

## CAN A SANITATION PROGRAM EMPOWER WOMEN?

Analyzing the gender impact of the CHOBA sanitation program at the household level in Vietnam

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### Research Highlights



# Background & Research Objective

The literature on WASH and gender essentially falls into three categories: (i) studies of how WASH programs benefit women (and men); (ii) design and implementation of programs that take a gendered approach and/or seeks to empower women in order to improve WASH outcomes; and (iii) assessments of how and to what extent WASH programs empowers women. While quite a lot has been written on the first two topics, relatively little research has addressed the third. Where such studies exist, they have generally been qualitative in nature.

Changing gender roles is a slow process requiring action at all levels of society. Consequently, it is unrealistic to believe that a sanitation and hygiene program would reduce domestic violence or give women an equal say in family finances. If such a program empowers women, it is likely to be primarily reflected in ***the decision to install a latrine*** (and/or what type of latrine to build).

In simple terms, this research seeks to: (i) determine if the program had a significant influence on the wife's role in the decision to install a new latrine; (ii) identify the program components that had the largest effect; and (iii) examine if the wife's greater influence made any difference in the choice of latrine. We use data from a large scale sanitation program in Vietnam to explore these topics.

## The Community Hygiene Output-Based Aid Project

CHOPA was a large-scale sanitation program designed and implemented primarily by women. It was financed by the Bill and Melinda Gates Foundation and implemented by East Meets West (EMW) in 500 communes from 10 provinces. The main partner was the Vietnam Women's Union (VWU) that fielded some 5,000 volunteers as motivators and facilitators. Because only about one percent of the rural population practices open defecation (JMP 2015), the Government's strategy targets households that use fishpond, single pit, or bucket latrines and seeks to move them "up the sanitation ladder."

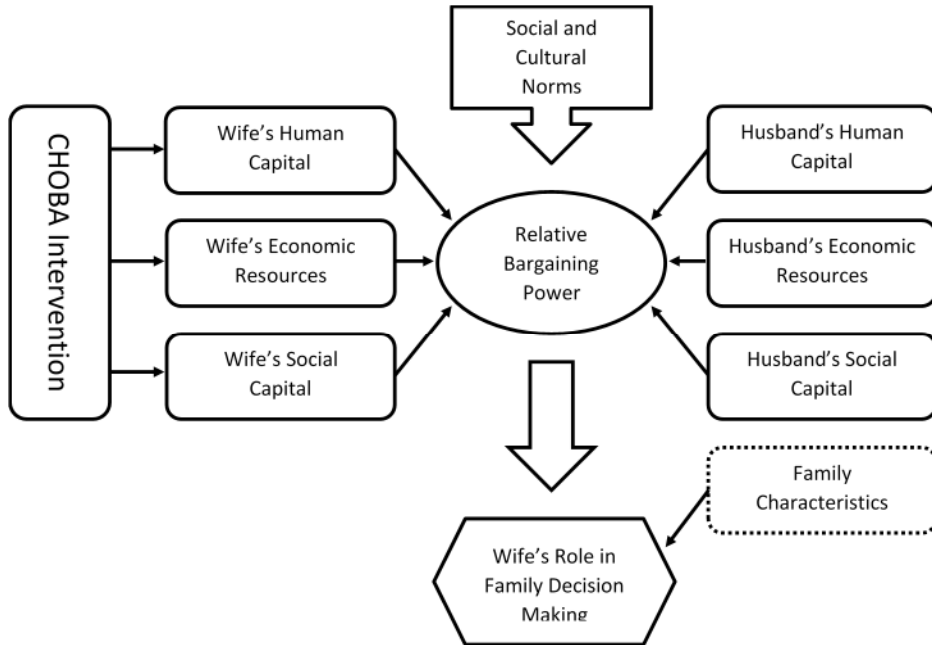
In less than four years CHOPA encouraged 113,500 poor households to build hygienic latrines (almost exclusively septic tanks). Thus, CHOPA had a direct impact on the health and well-being of nearly half a million people—all belonging to the poorest 40%. It was designed to influence households at critical stages of their decision making process and incorporated the key elements of traditional sanitation promotion programs:

- An information and education campaign;
- Supply chain improvement; and
- Access to affordable credit (primarily from the Vietnam Bank for Social Policy, VBSP);

A unique feature of CHOPA was its clear focus on results through output-based incentives to poor households, to the VWU and its volunteers and to communes participating in the program. Poor families who purchased and installed a latrine received incentive payments in the form of rebates of approximately USD 28. Implementing partners and local governments who worked together to promote latrine uptake and manage the rebate process were paid based on the number of latrines installed and used by poor households, as were village promoters who conducted community engagement and awareness-building activities.

# The Conceptual Model

Building on Kabeer (1999) and Golla et al. (2011) and drawing on the broader literature, we therefore propose a model which emphasizes both wives' and husbands' characteristics (as well as family characteristics) as important factors for determining wives' roles in household decision-making.



## Ordinary Least Square (OLS) Regression

$$Y = \alpha_0 + \alpha_1 * x_1 + \alpha_2 * x_2 + \dots + \alpha_n * x_n$$

Where:

Y is the probability that the husband alone decided on the choice and installation of the latrine;  
and

$x_i$  are a number of explanatory variables grouped into five categories (taken from conceptual model):

- => Human capital
- => Economic resources
- => Social capital
- => Family characteristics
- => Social and cultural norms

The survey results on the question “who decided to build the latrine” are:

Husband decided	47.0%
Joint decision	39.1%
Wife decided	13.9%

At the individual household level, Y is dichotomous, i.e. it is either 1 (the husband decides alone) or 0 (the wife decides or the spouses decide jointly). The usual way of analyzing such relationships is to use binary logistic functions. The sample probability for our selected dependent variable is well within the 20% - 80% interval (in which results of traditional linear regression models are practically the same as the results of logistic models). However, the results of ordinary least square regressions are much easier to interpret.

It is worth noting that the influence of the wife on the decision making process can cover different aspects of the latrine investment and, as Kabeer (1999) noted, take various forms, including bargaining and negotiation, deception and manipulation, subversion and resistance as well as more intangible, cognitive processes of reflection and analysis. In interpreting the regression results, one should keep in mind the observation by Santillán et al. (2004) that:

*“...in Vietnam women exert a significant degree of control in daily decision making about productive activities, while still conforming to inegalitarian gender norms by stating that men should be the final decision makers about all family matters.”*

## Summary of Results

**Human Capital Variables:** The probability that the wife participated in the latrine decision **increases with her level of education, age, and knowledge about what type of latrine is hygienic**. Knowledge about the linkages between contact with human feces and diseases has no significant impact on the wife’s role in the latrine decision.

**Economic Resources:** The wife’s decision-making role was increased if she earned outside cash income, and if **the Women’s Union helped the wife to obtain and process a loan**.

**Social Capital:** No significance (possibly because poor choice of proxy variable).

**Family Characteristics:** Like most studies, we found that the effect of total family income was insignificant. Similarly, family size had negligible impact of decision making roles in the household.

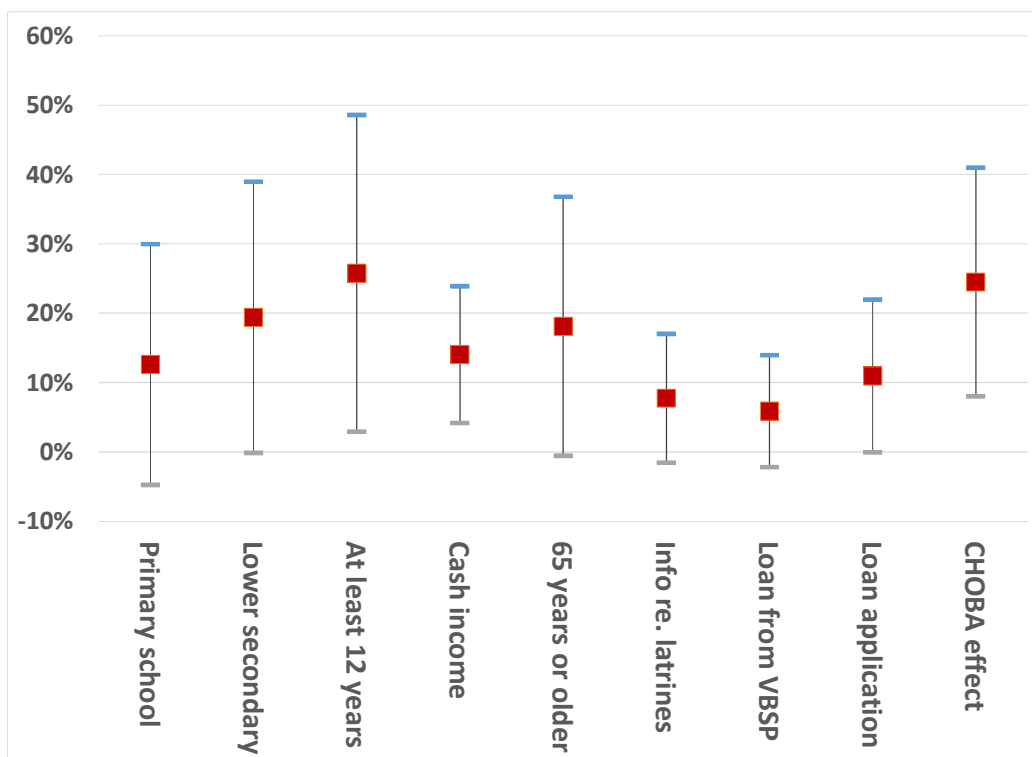
**Social and Cultural Norms:** Our results suggest that **women in Hai Duong (northern province, more traditional Confucian values) had less influence in decision-making than in Tien Giang (southern Mekong Delta)** (after adjustments for educational achievements).

The results of one of the model formulations are provided below:

<u>Variable Description</u>	<u>Coefficient</u>	<u>Significance</u>
<b>Indicators of Wife's Empowerment (dependent variable)</b>		
The husband decided on installation of the latrine	.631	.000
<b>Wife's Human Capital</b>		
Has completed primary school (incl. grade 5)	-.126	.232
Has completed lower secondary school (incl. grade 9)	-.194	.102
Has completed upper secondary school or higher	-.258	.064
Between 41 and 64 years of age	-.035	.564
65 years or older	-.181	.111
<i>Knows no diseases caused by contact with feces</i>	-.001	.985
<i>Knows at least 2 diseases caused by contact with feces</i>	.046	.419
<i>Knows that ventilated double pit latrine is "hygienic"</i>	-.146	.028
<i>VWU informed about hygienic latrines</i>	-.077	.170
<i>VWU provided information about loans</i>	-.099	.365
<i>VWU provided information about the consumer rebate</i>	-.011	.858
<b>Wife's Financial Resources</b>		
Wife is employed and earns independent cash income	-.140	.019
<i>The family obtained a loan from VBSP (usually through the VWU)</i>	-.059	.233
<i>VWU assisted the family in preparing loan application and obtain loan</i>	-.109	.102
<b>Wife's Social Capital</b>		
<i>Volunteer from VWU did not visit the household during the last 12 months</i>	.017	.825
<i>Volunteer from VWU visited the household at least</i>	-.027	.611
<b>Husband's Human Capital</b>		
Education difference between husband and wife	.004	.586
Age difference between husband and wife	.008	.253
<b>Husband's Financial Resources</b>		
Husband has non-farm income	.075	.143
<b>Husband's Social Capital</b>		
No Variable available	n.a.	n.a.
<b>Family Characteristics</b>		
Family/household has 3 or 4 members	.017	.794
Family/household has at least 5 members	.059	.415
Household income was less than VND 20 million in previous 12 months	.032	.585
Household income was more than VND 50 million in previous 12 months	.013	.813
<b>Social and Cultural Norms</b>		
The household lives in Hai Duong province	.095	.142

**NOTE: Negative coefficients imply that the wife's decision making role increases**

The key factors increasing the wife's role in the latrine decision are summarized in the chart below, which shows how much the wife's role in the latrine decision increases.



The regression results for the wife’s education, outside cash income and age are in line with most gender studies, which confirms that validity of the model structure. Of the three CHOBA variables, only “help with loan application” is statistically significant at the 10% level. However, the combined effect of the CHOBA components is significant at the 1% level. Without the CHOBA program, the wives would be the sole or joint decision makers in 45% of the households. Thanks to CHOBA this percentage increases to 69%. In short, **CHOBA empowers women to a significant extent.**

## Impact on the Latrine Choice

The survey clearly showed that men and women universally prefer septic tanks and that they have virtually the same opinion about the disadvantages with traditional latrines. However, they appear to have different trade-offs. Looking at the reasons for installing a latrine, we find that “convenience, comfort, and cleanliness” and “improving family health” are more important considerations when the wife is involved in the latrine decision while men seem to give greater weight to the cost than their spouses do.

	Husband Decided	Wife or Joint Decision
<b>Reason for New Latrine</b>		
Convenience, Comfort, Cleanliness	73.7%	82.8%
Improve Family Health	31.7%	42.0%
Reasonable Cost	18.5%	14.2%
<b>Outcome</b>		
Septic Tank	64.6%	76.6%
Construction Cost (median)	USD 295	USD 380

These different trade-offs are reflected in the choice of latrine type. Around 77% of the households installed a septic tank when the wife was actively involved in the decision. If the husband alone decided, only 65% were septic tanks. The husbands' greater concern about the cost is also reflected in the survey data: the median investment in a latrine decided on by the husband was USD 295 and USD 380 if the wife participated in the choice.

To examine if these results were due to some confounding variables, we used a binary logistic equation of the form:

$$\ln \{p/(1-p)\} = \beta_0 + \beta_1 * x_1 + \beta_2 * x_2 + \dots + \beta_k * x_k$$

Where:  $p$  is the probability that the household owns a septic tank latrine;  
 $\ln \{p/(1-p)\}$  is the natural logarithm;  
 $x_i$  is an explanatory variable; and  
 $\beta_i$  is the relevant regression coefficient.

### Factors Affecting the Choice of Septic Tank Latrines

Variable	Coefficient	Odds Ratio	Significance Level
Husband decided on latrine	-.442	.643	*
Household has piped water	.968	2.634	***
Wife has completed primary school (grade 5)	1.797	6.031	***
Wife has completed lower secondary school (grade 9)	1.926	6.864	***
Wife has completed upper secondary school (grade 12)	2.769	15.936	***
Household income in top two quintiles	.373	1.452	
Household residing in Hai Duong province	-.841	.431	**
Household living in commune where CHOBA rebate was offered	.754	2.126	***
Either one or both spouses are government employees	1.975	7.209	*
Convenience and comfort is a major consideration in latrine choice	1.720	5.586	***
Family health is a major consideration in latrine choice	.589	1.802	*
Construction cost is a major consideration in latrine choice	-2.053	.128	***
Constant	-2.599	.074	***

Significance levels: \*\*\* 1%; \*\* 5%; \* 10%

Variables such as the age of the husband and wife, family size, the number of children, elderly or females in the household turned out to have no significant impact on the latrine choice. Similarly, the occupation of the husband and wife were insignificant, except if either one of the spouses was a civil servants. However, the education level of the spouses—and especially the wife—was highly significant.

The dummy variable for Hai Duong is negative and significant. (Most of Tien Giang has a high groundwater table and is subject to occasional flooding and, thus, dry pit latrines are not suitable.) Poor households in roughly half of the communes covered in the sample were eligible for the USD 28 consumer rebate if they installed a hygienic latrine. Consequently, we find that the probability of households having septic tanks in these communes is about 13 percentage points higher than in communes where no rebates were offered. The type of latrine that the household used prior to installing the present one has negligible impact on the probability that it owns a septic tank. However, if the household has access to a piped water system, the probability that it has a septic tank increases



drastically from 62 percent to 81 percent.

Looking at the reasons why the household installed the new latrine, we find that comfort and convenience had the strongest influence followed by family health. If cost was a major consideration, the probability that the household has a septic tank declines drastically. According to the regression results, if the wife participated in the latrine decision, the likelihood that the household has a septic tank increases by 13 percentage points. **Empowering women makes a difference in the latrine choice.**

## Selected References

Golla, Anne Marie, Anju Malhotra, Priya Nanda, and Rekha Mehra. 2011. *Understanding and Measuring Women's Economic Empowerment; Definition, Framework and Indicators*. International Center for Research on Women (ICRW). Washington, D.C.

Kabeer, Naila. 1999. *Resources, Agency, Achievements: Reflections on the Measurement of Women's Economic Empowerment*. *Development and Change* Vol. 30 (1999), 435-464. Institute of Social Studies.

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