SnT 2025 8 SEPTEMBER ONLINE DAY 9 TO 12 SEPTEMBER AT HOFBURG PALACE, VIENNA & ONLINE
CTBT: SCIENCE AND TECHNOLOGY CONFERENCE

Integrating public perception and science:

Understanding the Global Awareness of the CTBTO's Mission

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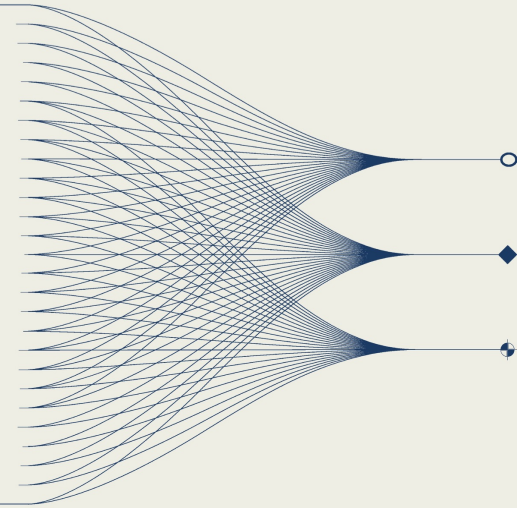
CTBTO PREPARATORY COMMISSION

INTRODUCTION AND MAIN RESULTS

This study examines how public perceptions of science and technology influence support for the CTBTO in Venezuela and Colombia. A mixed-methods approach was used to analyse survey data from 1.000 respondents (500 from each country) and conduct interviews with 20 policy experts and civil society leaders. The results revealed a strong positive correlation between trust in scientific institutions and CTBTO support (Spearman's rho = 0,65, $p < 0,001$). Media analysis of 56 articles showed that regions with higher coverage had 25% greater awareness of the CTBTO. The key findings are as follows: (1) **public awareness drives support** for disarmament, (2) **epistemic trust is fundamental** to acceptance of CTBTO monitoring and (3) **perceived institutional efficacy influences cooperation**. The study recommends culturally tailored outreach programmes, regional partnerships and citizen science initiatives to strengthen engagement. These insights emphasise the pivotal role of public trust in science for the effective governance of non-proliferation, particularly in Global South contexts.



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Introduction

The public's perception of scientific institutions is a key factor in determining the legitimacy and effectiveness of policy (Foladori & Martínez, 2021). In Global South contexts, entrenched disparities in knowledge production further erode public confidence in multilateral entities, which are often viewed as proxies of dominant powers (Acharya, 2019). The CTBTO's mission, which is to detect and deter nuclear weapons testing via a global verification network, relies not only on its technical capabilities, but also on the acceptance of its science-based mechanisms by diverse publics on a normative and cognitive level (Betancourt & Echeverri, 2023). This study examines how collective attitudes in Venezuela and Colombia influence, and are influenced by, the CTBTO's role, focusing on socioscientific literacy, institutional trust, and geo-cultural framing.

Survey data (**trust vs. CTBTO** support, ρ=0.65)

Geopolitical narratives as barriers

"**Science diplomacy** from below" model

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Methodology

A convergent mixed-methods design was adopted, a methodological approach that has been shown to facilitate the integration of diverse research methods (Smith, 2019).

- **Quantitative:** The survey was conducted using a stratified random sampling method, with a total of 1.000 participants included in the study. This sample was divided equally between individuals from Venezuela and Colombia, with 500 from each country. The survey participants were selected from the 18 to 65 age group and were balanced in terms of gender and educational level. The instruments employed in this study included a 7-point Likert scale for public-science trust ($\alpha = 0.89$) and a 5-point scale for CTBTO support.
- **Qualitative:** A total of twenty semi-structured interviews were conducted with policymakers, NGO leaders, and university researchers, who were selected via purposive sampling.
- **Media Analysis:** A content analysis was conducted on 56 articles from major outlets (El Universal, Últimas Noticias, El Tiempo, El Espectador) published between 2023 and 2024. The articles were coded for valence, frequency, and thematic emphasis.

Results

The findings confirm that **public awareness has a significant impact on support** for disarmament (Betancourt, 2024). There is a **strong correlation between trust in science and technology, and acceptance** of the CTBTO, which is consistent with the adapted Technology Acceptance Model (Davis, 1989). While institutional efficacy promotes cooperation, **geopolitical narratives can hinder progress** in the absence of meaningful dialogue (Acharya, 2019). **Results** from the Global South **reveal that epistemic marginalisation creates scepticism** towards multilateral science unless it is rooted in local knowledge systems (Rodríguez, 2022), thereby emphasising the critical role of bottom-up science diplomacy (Espinosa & Cárdenas, 2021).

Recommendations

The **development of Spanish-language materials**, co-authored with regional experts (Betancourt, 2023).

The **implementation of community monitoring workshops** with a view to fostering participatory epistemologies (Foladori & Martínez, 2021).

The **release of open-access**, lay summary reports on verification **data** has been demonstrated to enhance epistemic transparency (Shea, 2017).

Work with major Latin American outlets to provide regular CTBTO briefings and counter geopolitical scepticism.