



## Measuring Urban Sanitation and Empowerment (MUSE)



- **Purpose:**  
To develop and validate a scale to measure women's empowerment related to urban sanitation
- **Locations:**  
Dakar, Senegal; Kampala, Uganda; Khulna, Bangladesh; Lusaka, Zambia; Narsapur, Tiruchirappli, Wai, and Warangal, India
- **Target Population:**  
Women residing in urban settings

**Background:** Within the Water, Sanitation, and Hygiene (WASH) sector, the role of women and girls in household WASH provision is well documented. However, there are limited data on how and to what extent WASH conditions, interventions, and policies impact women's empowerment, or the extent that women's empowerment impacts WASH conditions. Further, there are no WASH-specific measures exist to assess empowerment.

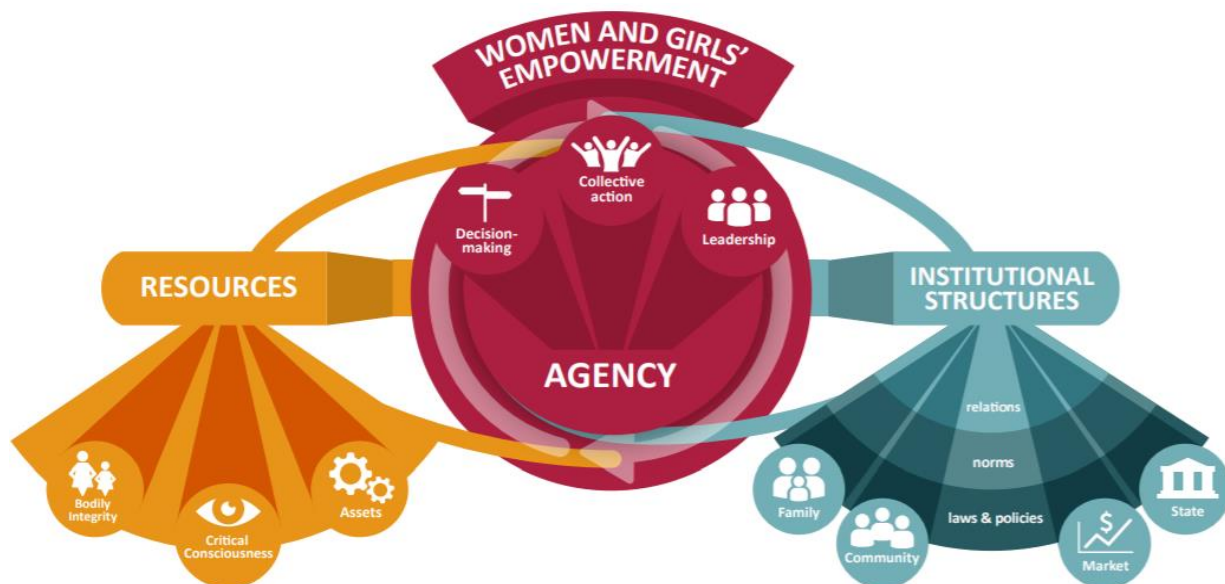
### Funder

BILL & MELINDA GATES foundation

### Research Team

Bethany Caruso, PhD, MPH  
Sheela Sinharoy PhD, MPH  
Amelia Conrad, MDP  
Madeline Patrick, MPH

Hubert Dept of Global Health  
& Gangarosa Dept. of  
Environmental Health  
Emory University



## Aim and Approach

Emory University, with funding from the Bill and Melinda Gates Foundation (BMGF), is creating and validating measures of women’s sanitation-related empowerment, focusing specifically on urban contexts. Our project, *Measuring Urban Sanitation and Empowerment (MUSE)*, operationalizes the conceptual model and definition of empowerment used by the BMGF and developed by Van Eerdewijk et. al.: *The expansion of choice and strengthening of voice through the transformation of power relations, so women and girls have more control over their lives and futures.*<sup>1</sup>Included within this concept of

empowerment are three domains—**agency**, **resources**, and **institutional structures**—which feed into and influence each other. Further, each of these domains includes sub-domains, as shown in their model on the preceding page.

## Application

Assessing sanitation-related empowerment broadly, and/or by the domains and sub-domains specifically, will enable stakeholders to understand women’s empowerment related to sanitation, and what programs, initiatives, and policies may be needed to make change.



## Scale Development Plan

Scale development involves four distinct phases.

**Phase 1:** Completed June 2019, involved: a literature review; a landscape analysis to assess, identify and adapt existing tools and indicators; and the development of draft tools, and is now complete. Phase 1 resulted in the development of 430 total survey items across the three domains of empowerment.

**Phase 2:** Completed October 2019, involved: cognitive interviews in two neighborhoods/settlements in two Citywide Inclusive Sanitation (CWIS) cities: Kampala, Uganda and Tiruchirappalli, India. Cognitive interviews helped to identify gaps and ensure the content validity of survey tools. A panel of experts also reviewed and provided feedback on the survey tools during this phase. Through these methods, the tool was refined and modified, resulting in 345 survey items. Modifications as a part of Phase 2 are presented in the table below.

**Phase 3:** During Phase 3, completed February 2020, Emory staff returned to Kampala and Tiruchirappalli to conduct a second, rapid round of cognitive interviews (to test and refine the language of the revised tools) and then to supervise implementation of the survey with approximately 1,000 women in each city, with retests conducted for ~80 women per city. Data analysis, involving exploratory and confirmatory factor analysis and item response theory approaches, and assessments of validity and reliability, is ongoing and will result in further modified (shortened) tools.

**Phase 4:** During Phase 4, we will deploy the refined tools across 6 additional CWIS cities in Bangladesh (Khulna), India (Narsapur, Wai, Warangal), Senegal (Dakar), and Zambia (Lusaka) to measure each domain and sub-domain of empowerment. Data from these cities will provide CWIS partners with a baseline assessment of empowerment for their programs while allowing for additional validation of the survey tool in these new contexts.

DOMAIN LEVEL OVERVIEW

Domain	Phase 1	Phase 2					Total
	Total	Eliminated	Keep – No Change	Keep – Modified	Added – General	Added – Menstruation Specific	
Resources	236	138	22	76	46	30	176
Institutional Structures	80	40	16	21	16	9	62
Agency	114	81	7	28	60	13	107
<b>TOTAL</b>	<b>430</b>	<b>259</b>	<b>45</b>	<b>125</b>	<b>122</b>	<b>52</b>	<b>345</b>

<sup>1</sup> VAN EERDEWIJK, A., WONG, F., VAAST, C., NEWTON, J., TYSZLER, M. & PENNINGTON, A. 2017. White Paper: A Conceptual Model of Women and Girls’ Empowerment. Amsterdam Royal Tropical Institute (KIT)

## Operationalized Definitions of Empowerment Domains and Subdomains

Domain	Sub-Domain	Working Operationalized Definition
AGENCY	Decision-Making	Women influencing and making decisions about sanitation inside and outside the home
	Leadership	Women assume leadership positions, effectively participate, and support women's leadership in informal and formal sanitation initiatives and organizations
	Collective Action	Women gain solidarity, increase collective efficacy, and take action collectively on sanitation-related issues
	Mobility	Women's autonomy to move freely to access sanitation facilities, collect water for sanitation-related needs, and/or attend forums on sanitation issues, and women's freedom of movement despite sanitation circumstances
RESOURCES	Bodily Integrity	Women's control over their bodies and ability to access and use their preferred sanitation location
	Safety and Security	Women's freedom from acts or threats of violence (physical or sexual), coercion, harassment, or force when accessing and using sanitation locations or engaging in sanitation-related decision-making processes in the public sphere
	Health	Women's complete physical, mental, and social well-being as affected by sanitation options and conditions; not merely the absence of disease or infirmity
	Privacy	Women's ability to maintain desired levels of privacy when accessing and utilizing sanitation locations
	Critical Consciousness	Women identifying and questioning how inequalities in power operate in their lives in relation to sanitation access and decision-making processes, and asserting and affirming their self-efficacy inside and outside of the household as it relates to sanitation
	Financial/Productive Assets	Women's control over economic resources and long-term stocks of value such as land, for the purposes of meeting individual and household sanitation needs
	Knowledge and Skills	Women's control over their time and labor spent on sanitation-related tasks and activities
	Time	Women's knowledge and skills related to sanitation (e.g. operation and maintenance of sanitation facilities) and their abilities to apply those knowledge and skills
	Social Capital	Women's relations and social networks that provide tangible and intangible value and support, including those that enable them to complete sanitation-related tasks and activities
INSTITUTIONAL STRUCTURES	Norms	Collectively held expectations and beliefs of how women and men should behave and interact inside and outside the household, specifically with regard to (a) the division of labor, (b) decision-making, (c) leadership, (d) collective action, and (e) mobility
	Relations	The interactions and relations – including conflicts, support, hostility, and communication – with key actors that shape women's sanitation-related experiences