Measurement and Validation of HH Water Security Scale (HWISE) in Mexico

PS 13.2.3: Public Opinion and Policymaking
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Sera Young (Northwestern University)
Rafael Perez Escamilla (Yale School of Public Health)
Graciela Teruel and Pablo Rossi (EQUIDE – UIA)
Mireya Vilar-Compte (Montclair)
Pablo Parás – Data OPM
Background: HH Food Security surveys in Mexico

• Starting in 2006 Data OPM conducted the first four surveys of ELCSA = food security at the HH level / including the first national measurement.

• CONEVAL, office in charge of measuring poverty in Mexico, used our 2008 national survey to complement its poverty indicators.

• INEGI (office of the census) has been measuring it annually for CONEVAL (n90K) ever since.

• Discussion in FAO 2010 meeting to measure food security on a global scale
WATER Security

• Basic human right = constant access to water to be able to satisfy basic drinking + hygiene + sanitation needs (SDG 6)

• Water security is correlated with food security

• 2018 UN panel call for higher-resolution data

• Experiences of use and access to water and food are more precise than measuring available quantities of water and food

Common available indicators

<table>
<thead>
<tr>
<th>Availability</th>
<th>Accessibility</th>
<th>Acceptability and Use</th>
</tr>
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<tbody>
<tr>
<td>Physically available</td>
<td>Physically accessible</td>
<td>Safe to consume</td>
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</table>

MX CENSUS 2020

3.5% = no running water
4.3% = no sewer system
Integral measurement

Graphic showing the four domains of water insecurity and depicts the following:

1. Availability: Whether or not water is physically available.
2. Accessibility: Whether or not water is physically, economically, or politically accessible. As well as weather or not it is culturally acceptable to acquire.
3. Use: Is the water acceptable and safe? For consumption? For non-ingestive uses?
4. Are domains 1 through 3 stable over time?
HWISE: Household Water InSecurity Experiences Scale

- Initial stage = 28 sites worldwide - HWISE sites were selected for maximal heterogeneity in region of the world, infrastructure, and problems with water

- 12 item one-dimensional scale about access, use and stability of water in the HH

- Time reference: experiences in previous 4 weeks

- Four response options: never (0), rarely (1), sometimes (2), always (3).

- 36-point index with a 12+ cut-point to estimate prevalence (insecurity)
<table>
<thead>
<tr>
<th>LABEL</th>
<th>ITEM</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worry</td>
<td>In the last 4 weeks, how frequently did you or anyone in your household worry you would not have enough water or all of your household needs?</td>
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<tr>
<td>Interrupt</td>
<td>In the last 4 weeks, how frequently has your main water source been interrupted or limited (e.g. water pressure, less water than expected, river dried up)?</td>
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<tr>
<td>Clothes</td>
<td>In the last 4 weeks, how frequently have problems with water meant that clothes could not be washed?</td>
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<tr>
<td>Plans</td>
<td>In the last 4 weeks, how frequently have you or anyone in your household had to change schedules or plans due to problems with your water situation? (Activities that may have been interrupted include caring for others, doing household chores, agricultural work, income-generating activities, sleeping, etc.)</td>
<td></td>
</tr>
<tr>
<td>Food</td>
<td>In the last 4 weeks, how frequently have you or anyone in your household had to change what was being eaten because there were problems with water (e.g., for washing foods, cooking, etc.)?</td>
<td></td>
</tr>
<tr>
<td>Hands</td>
<td>In the last 4 weeks, how frequently have you or anyone in your household had to go without washing hands after dirty activities (e.g., defecating or changing diapers, cleaning animal dung) because of problems with water?</td>
<td></td>
</tr>
<tr>
<td>Body</td>
<td>In the last 4 weeks, how frequently have you or anyone in your household had to go without washing their body because of problems with water (e.g., not enough water, dirty, unsafe)?</td>
<td></td>
</tr>
<tr>
<td>Drink</td>
<td>In the last 4 weeks, how frequently has there not been as much water to drink as you would like for you or anyone in your household?</td>
<td></td>
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<tr>
<td>Angry</td>
<td>In the last 4 weeks, how frequently did you or anyone in your household feel angry about your water situation?</td>
<td></td>
</tr>
<tr>
<td>Sleep</td>
<td>In the last 4 weeks, how frequently have you or anyone in your household gone to sleep thirsty because there wasn't any water to drink?</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>In the last 4 weeks, how frequently has there been no useable or drinkable water whatsoever in your household?</td>
<td></td>
</tr>
<tr>
<td>Shame</td>
<td>In the last 4 weeks, how frequently have problems with water caused you or anyone in your household to feel ashamed/excluded/stigmatized?</td>
<td></td>
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</tbody>
</table>

**HWise: 12 item scale**

3-4 minutes

_How often in the last 4 weeks have you or anyone in your household..._
32% of Mexican HH are water insecure
HWISE in Mexico

• Validation using other scales: FIES (food insecurity severity experience matrix) + GAD7 (general anxiety disorder) + WASH (water scarcity)

• Higher incidence in rural areas + women respondents

• Highly correlated with food insecurity and SEL

• Coming soon: experiment using a binary scale with rasch analysis to establish cut-off points to identify “levels” of insecurity
Relevance of HWISE


• A human voice to the water situation
• More proximal to well-being than just availability, infrastructure
• Able to “unpack” the complexity of the issue
• Comparable across time, infrastructure, climates, culture
• Quick to collect + simple to analyze
• “Sister” scale to the Food Insecurity Experience Scale
• Many uses: prevalence + targeting resources + impact evaluation
Relevance of HWISE

GRIT: an idea for WAPOR

Every year at the annual conference suggest a topic of research to its members/community and generate a Global Report on an Important Topic (GRIT)

www.hwise.org

pp@dataopm.net