



Short Communication

Informal Water Provision During Crisis: Rethinking Community-Level Social Intervention Delivery

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Abstract

Emergency social interventions delivered through fragmented service sectors routinely depend on actors who never appear in the formal implementation chain. In pandemic-era “free water” programmed across sub-Saharan Africa, tanker drivers, water-kiosk operators, and household resellers were frequently the ones who decided, in practice, who received water, at what price, and on what schedule — regardless of what national policy stipulated. Existing implementation frameworks (Grindle’s policy-delivery-system model; Mazmanian and Sabatier’s structural checklist) treat “the implementer” as a bounded public agency and treat informal actors, when they appear at all, as a contextual obstacle rather than as agents of implementation in their own right. This short communication proposes a theoretical extension: informal, non-state, non-salaried actors who exercise discretion at the point of service delivery can be understood through Lipsky’s street-level bureaucracy theory and the boundary-spanning literature, even though they hold no formal state appointment. We term this composite role the “informal street-level implementer” and outline three propositions this concept generates about goal displacement, discretionary rationing, and legitimacy under resource scarcity. We close with a proposed comparative multi-country study design - using Ghana, Kenya, and India as contrasting cases of pandemic-era water interventions - to test whether this framework better explains implementation variance than agency-centred models alone.

Keywords: Street-level bureaucracy; Implementation science; Informal institutions; Boundary spanners; Water governance; Emergency social policy.

Introduction

Implementation research has long distinguished between policy formulation and policy delivery, treating the gap between the two as the central object of study. Classic determinant frameworks ask what features of a policy’s design, or what characteristics of the implementing agency, predict whether a stated objective is actually achieved. These frameworks work reasonably well when the implementer is a single, identifiable bureaucracy with clear lines of authority down to the point of service delivery [1].

That assumption breaks down in sectors — water supply

across much of the Global South being a paradigm case — where formal utilities cover only a fraction of the population and the remainder is served through informal vendors, tanker operators, kiosk managers, and resellers who operate alongside, not beneath, the formal agency. Evaluations of these programmed in Ghana consistently found that outcomes on the ground diverged sharply from the policy as announced: some households received water for free, others continued paying discounted or full rates, and coverage depended heavily on which informal actor served a given neighborhood.

The standard explanation for this divergence, in the implementation literature on Ghana’s free water policy

specifically, has centered on two determinants: the abruptness of the policy announcement, which foreclosed consultation with the formal implementing agency, and the “complex context” of the water sector, meaning its structural fragmentation between formal and informal provision. Both explanations are well supported. Yet both stop at the boundary of the formal implementing agency. Neither systematically theorises the informal actors themselves as implementers who exercised discretion, rationed access, and in effect rewrote the policy at the point of delivery — which is precisely how implementation scholars treat frontline public employees [2].

Theoretical extension: From formal street-level bureaucrats to informal street-level implementers

Street-level bureaucracy theory revisited

Lipsky's (1980/2010) street-level bureaucracy theory holds those frontline public workers - teachers, police officers, caseworkers — inevitably exercise discretion because their working conditions (resource scarcity, ambiguous mandates, high caseloads relative to capacity) make full compliance with formal rules impossible. Through the accumulation of individually reasonable coping decisions, frontline workers collectively determine what a policy actually becomes in practice; the policy “as experienced” is made at the front line, not at the point of legislative or executive authorization. Subsequent applications of the theory to low- and middle-income country health systems have shown that street-level discretion is, if anything, more consequential where formal state capacity is thin [3].

Lipsky's model was built around salaried state employees. Informal water vendors are neither state employees nor, typically, salaried at all; many operate as small businesses whose income depends directly on the water they sell. This is precisely why the existing water-implementation literature treats them as part of the “context” rather than as implementers proper. We argue this framing understates their structural position: during an emergency intervention that is routed through them, informal vendors face the same core condition that defines street-level bureaucrats — an authoritative instruction (serve users according to a stated rule) delivered without the resources, compensation certainty, or enforcement mechanism needed to guarantee compliance, under conditions where demand exceeds what can be met on the terms specified. Whether the worker is salaried or fee-dependent is a difference in incentive structure, not a difference in structural position [4].

Boundary-spanning theory as a complementary lens

A second body of theory strengthens this extension. The boundary-spanning literature, developed mainly in organisational and science-policy studies, describes actors who sit at the interface between formal institutional systems and informal networks, translating and mediating between the two [5]. Boundary spanners are typically embedded in the community they serve, hold no formal authority over the systems they connect, and derive their functional importance from occupying a position that formal institutions cannot reach unaided. Tanker drivers and kiosk operators fit this description closely: they were, in the Ghanaian case, deliberately recruited by the formal utility precisely because the utility's own pipeline network could not reach the neighbourhoods in question (a pattern also documented for Kenya's informal settlements; GSDRC, 2020) [6].

Read together, street-level bureaucracy theory explains why informal vendors exercised discretion once enrolled in the intervention, while boundary-spanning theory explains why the state depended on them to reach populations at all. We use the term informal street-level implementer to denote an actor who combines both positions: functionally indispensable to reaching excluded populations and structurally positioned to exercise unmonitored discretion over who is served [7].

Locating the extension within existing determinant frameworks

This extension does not replace Grindle's (1980) or Mazmanian and Sabatier's (1983) frameworks; it adds a determinant category that both frameworks under-specify. Grindle's model treats “content” and “context” as the two broad determinants of implementation outcomes; informal street-level implementers sit inside “context” in the existing literature but behave, empirically, like a content-shaping force — because their rationing decisions are what most directly determine who experiences the policy's stated benefit. Mazmanian and Sabatier's six-point checklist for effective implementation includes “adequate structuring of the implementation process,” which implicitly assumes the process can be structured because its participants are identifiable and formally accountable. Where implementation is routed through informal actors with no contractual accountability to the policy's goals, this checklist item cannot be satisfied by design, independent of how well the formal agency performs. Naming this condition explicitly — rather than absorbing it into a

general “context” variable — makes it possible to compare cases and generate testable propositions, which we set out next (5).

Propositions

Building on this extension, we advance three propositions intended to guide future empirical work:

Proposition 1 (Discretionary rationing under reimbursement uncertainty):

Where informal implementers bear the upfront cost of service delivery and depend on delayed government reimbursement, the rate and duration of their compliance with the policy’s stated terms will track their assessment of reimbursement reliability more closely than it tracks formal monitoring or sanctions — because, absent a salary, exit from the arrangement is a rational coping strategy in Lipsky’s sense, not a compliance failure in the ordinary sense [8].

Proposition 2 (Coverage follows pre-existing boundary-spanning relationships):

Populations already served by an informal vendor before an emergency intervention are more likely to receive the intervention’s benefit than populations without such a pre-existing relationship, independent of formal eligibility criteria — because boundary-spanning relationships, once established, are the actual channel through which the intervention travels, and channels are not instantly created by policy announcement.

Proposition 3 (Legitimacy substitutes for enforcement):

In the absence of effective monitoring of informal implementers (a documented gap in the Ghanaian case), continued compliance with the intervention’s terms will depend more on the vendor’s perceived social standing and repeat-dealing relationship with the served community than on any formal enforcement mechanism, since formal mechanisms are largely absent at this level of the delivery chain [9,10].

Methodology

Propose a comparative, multi-country qualitative case study design to test these propositions, extending rather than replicating single-country studies of Ghana’s free water policy [11,12].

A comparative case study across three countries whose pandemic-era water interventions relied to varying degrees on informal delivery: Ghana (free water policy,

2020, delivered partly through tanker drivers and household vendors), Kenya (targeted provision to informal settlements delivered partly through community water kiosks; GSDRC, 2020), and one South or Southeast Asian case with comparable informal water-vending infrastructure, to be confirmed at the scoping stage. Cases are selected to vary on the proposed moderating variable — the density and formalization of pre-existing informal vending networks — while holding the policy type (pandemic emergency water provision) constant, following a most-different-systems logic [8].

Participants and sampling. Purposive sampling of three respondent categories per country: (a) formal utility officials involved in intervention design or oversight, (b) informal implementers (tanker drivers, kiosk operators, household vendors) who participated in the intervention, and (c) household recipients, stratified by connection status (piped, unconnected-served, unconnected-unserved). A target of 15–25 respondents per country is proposed, consistent with recommended qualitative case-study ranges [13].

Data collection. Semi-structured interviews, supplemented by short structured questions capturing reimbursement timelines, service continuity, and pricing behaviour over the intervention period, to allow limited within-case comparison across implementers. Documentary analysis of government directives, utility statements, and contemporaneous news coverage, as a form of triangulation [14].

Analysis. Thematic analysis using a hybrid coding frame: deductive codes derived from the three propositions above, and inductive codes allowed to emerge from the data, consistent with standard qualitative case-study practice. Cross-case comparison will focus on whether variation in discretionary rationing, coverage patterns, and compliance duration tracks the moderating variable (density of pre-existing informal networks) as predicted [15].

Conclusion

Implementation science has productively theorized the gap between policy formulation and policy delivery for four decades, but its core frameworks still implicitly assume a formally accountable implementer. Emergency social interventions delivered through hybrid formal–informal service sectors — of which water is only one example, alongside informal transport, informal housing, and informal health provision — routinely violate that assumption. Reframing informal vendors, drivers, and kiosk operators as street-level implementers, rather than

as background context, does not diminish the explanatory power of existing determinant frameworks; it gives them a missing variable. The propositions and comparative design outlined here are offered as a starting point for testing whether this reframing improves our ability to predict, and not merely describe, why well-intentioned emergency interventions so often fail to reach the populations they name as their intended beneficiaries.

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