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# The Influence of Perceived Gender Roles on the Use of Water Services in Chiapas, Mexico

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## ABSTRACT

Two intersecting concerns in development studies include gender inequality and inaccessibility to safe and affordable drinking water. In five rural communities of Mexico where non-governmental initiated and community managed water systems seek to address these concerns, this original ethnographic research asked how the gender composition of the management of a water service influences people's perception of the given water service. This question was influenced by the need for research on perceptions of water quality in developing countries and the importance of understanding and promoting gender equity as a process involving men and women. Using ethnographic tools, original data were gathered at each of the five water systems, two of which are managed by committees made up entirely of women and three with mixed-gendered committees. The results suggest that the gender composition of the committee and gendered distribution of responsibilities among committee members carry influence over a person's perception of the water service. In particular, when these factors do not align with the gender norms of the community, a community member's perception of the service can become negative. These findings suggest that organizations dedicated to developing safe water services should consider factors such as gender norms and community dynamics as a way to improve access to safe drinking water sources.

**Key Words:** Water; Gender Equity; Community Participation; NGOs; International Development

## INTRODUCTION

Around the world, a diversity of approaches exists for improving water and sanitation access that hinge on community participation and measures for creating gender equity. While utilizing methods for development, these efforts to improve health

and quality of life take place in the midst of existing community norms. High rates of inaccessibility to clean drinking water call for a critical analysis of the practices of involving community members in development and altering gender norms.<sup>1</sup> A primary partner for this research is Fundación Cántaro Azul (FCA), a Mexico-based non-profit organization that undertakes important work for addressing these critical health concerns. Consistent with international development practices, the organization involves community members in the management of local water treatment and distribution centers, referred to as kiosks. The services are located in small-scale, rural communities of southern states of Mexico.

Given the lack of in-depth exploration of the intersection of community specific gender norms and perceptions of water services, this original ethnographic research asked how the gender composition of the management of a kiosk influences people's perception of the water service in five small-scale rural communities where the NGO has established relations. Furthermore, this research looked at the extent to which the influence of gender norms on perceptions differed in a community with a kiosk committee made up entirely of women, or an all-women committee (AWC), from a community with a mixed-gendered committee (MGC).<sup>2</sup> The analysis of Doria of factors that influence public perceptions of drinking water quality and Cornwall's gender studies informed the qualitative content analysis of the case studies and helped expose the influence of community involvement and gender norms on perceptions of water services.<sup>3</sup> The literature and results of this research show that perceptions of beneficiaries toward such efforts can be seen as a way to better understand community relations and needs and achieve the intended goals sustainably.

## **LITERATURE REVIEW**

There are numerous theoretical lenses one might use to understand responses to critical health conditions in rural communities of developing countries. Particular to this study are the fields of gender and development and a method of analysis called social perception studies. These together frame the importance of gender relations in the context of water inaccessibility and project implementation.

### *Gender*

Feminist studies both in development and non-development contexts emphasize gender analysis as an essential part of community projects; doing so helps ascertain the

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<sup>1</sup> 663 million people do not have access to any type of improved drinking water source and 842,000 human deaths could be prevented by improved sanitation, hygiene, and water ("Key Facts from JMP 2015 Report").

<sup>2</sup> A committee is a team of community members democratically elected to volunteer with the management and service provision of the water system. The elected participants of the committee are referred to as committee members. Each member holds a different role and set of responsibilities with the committee.

<sup>3</sup> Miguel de Franca Doria, "Factors Influencing Public Perception of Drinking Water Quality," *Water Policy* 12:1 (2010): 1–19.

challenges for creating equity as a part of project design and as an outcome of projects. Since the 1970s, advocates have lobbied for and prioritized women's empowerment and gender equity as a necessary goal for international development in plans, such as the 1995 Beijing Plan Declaration and Platform for Action, the 2000 Millennium Development Goals, and the 2015 Sustainable Development Goals.<sup>4</sup> A critical analysis of participatory approaches suggests that "misunderstanding or ignoring women's needs not only affects the women themselves, but also, quite obviously has a negative impact on the immediate family and the wider community."<sup>5</sup> For creating gender equity, understanding the widespread influence of women is accompanied by a need to understand men in relationship to women. Cornwall criticizes the stereotyping of men that has occurred in discussions of gender issues and relations and suggests a reconsideration of the values and stereotypes that have been made implicit in widely utilized participatory methods.<sup>6</sup> In the context of community projects for water access, the assertions of Guijt, Shah, and Cornwall result in a need to study how gender norms shape perceptions of the water committees and the role of men with both the AWC and MGC.

#### *Perceptions of water quality and service*

As consumers of water, people tend to form opinions and preferences about the water itself and if applicable, the water service. Doria suggests that public perceptions of water quality are influenced by a variety of social factors, including the gender of the respondents, neighborhood satisfaction, and community social relations and dynamics.<sup>7</sup> The author's review of literature on perceptions of water quality reveals that studies based in developing countries on this topic are scarce.<sup>8</sup> Specifically, in regards to gender, Amori et al. found that in a specific case study from Nigeria differences in perceptions of water privatization based on gender showed no statistical significance.<sup>9</sup> Another case study of social perception concludes that since women have a unique perception of water and relationship with the resource due to their prominent role in obtaining drinking water for their families, "the need for further research on water and gender issues and for gender-oriented interventions is highlighted."<sup>10</sup> This research

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<sup>4</sup> Chung et al., *Indicators of Women's Empowerment in Developing Nations*, University of Wisconsin–Madison: La Follette School of Public Affairs, (2013), <https://www.lafollette.wisc.edu/images/publications/workshops/2013-women.pdf>.

<sup>5</sup> Irene Guijt, and Meera Kaul Shah, *The Myth of Community: Gender Issues in Participatory Development*, *Intermediate Technology Publications*, (1998).

<sup>6</sup> Andrea Cornwall, "Missing Men? Reflections on Men, Masculinities and Gender in GAD," *IDS Bulletin* 31:2 (2000): 18–27.

<sup>7</sup> Miguel de Franca Doria.

<sup>8</sup> *Ibid.*, 16.

<sup>9</sup> A. Amori et al., "Assessment of Public Attitude Towards Water Privatization in Lagos and Ibadan, Southwest, Nigeria," *World Environment* 2:3 (2012): 31–34.

<sup>10</sup> Josiane T. Matos de Queiroz et al., "Perceptions of Bottled Water Consumers in Three Brazilian Municipalities," *Journal of Water and Health* 11:3 (2013): 529.

extends the findings and suggestions of Amori et al., Doria, and Matos de Quieroz et al. to better understand the effect of gender norms on people's perceptions of water services, in addition to water quality, and water consumption behaviors given unique local relations with water.<sup>111213</sup>

## BACKGROUND

To understand the context in which water, gender, and development interventions and initiatives take place in Mexico, one requires background information on the scarce availability of safe drinking water in rural communities of Chiapas, its negative effects on the population, and the prevalence of unequal opportunities for women.

### *Water in Mexico*

As of 2010, Mexico reached and exceeded the Millennium Development Goal 7c, "To halve by 2015 the proportion of people without sustainable access to safe drinking water and basic sanitation."<sup>14</sup> Even with a supply of previously disinfected piped drinkable water reaching 90.9 percent of the entire country's population and 73.5 percent of individual households in Chiapas connected to piped water, reports reveal that the state had the fourth lowest connection rate of all the states in the country and only 62% coverage in rural communities causing a need for alternative forms of drinking water.<sup>1516</sup> The Central Highlands and the Eastern Lowlands of Chiapas (a region in which a portion of this research takes place) suffer the consequences of historically rooted ecological marginalization resulting from the interaction between significant ecological trends and social institutions.<sup>17</sup> The consequences of this ecological marginalization are seen in the present day with the low-piped water coverage that exists in Chiapas and throughout Mexico and disproportionate health effects. The leading cause of death in Mexico for boys between the ages of one and four years old and the second leading cause of death for girls in the same age range is gastrointestinal illness, a cause of death strongly associated with inadequate access to safe and affordable drinking water.<sup>18</sup> The current conditions of drinking water that these children face have also been shaped by contamination of local water sources, challenges

<sup>11</sup> A. Amori et al.

<sup>12</sup> Miguel de Franca Doria.

<sup>13</sup> Josiane T. Matos de Queiroz et al.

<sup>14</sup> INEGI, *The Millennium Development Goals in Mexico: Progress Report 2013 Executive Summary*, Instituto Nacional de Estadística y Geografía, (2013), [http://200.23.8.225/odm/doctos/ResInfMex2013\\_ing.pdf](http://200.23.8.225/odm/doctos/ResInfMex2013_ing.pdf).

<sup>15</sup> Ibid.

<sup>16</sup> *Perspectiva Estadística Chiapas*, Instituto Nacional de Estadística y Geografía, (2012), [http://www.inegi.org.mx/prod\\_serv/contenidos/espanol/bvinegi/productos/integracion/estd\\_perspect/chis/Pers-chs.pdf](http://www.inegi.org.mx/prod_serv/contenidos/espanol/bvinegi/productos/http://www.inegi.org.mx/prod_serv/contenidos/espanol/bvinegi/productos/integracion/estd_perspect/chis/Pers-chs.pdf).

<sup>17</sup> Phillip Howard, "The History of Ecological Marginalization in Chiapas," *Environmental History* 3:3 (1998): 357–77.

<sup>18</sup> SINAIS, *Diez Principales Causas de Mortalidad En Hombres Y Mujeres Por Grupo de Edad*, SINAIS, (2007), <http://sinais.salud.gob.mx/mortalidad/>.

to fully and effectively decentralizing water management to municipalities, and a recent increase in policies for commercialization.<sup>19</sup><sup>20</sup><sup>21</sup><sup>22</sup>

### *Gender, water, and development*

Mexico ranks 73rd of 187 countries in the United Nations Development Report Office calculations for the Gender Inequality Index, a calculation that reflects inequalities in achievements between men and women in regards to their reproductive health, empowerment, and labor market.<sup>23</sup> Among the 32 states in Mexico, Chiapas ranks as the state with the second lowest gender equality.<sup>24</sup> A variety of tests demonstrate the materialization of gender inequality in the state of Chiapas. One study showed that Chiapas, at 36.6%, has the lowest percentage of females over the age of 12 in the labor force relative to the percentage of males in the labor force.<sup>25</sup> Another study found that women are less satisfied with their income, work situation, and access to education than men.<sup>26</sup> Felix and Garcia-Vega state that this finding agrees with previous research, including Frias, which suggests that women are less privileged than men in many domains of social life.<sup>27</sup>

Gender inequality manifests itself at a community level, especially in areas of high marginalization, with the task held predominantly by women of fetching water from sources of contaminated water, often times distant. Research argues that the effects of gender inequality and access to water on one another call for investments in water and sanitation interventions, such as infrastructural developments.<sup>28</sup> The responsibility of finding firewood and carrying water influences women much differently than men, a disparity that has led to an increase in women empowerment and gender equity initiatives.

In a social cultural structure where there is high gender inequality and physical distance from water sources and firewood in rural areas of Chiapas, the Mexican

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<sup>19</sup> Veronica Herrera, "Does Commercialization Undermine the Benefits of Decentralization for Local Services Provision? Evidence from Mexico's Urban Water and Sanitation Sector," *World Development* 56 (2014): 16–31.

<sup>20</sup> June Nash, "Consuming Interests: Water, Rum, and Coca-Cola from Ritual Propitiation to Corporate Expropriation in Highland Chiapas," *Cultural Anthropology* 22:4 (2007): 621–39.

<sup>21</sup> Margaret Wilder, and Patricia Romero Lankao, "Paradoxes of Decentralization: Water Reform and Social Implications in Mexico," (2006).

<sup>22</sup> Blanca Jiménez Cisneros and María Luisa Torregrosa Armentia, "Water Services in Mexico: Are They a Public Priority?" *Journal of Comparative Social Welfare* 23:2 (2007): 155–65.

<sup>23</sup> HDRO, "Table 4: Gender Inequality Index," United National Development Programme, (2014), <http://hdr.undp.org/en/content/table-4-gender-inequality-index>.

<sup>24</sup> Sonia M Frias, "Measuring Structural Gender Equality in Mexico: A State Level Analysis," *Social Indicators Research* 88:2 (2008): 215–46, <http://www.jstor.org/stable/27734698>.

<sup>25</sup> Ibid.

<sup>26</sup> Reto Felix and Jose Garcia-Vega, "Quality of Life in Mexico: A Formative Measurement Approach," *Applied Research in Quality of Life* 7:3 (2012): 223–38.

<sup>27</sup> Sonia M Frias.

<sup>28</sup> Naomi Netsayi Wekwete, "Gender and Economic Empowerment in Africa: Evidence and Policy," *Journal of African Economies* 23 (2014), 187–127.

government and non-governmental projects seek to improve gender equity through increasing women's participation in community projects and improving the accessibility and quality of drinking water. Such projects are motivated by the notion that by decreasing the time necessary to spend on these tasks, women will be more available to participate in other more productive activities, like the workforce. This research studies one of these many projects in order to understand how projects designed to incorporate women are responding to the local context and simultaneously achieving goals to improve access to water and public health conditions.

## METHODS

Original data for this ethnographic study were collected in 2014 from a total of 26 semi-structured interviews, including 10 group interviews and 16 individual interviews, in five communities. Participants included committee members, non-committee community members, and local elementary and middle school teachers. Results in this study are based on a qualitative content analysis of these interviews and participant observation.

Table 1.1 *Community Profiles*

	Kiosk committee type	Total population	% of men	% of women	Has piped water?
Community 1	All women	911	51%	49%	No
Community 2	All women	1616	47%	53%	Yes
Community 3	Mixed-gendered	242	54%	46%	Yes
Community 4	Mixed-gendered	374	50%	50%	Yes
Community 5	Mixed-gendered	432	47%	53%	Yes

The format for interviews with community members consisted of questions regarding background information, previous and current water sources, experiences with the kiosk, relationship with the committee members, opinions of the gender composition of the committee, and characteristics of their ideal water service management. Questions in interviews with committee members regarded the history of the kiosk, the creation of

the committee, the relationships between committee members prior to the creation of the committee, changes in the committee since its beginning, relationships and experiences with consumers and other townspeople, and beliefs about capabilities of men and women. Statistical information about the research sites from the 2010 census in Mexico are shown in the Table 1.1.<sup>29</sup>

## **FINDINGS**

### *Influence of gender norms on perceptions*

The perceptions of consumers and non-consumers of the kiosk varied in each community and often reflected local histories, community relations, and current social dynamics. Whether or not the community members accept the involvement of a specific gender in the committee affects their perception of the kiosk's water service. The responses from committee members from Community 1 demonstrate the extent to which gender relations can influence a community member's perception of the water service and decision to purchase from the kiosk.<sup>30</sup> Communities negatively perceive the service in cases where the gender composition of the committee does not align with the gender norms of the community. As shared by two of three respondents, among other factors, tension between the committee and the organization of land owners comprised of men caused people in the community to be particularly resistant to transitioning from fetching and boiling water to purchasing water from the kiosk.

The experiences of the women tell the way in which and reasons for why the community negatively perceives the water service. Stories of the women from the kiosk committee receiving threats and harassment on behalf of men from the local well committee during the 2014 drought season potentially indicate a transfer of feelings from tensions not related to the water service. Two of the committee members in Community 1 expressed that many community members feel jealousy towards the women for advancing economically as income earners in the committee and having responsibilities that other women are not allowed to hold. The gender of those who feel or have expressed jealousy was not specified. Such expectations for women can be attributed to the gender norms of the community.

While the jealousy was not explicitly related to people's perceptions of the water service and decision to purchase, these emotions are a part of the context in which these women work for the committee. The committee of Community 1 contrasts with the other communities where responses from consumers who indicated satisfaction with the service approved of the gender composition of the committee and where responses of

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<sup>29</sup> Censos Y Conteos de Población, 2014, Instituto Nacional de Estadística y Geografía, [http://www.inegi.org.mx/sistemas/consulta\\_resultados/m5mh.aspx?c=28004&s=est](http://www.inegi.org.mx/sistemas/consulta_resultados/m5mh.aspx?c=28004&s=est).

<sup>30</sup> The water service in each community is set up to provide water at an affordable price based on the local economy. Revenue from the service is reinvested in stock materials for the service and projects that benefit the community.



dissatisfaction were unrelated to gender. The gender composition of the committee has the potential to be a major barrier for people's transition from one water source to the community managed water service, when conflicts due to gender norms exist prior to the installation of the kiosk or arise during its time of operation and the participation of a specific gender in the committee disrupts community gender norms.

### *Support from a spouse*

In all communities, especially those with a kiosk managed by an AWC, men continue to be an integral component of the system's success through their influence and support. In Community 1, where the tension between men from other organizations and women involved in the committee was high, the relationships between the women in the committee and their husbands differed from relationships with other men and women in the community. Two of the three respondents, both of whom were committee members, shared that their husbands since the beginning of their wife's participation in community committees have become understanding that their lunch may not be prepared for them by the time that they arrive home and have learned how to heat up a meal for themselves. The third respondent from this community expressed that her spouse supports her by helping carry the twenty-liter water bottles, known as garrafones, to their home.

In Community 2, the kiosk gained access to a local water source since one of the husbands advocated on behalf of the committee at the region's water irrigation meetings. One respondent from Community 2 shared that during her initial involvement with the kiosk installation and committee development her husband was not supportive. Nevertheless, the committee member continued fundraising for the kiosk by selling household animals and found that her husband was later supportive. The data indicates that men are a part of the gender equity process since relationships between men and women can hold a significant weight in the success of a kiosk and can have the influence to deter the involvement of a committee member. This is an avenue for an NGO to consider when working to change perceptions and behaviors.

### *Division of labor by gender*

Consumers and non-consumers express greater satisfaction with a service that is managed by people of the gender that aligns with their expectations for that specific gender and beliefs of their capabilities and responsibilities. When asked about his opinion regarding the fact that an AWC manages the water system in his community, a respondent in Community 2 shared that since women are more hygienic, their involvement in the service is appropriate. He continued to say that since men do not spend as much time cooking, they cannot learn as fast about hygiene as women can. For this respondent, these reasons make him consider the gender composition of the committee in Community 2, as all women, appropriate and in accordance with his assumptions about the capabilities of women.

In the three communities where the kiosk committees are mixed with women and men, Community 3, Community 4, and Community 5, consumers and committee

members explained that both men and women are necessary for the management of the system due to that which each can contribute. A total of five respondents from Community 3, Community 4, and Community 5 perceived that men need to be involved in the committee due to the physical labor involved and strength needed in transporting the garrafones. These five respondents believed that women are clean and organized, which is also perceived to be a necessary trait for managing a water system. The current committee members from Community 5 shared that when FCA initially presented the option to have an AWC, the meeting attendees responded that they preferred to have a MGC since managing the service required both the physical strength of men and the cleaning abilities of women. This led to a MGC in Community 5.

In accordance with the perceptions of community members, the process of distributing the garrafones to homes, schools, and local stores is one that is usually gendered. In Community 3, Community 4, and Community 5, the committee members that are men took on most of the distribution responsibilities. However, the tendency is varied for AWC. In Community 1, a service delivery option was not available. In Community 2, women from the committee delivered garrafones to homes by means of a carriage tricycle. The gendering of this task, however, even appears in Community 2 where the committee is all women. At times, some of the committee members' husbands helped distribute the garrafones with their vehicles. The responses show that people prefer the gender composition of the committees to align with their own beliefs about the capabilities and skills of women and men. In contrast with Community 1, where women are expected to not work outside of the household, the other four sites have a kiosk committee that aligns with the social and gender norms and expectations of the community. The beliefs that people have about the roles that women and men in their community can hold can drastically affect people's perceptions of the water service if the kiosk functions in a way that disrupts popular beliefs.

#### *Labor, time, and income*

Although time and income were not extensively expressed as factors that influence perception of the service, community members' and committee members' discussion of time and income paralleled gender norms. Men that volunteered as committee members expressed feeling certain pressures and expectations that women did not express about their role with the water committee. In Community 1 and Community 2, where the committee members are all women, time and income were not raised as concerns for their participation in the committee. Many of the committee members in Community 3, Community 4, and Community 5 explained that at the initial interest meetings for committee formations, hardly any attendees volunteered to participate in the committee for various reasons including conflicting responsibilities and obligations. The committee members from Community 3 shared that they do not have sufficient time to dedicate and they feel stretched for time between their several jobs and responsibilities in the community. One of the teachers at the elementary school

in Community 5 commented that if one of the male committee members were to want to find a paying job so that he could provide for his family, he would have to decrease his commitment to the kiosk. In other conversations in Community 5, community members expressed concern with the lack of income that the committee members receive. On the other hand, the AWC did not express the pressure that male volunteers feel to obtain an income, while maintaining their commitment to the kiosk.

Concerns that committee members expressed about commitments and income may be concerning for the longevity of a project, since in some communities a lack of interest in participation due to other pressing obligations preceded their participation in the committee. In addition to committee members, consumers also expressed several of the comments made about the labor, time, and income of the committee members. Based on concerns shared, labor, time, and income can shape the perceptions that people in a community have about the practical details of the socially oriented project; the experiences of these communities show that these expectations are different depending on the gender of the volunteer.

## **DISCUSSION**

The findings show that in communities where the distribution of responsibilities among committee members and differences in priorities between genders reflects the common roles of the household that men and women fill, the perceptions that community members have about the service are less influenced by the gender composition of the committee. In contrast, in communities where the gender of the individuals involved in the management does not uphold the social and gender norms of the community, people's perceptions are more influenced by this discordance. Findings further highlight the need to constantly evaluate factors that contribute to social perceptions of water quality and services, as studied and suggested by Doria.<sup>31</sup>

Non-governmental organizations and national and international institutions that seek to create local participation and gender equity in project execution can create more community sensitive and contextually appropriate projects with a thorough understanding of existing gender relations and previous experiences attributed to gender norms. An exploration of these topics with community members can be seen as an opportunity to engage in conversations about what the norms are and what changes the community would like to see regarding common practices. The findings together with the literature call into question whether the installation of a water system and creation of local management amidst gender relations and norms is a matter of complying with trends that already exist in communities, consciously disrupting expectations, or something different.

Accomplishing both gender equity and provision of a quality source of water is a challenge in development practice for securing a long-lasting and useful service to the community. However, this research points to the conclusion that through an enhanced understanding of social perceptions, an NGO that works to make sustainable

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<sup>31</sup>Miguel de Franca Doria.

improvements to access to safe drinking water can simultaneously create gender equity, women empowerment, and strong community participation. In doing so, the organization has potential to challenge and redefine the traditional mechanisms for achieving development goals.

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