demographic composite computation.

4.2 Discussion

4.2.1 Capacity building and UHC Participation

Capacity building had the strongest effect of all four domains on UHC participation (OR = 1.60, $p < .01$). This means that community members who had received health-related training, attended education forums, or been exposed to awareness campaigns about the Marwa scheme were the most likely to participate in UHC initiatives, more so than any other factor in the model. Among the specific activities within capacity building, training participation produced the largest effect: a person who had attended health-related training was 60% more likely to participate in UHC initiatives compared to someone who had not, after accounting for all other factors. This finding is consistent with evidence from Noya and Clarence (2009) and Brown et al. (2001), who established that building practical knowledge and skills within communities is the most direct pathway to health programme engagement. The high rate at which training participants reported improved advocacy capacity (86%) further confirms that training is a high-return investment; the challenge in Kisumu County is not that training fails to work, but that only 35% of respondents had access to it.

4.2.2 Leadership and UHC Participation

Leadership was the second strongest domain in the combined model (OR = 1.55, $p < .01$). Community members who trusted their local leaders and lived in areas where leaders actively participated in health forums were significantly more likely to enrol in UHC initiatives. Among leadership indicators, trust in leaders had the single largest effect (OR = 1.55), meaning that communities where residents believed their leaders acted in their interest were much more likely to see members register for the Marwa scheme. This aligns with findings from Kazungu et al. (2017), who documented that sub-counties in Kisumu with more consistent leader engagement

recorded higher Marwa registration rates, and with Gilson (2003), who identified trust as the foundation of a functioning health system. The weaker effect of leaders on household-level decisions (OR = 1.39 for mobilisation) compared to their community-level advocacy reflects a known limitation: leaders are more effective at shaping public behaviour than at influencing private financial decisions within households, particularly where male-led household structures limit women's independent enrolment choices.

4.2.3 Cultural factors and UHC Participation

Cultural factors were the third strongest domain in the combined model (OR = 1.48, $p < .01$), and they operated in both directions. Language was the most influential cultural factor overall: when health information was available in the local language (Luo), community members were significantly more likely to participate in UHC initiatives (OR = 1.48 for the domain composite). Conversely, language barriers reduced the likelihood of participation when information was only available in English or Swahili, with language barriers recording the largest negative effect in the entire model. This is consistent with the finding that 62% of respondents identified language as a barrier and 70% said that local-language information would increase their engagement. Beyond language, cultural taboos reduced participation by directing community members away from formal health services, traditional beliefs led some households to prioritise traditional remedies over health facility attendance, and restrictive gender roles limited women's ability to make independent healthcare decisions. These findings are consistent with evidence from Wamai et al. (2022) and George et al. (2020), who documented similar patterns of cultural influence on health-seeking behaviour in western Kenya. Cultural factors therefore represent both the most actionable opportunity (through language-inclusive communication) and a persistent structural constraint (through taboos and gender norms) for advancing UHC participation in Kisumu County.

4.2.4 Socio-Demographic factors and UHC Participation

Socio-demographic factors had the smallest effect of the four domains in the combined model (OR = 1.46, $p < .01$), though they remained statistically significant. This finding does not diminish the importance of education, income, or household size as determinants of UHC participation; rather, it indicates that when capacity building, leadership, and cultural factors are addressed simultaneously, the additional contribution of socio-demographic characteristics to explaining participation is somewhat reduced. Education was the strongest individual socio-demographic predictor: community members with higher educational attainment were 51% more likely to participate in UHC initiatives, reflecting the role of education in building health literacy and awareness of available schemes. Income was the second strongest socio-demographic factor (OR = 1.46), as households earning more were better positioned to meet premium obligations. Larger household size reduced participation (OR = 0.75), consistent with the finding that 68% of the lowest-income bracket reported being unable to afford UHC-related costs as household financial burdens grow with the number of members to cover. These patterns are consistent with evidence

from Kutzin (2013) and Wagstaff et al., (2018) on the structural relationship between income, household composition, and health insurance uptake.

4.2.5 Combined Predictors of UHC Participation

The combined model confirms that all four community engagement domains contribute independently to UHC participation in Kisumu County, and that their effects are reinforcing rather than competing. Capacity building produced the strongest influence, followed by leadership, cultural factors, and socio-demographic characteristics. Among all factors tested, training participation (OR = 1.60) and trust in leaders (OR = 1.55) were the two strongest positive influences on UHC participation, while language barriers (OR = 0.68) and larger household size (OR = 0.75) were the strongest negative influences.

The practical implication is that the challenges to UHC participation in Kisumu County are not primarily financial. While income and household size matter, the data show that community members who receive training, live in areas with engaged and trusted leaders, and have access to health information in their own language are substantially more likely to participate regardless of their demographic background. Investing in training access, strengthening the accountability and visibility of local leaders, translating health information into Luo, and designing culturally respectful outreach programmes are therefore the highest-leverage interventions available to policymakers and the County Department of Health. A strategy that addresses only one or two of these domains will leave significant gains unrealised, because the domains interact: language barriers limit the reach of awareness campaigns, limited training access reduces the impact of leadership mobilisation on household enrolment, and gender role norms constrain the benefit that educated women can derive from available schemes. Advancing UHC participation in Kisumu County requires a coordinated approach that engages all four domains at the same time.

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

In conclusion, study confirmed that UHC participation in Kisumu County is shaped by the interconnectedness of multiple subsystems rather than any single factor. Education and income are the primary structural enablers, while large household size and gender disparities constrain access. Capacity building interventions, particularly training and community forums, are critical drivers of enrolment, though their reach remains limited. Leadership trust and visible leader participation are central to community mobilization, while cultural dynamics including language barriers, traditional beliefs, and restrictive gender roles present both barriers and facilitators. Interpreted through systems theory, these outcomes are emergent properties of interdependent subsystems, where feedback loops demonstrate that interventions must be holistic and integrated. While the Marwa scheme has made progress in expanding coverage, persistent out-of-pocket payments and uneven satisfaction across demographic groups indicate that financial protection, service quality, and equity remain incomplete. Therefore, advancing UHC in Kisumu County demands

multidimensional strategies that simultaneously strengthen community engagement and address structural inequities, with findings transferable to similar settings across Kenya and sub-Saharan Africa.

5.2 Recommendations

Based on the findings, the County Government of Kisumu and the Ministry of Health should introduce targeted subsidies and simplified enrolment procedures for low-income and less-educated households, scale up training programs, expand community forums, and intensify Marwa awareness campaigns to close the awareness-to-action gap. Local leaders including chiefs, religious leaders, and community elders should be formally integrated into UHC governance structures and supported through training and accountability mechanisms, while the County Health Management Team should adopt multilingual communication strategies, translate materials into Luo and other local languages, and promote gender-inclusive approaches that empower women in household health decision-making. Future studies should explore intra-household decision-making dynamics and their longitudinal effects on UHC enrolment, compare the effectiveness of digital versus community-based capacity building models, examine the varying influence of different leader types over time, and investigate how cultural beliefs and language barriers evolve in response to health reforms across different counties.

5.3 Limitations of the Study

This study was limited to Kisumu County, which may restrict the generalizability of findings to other counties with differing demographics, governance structures, and health insurance schemes. The relatively short operational period of the Marwa Solidarity Health Insurance Scheme since 2020 also constrained longitudinal assessment of community engagement trends over time. Additionally, the experiences of highly marginalized sub-populations, including persons with disabilities and migrant informal workers, remain insufficiently captured and warrant dedicated future inquiry. Future studies employing longitudinal designs, multi-county comparisons, and deeper qualitative exploration of intra-household decision-making dynamics would meaningfully build on and extend the evidence base established here.

5.4 Ethics and Consent

This study was approved by the Kenya Methodist University Scientific Research and Ethics Committee and the National Commission for Science, Technology and Innovation. The respondents went through an informed consent process, and their participation was voluntary and anonymous. Written consent was provided before participation.

5.5 Acknowledgement

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5.7 Conflict of Interest Statement

The authors declare no conflict of interest.

5.8 Data Availability Statement

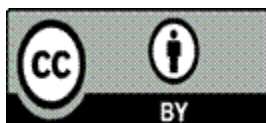
The data supporting the findings of this study are available from the corresponding author upon reasonable request. The data are not publicly available due to ethical restrictions and the need to protect the privacy and confidentiality of study participants, in accordance with the approvals granted by the Kenya Methodist University Scientific Research and Ethics Committee and the National Commission for Science, Technology and Innovation (NACOSTI).

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