



Predictors of Latrine Subsidy Uptake: Gender, Poverty, and Household Dynamics in Rural Ethiopia

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Executive Summary

Motivation

In rural Wolaita, Ethiopia, where only ~8% of households own improved latrines, understanding what drives household uptake of sanitation subsidies is critical for accelerating progress toward national sanitation goals. As part of a broader randomized controlled trial, IDinsight and iDE analyzed uptake among 685 households that were offered latrine subsidies in three woredas in Wolaita Zone, South Ethiopia Regional State. Households were eligible for either a standard subsidy, requiring a 23% to 41% contribution (cash and labor), or a full subsidy, which covered all latrine costs except for labor (the 20% household contribution).

Key Findings

- Overall uptake of subsidies was high (80%), but varied by subsidy type: 75% for standard subsidies and 93% for full subsidies.
- In contrast, only 20% of ineligible households (who were offered latrine products at market price without any subsidy) purchased a latrine. Uptake was higher among ineligible households in the treatment group (30%) than in the control group (15%).
- Households where a female made the decision on whether to accept the subsidy were ~12 percentage points less likely to take up the standard subsidy, pointing to gender-related constraints in affordability, labor access, and/or financial autonomy.
- Larger households were more likely to accept subsidies, likely due to their greater sanitation needs, ability to pool resources, and availability of labor.
- Relatively poorer households were significantly less likely to take up the standard subsidy, confirming affordability as a major barrier.
- Among full subsidy households (ultra-poor), uptake was nearly universal, suggesting strong latent demand when the cost is fully addressed.

Recommendations

To reach Ethiopia's sanitation goals, future efforts should consider more flexible support models, including:

- **Expand support for the poorest households** by offering full subsidies that include direct installation and cover labor requirements, such as pit digging, where affordability remains a significant barrier.

- **To address gender-specific constraints on latrine uptake, provide targeted assistance to female-headed households**, including labor support, as labor requirements may be especially prohibitive.
- **Integrate pit-digging services into the subsidy package for ultra-poor or labor-constrained households** to reduce labor and logistical barriers to uptake.
- **Adapt implementation strategies** by tailoring sales pitches based on household size and structure, and monitor uptake routinely - disaggregated by gender, poverty status, and household composition, to ensure programs remain responsive to the most vulnerable.

Motivation

Targeted subsidies can help poor and vulnerable households access improved sanitation. Yet uptake is often skewed toward wealthier households, who face fewer financial and informational barriers. Prior studies show that even with subsidies, better-off and more educated families are more likely to invest in sanitation (Guiteras et al., 2015; Spears, 2013).

For poorer households, uptake may be hindered by unaffordable costs, lack of labor for pit construction, or unclear household decision-making - particularly when women or less empowered members are present during subsidy offers. In Ethiopia, men are often primary financial decision-makers, limiting women's ability to act alone. Yet women and girls bear a greater burden from poor sanitation, especially during menstruation and childbearing years (Baker et al., 2018).

In Wolaita Zone, where only ~8% of rural households have improved latrines (IDinsight, 2024), identifying the household, gender, and poverty-related factors influencing uptake can strengthen local implementation and inform national policy improvements to Ethiopia's Sanitation Subsidy Protocol.

Methodology

The analysis presented in this brief draws on data from 685 households offered a latrine subsidy as part of a two-arm cluster randomized controlled trial (RCT) conducted by IDinsight and iDE in three woredas of Wolaita Zone, South Ethiopia Regional State. The study aims to generate policy-relevant evidence on the effectiveness of targeted sanitation subsidies in rural settings.

Following a household listing exercise in October 2024, market-based sanitation (MBS) sales agents visited eligible households in the gotts randomized to the "treatment" arm to deliver the subsidy offer between February and April 2025. A poverty-targeting algorithm that combined administrative criteria, such as CBHI exemption status and household-level poverty scores, determined subsidy eligibility. Households were then categorized into two groups. Standard subsidy households (n=501) were required to contribute 23% to 41% of the latrine cost (ETB 6632/USD 53.48 to ETB 2,034/USD 16.40) through a mix of cash and in-kind labor, while ultra-poor households, based on an acute poverty proxy of two food security variables (n=184), received the latrine at no cost ("full subsidy"). However, the ultra-poor households were still responsible for arranging their pit digging, which fulfills the minimum 20% household contribution in line with the national sanitation subsidy protocol (FMoH, 2022). The subsidy offers were integrated into IDE's existing MBS platform, which relies on trained local sales agents and latrine business owners (LBOs) to stimulate demand and facilitate installation. Sales agents used household eligibility lists to pitch the subsidized latrine

products, and vouchers were issued only after a household agreed to purchase and paid a deposit.

A follow-up survey was administered shortly after the sales presentation to gain deeper insights into household dynamics influencing subsidy uptake. While the survey was intended for all 745 eligible households in treatment, it was successfully completed with 680 households due to logistical and timing constraints. The survey captured who was present during the subsidy offer, who decided to accept or decline the subsidy, who was responsible for key tasks such as pit digging, whether a revisit was requested, and the reasons for any delay. In addition, the data collected included household demographics, uptake decisions, and self-reported reasons for refusing the offer.

We used multivariate linear probability models to examine how household characteristics, such as poverty status, gender roles, and composition, shaped subsidy acceptance.

Findings

1. Subsidy Take-Up Rate Among Eligible Households

Among the 685 households eligible for a sanitation subsidy, the overall uptake rate was 80.0%. Uptake varied substantially by the type of subsidy offered. Of the 184 households (26.9%) offered a full subsidy, the uptake rate was 93.5%. In contrast, households offered a standard subsidy had a lower uptake rate of 75.0%. This is slightly lower than the uptake observed in FSG's Willingness-to-Pay (WTP) study, which found that 83% of rural Ethiopian households were willing to pay ETB 400 for sanitation products - an amount comparable to the household contribution required under our standard subsidy model (Singh & Chennuri, 2025).

2. Predictors of Subsidy Take-Up

a. Gender of Decision-Maker Affects Subsidy Uptake

The data found that gender roles within the household influence sanitation decisions. In households where a woman decided whether to accept the subsidy, uptake was significantly lower. Among standard subsidy households, this dynamic was associated with an 11.9 percentage point decrease in uptake probability ($p = 0.051$), as shown in Table 1.

Table 1: Standard Subsidy (n=501)

| Variable | Coefficient | p-value |
|-------------------|-------------|----------|
| Decider is female | -0.119 | 0.051*** |
| Age | 0.002 | 0.232 |

| | | |
|------------------------------------|--------|----------|
| Household Size | 0.035 | 0.001*** |
| Practices open defecation | -0.003 | 0.958 |
| Day without eating in past 4 weeks | -0.191 | 0.123 |
| Hungry in past 4 weeks | 0.008 | 0.860 |
| Poverty Likelihood | -0.382 | 0.000*** |
| Owns Land | 0.036 | 0.683 |
| Owns Cattle | 0.080 | 0.144 |

Note: The p-value symbols in the table are when the mean is different from None of the former: as follows: '***' for $p \leq 0.01$, '**' for $0.01 < p \leq 0.05$, and '*' for $0.05 < p \leq 0.10$. No symbol denotes $p > 0.10$.

When analyzing all households, both standard and full subsidy groups, the effect remained statistically significant, with a 6.9 percentage point lower likelihood of uptake ($p = 0.036$) when the decision-maker was female (Table 2). The result suggests persistent gender-related constraints within households, such as limited access to financial resources or lower authority in household purchasing decisions, which may inhibit uptake even when subsidies are available.

Table 2: All Subsidy Households (N=680)

| Variable | Coefficient | p-value |
|--------------------------------------|-------------|----------|
| Decider is female | -0.069 | 0.036** |
| Age | 0.000 | 0.775 |
| Household Size | 0.029 | 0.001*** |
| Practices open defecation at listing | -0.022 | 0.661 |
| Poverty likelihood | -0.182 | 0.029** |
| Owns land | 0.082 | 0.299 |
| Owns cattle | 0.001 | 0.974 |

Note: The p-value symbols in the table are when the mean is different from None of the former: as follows: '***' for $p \leq 0.01$, '**' for $0.01 < p \leq 0.05$, and '*' for $0.05 < p \leq 0.10$. No symbol denotes $p > 0.10$.

b. Household Size Positively Associated with Uptake

Household size was significantly associated with the likelihood of accepting a subsidy. In both models (Tables 1 and 2), **each additional household member increased the probability of uptake by 3.5 percentage points in the standard subsidy group ($p = 0.001$) and 2.9 percentage points across all subsidy households ($p = 0.001$)**. This may reflect greater sanitation needs, available labor, ability to combine resources towards the contribution requirement, or collective decision-making that favors investment in latrines in larger households.

c. Poverty Likelihood Scores Predict Lower Uptake

The poverty likelihood score, which captures household economic vulnerability, was strongly associated with uptake outcomes. **Among standard subsidy households, higher poverty scores were linked to a 38% percentage point decrease in uptake ($p < 0.001$), suggesting that even subsidized prices may be beyond the reach of many poor households (Table 1).**

In the pooled model (Table 2), the negative relationship between poverty and uptake persisted, though with a smaller effect size. Higher poverty scores were associated with an 18 percentage point reduction in uptake ($p = 0.029$). However, this weaker association is likely driven by near-universal uptake in the full subsidy group, who were poorer on average and selected based on food insecurity, which limits the ability of the poverty score to predict variation in uptake across the full sample. **These findings suggest that financial constraints remain a key barrier for poorer households offered only a partial subsidy.** To ensure the inclusion of the poorest, subsidy designs may need to fully eliminate cost burdens and consider complementary support to address non-financial barriers.

d. Other Variables Not Significantly Associated with Uptake

Several other variables - such as the gender of the household head, respondent age, and ownership of land or cattle were not significantly associated with uptake in either model. Similarly, food insecurity indicators like experiencing hunger or going a day without eating in the past four weeks did not show a statistically significant relationship with the decision to accept a subsidy. This lack of association suggests that some conventional indicators of poverty or household status may not effectively capture the specific constraints that affect sanitation uptake. **It also highlights that decision-making authority (particularly gendered) may be a more relevant predictor than official headship or asset ownership.**

3. Barriers to Subsidy Take-Up

Among the 125 households that refused the standard subsidy, the majority (60%) reported they could not afford the subsidized price. This aligns closely with the quantitative results showing lower uptake among households with higher poverty scores. Other reported reasons included already owning a working latrine (10%), needing more time to consider the decision

(7%), and the absence of a physically strong household member to dig the pit (6%). These responses suggest that financial constraints, physical labor demands, and intra-household decision-making dynamics influence uptake.

However, these barriers are effectively neutralized when the cost is entirely removed. **Uptake was nearly universal among households offered a full subsidy (93%), and no household characteristics significantly predicted refusal¹.** This underscores the power of full subsidies to ensure equitable access to improved sanitation, especially for the poorest households, and highlights the importance of addressing both affordability and household dynamics in designing targeted subsidy programs.

Discussion and Recommendations

These findings reinforce the role of affordability in determining access to improved sanitation. **Compared to ineligible households offered latrines at full market price (20% uptake), the sharp increase in acceptance among subsidized households illustrates that financial constraints remain a significant barrier, particularly for the poorest.** This is consistent with prior willingness-to-pay (WTP) research in Ethiopia, which found slightly higher uptake levels at comparable subsidy amounts (Singh & Chennuri, 2025), as well as broader literature demonstrating that affordability, gender norms, and household capacity influence sanitation adoption (Crocker et al., 2017; Alemu et al., 2017). Meanwhile, the lower uptake observed in households where women were the primary decision-makers highlights persistent gender-related constraints, such as limited financial autonomy or access to labor for latrine construction. Larger households, by contrast, may be more responsive to subsidies due to greater sanitation needs or pooled resources, including labor.

As Ethiopia and other countries pursue pro-poor, area-wide sanitation targets, these findings emphasize the need for program designs that address both financial and non-financial barriers, especially those affecting marginalized groups. Complementary strategies, such as labor facilitation or decision-making support mechanisms, could further enhance subsidy uptake and ensure equitable access to improved sanitation. Future programs should consider how structural constraints like poverty, gender dynamics, and household composition interact with subsidy design and implementation.

To support equitable sanitation access and strengthen the effectiveness of targeted subsidy programs, we recommend the following:

- **Expand subsidy support for the poorest households**, particularly through full subsidies (with the 20% household contribution stipulated by the National Sanitation

¹ Of the 13 households who declined a full subsidy, the most common reasons included already having a latrine and feeling no need (23%), lack of a physically strong household member to construct the latrine (23%), and needing more time to decide (23%). Others cited affordability concerns (15%), absence of a key decision-maker (8%), or gave other unspecified reasons (8%).

Subsidy Protocol covered by in-kind or labor costs), where affordability remains a binding constraint.

- **Conduct deeper participatory research to understand barriers faced by female-headed households, who had lower uptake despite being eligible.** Findings suggest that constraints such as limited access to labor for pit digging may be particularly acute. Future programs could consider offering additional support - such as free installation or pit digging - for these households to help overcome labor-related and other gender-specific barriers.
- **Offer latrine pit digging as part of the ultra-poor or labor-constrained households subsidy package.** These services are currently not included, which may limit uptake. iDE and other implementers should explore context-specific strategies to reduce labor-related barriers and ensure equitable access to sanitation support.
- **Tailor sales pitches and engagement strategies based on household size and composition.** Larger households may have higher demand for sanitation and greater capacity to act on subsidy offers, so implementers should adjust messaging accordingly to maximize uptake.
- **Incorporate routine uptake monitoring,** disaggregated by gender, poverty status, and household structure, to ensure that targeting and implementation remain responsive to the needs of the most vulnerable.

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