MO-02 Participatory budgeting from Porto Alegre to the world

The advent of participatory budgeting (PB) at the close of the twentieth century stands as one of the most rigorously documented democratic innovations in the contemporary political economy. Emerging from the post-dictatorship democratic transition in Brazil, the mechanism was explicitly engineered to bypass deeply entrenched clientelist networks, redistribute scarce public resources to structurally marginalized populations, and democratize the rigid bureaucratic processes of municipal finance. From its highly localized genesis in the Global South, the practice has diffused across the globe, adapting to vastly different political economies and yielding a highly varied spectrum of outcomes. These outcomes range from statistically profound reductions in infant mortality to instances of superficial administrative tokenism. To evaluate the viability of participatory governance frameworks for populations rebuilding complex organizational structures in a post-collapse environment, it is necessary to disaggregate the structural mechanics of participatory budgeting, isolate its empirical causal variables, and map its inherent vulnerabilities to elite capture and administrative decay. The historical record demonstrates that while decentralized resource allocation can fundamentally alter survival metrics, it is simultaneously fragile, prone to co-optation, and heavily dependent on robust administrative capacity.

Arrangement 1: The Porto Alegre Model (1989–2004)

In 1989, following twenty-one years of military dictatorship, the left-wing Workers' Party (*Partido dos Trabalhadores*, or PT) assumed municipal power in Porto Alegre, the capital of the Brazilian state of Rio Grande do Sul[1]. Inheriting a nearly bankrupt city hall, the PT struggled initially to implement its redistributive agenda[3]. The institutional solution they engineered was the *Orçamento Participativo*, a framework designed to directly involve non-elected citizens in the allocation of municipal capital investments[4].

The structural design of the Porto Alegre model was exceptionally complex and intended to break the traditional patron-client networks that had historically dictated urban resource allocation, where infrastructure was often granted as a political favor (*amiguismo*) in exchange for votes[6]. The city was divided into sixteen geographic administrative regions, supplemented by six thematic assemblies covering city-wide issues such as transportation, health, and education[3].

The annual PB cycle operated through a highly structured, sequential process. The cycle commenced with neighborhood-level assemblies where citizens deliberated on local needs and elected delegates[6]. These delegates then progressed to district-level forums to negotiate and prioritize projects, culminating in the formation of a municipal budget council (*Conselho do Orçamento Participativo*)[7]. Crucially, the final allocation of funds was not arbitrary but governed by a rigid quantitative matrix. Resources were distributed based on a weighted formula that calculated the total population of a region, the severity of unmet basic needs (quantified by the lack of paved roads, sanitation, or electricity), and the priority ranking

assigned to these needs by the citizens themselves[7].

Ethnographic and political science assessments by scholars highlight that the early success of the Porto Alegre model rested on its binding nature and definite timelines. In her 2000 book *Inventing Local Democracy: Grassroots Politics in Brazil*, Rebecca Abers noted that when citizens recognized that their deliberations resulted in concrete, funded projects with strict execution timelines, participation surged[3]. Similarly, Gianpaolo Baiocchi, in his 2005 work *Militants and Citizens: The Politics of Participatory Democracy in Porto Alegre*, observed a "synergizing" effect on civil society; rather than merely engaging in protest activity, social movements transitioned into institutional actors, acquiring technical competencies and a sophisticated understanding of municipal finance[6]. By the turn of the twenty-first century, approximately 20,000 citizens were participating annually in these popular assemblies, actively directing the distribution of roughly $160 million in municipal investments, which represented between 9.8% and 21% of the total municipal budget[4].

During this period (1989–2004), the physical and social landscape of the city was measurably transformed. Prior to PB, less than 75% of households were connected to the municipal sewage system; within eight years, this metric rose to 85%[6]. Street paving expanded from an average of four kilometers per year to twenty kilometers per year, and the number of municipally run schools tripled[6].

Despite these monumental achievements, the Porto Alegre model entered a period of terminal decline following 2004. The electoral defeat of the Workers' Party at the municipal level ushered in administrations with diminished political commitment to participatory governance[1]. The decline was exacerbated by a severe fiscal crisis; by 2003, the city administration presented a budgetary deficit to the PB participants for the first time, resulting in widespread project delays[14].

The sociologist Sérgio Baierle, in his 2003 article "The Porto Alegre Thermidor: Brazil's 'Participatory Budget' at the Crossroads" published in the *Socialist Register*, diagnosed this decay precisely[15]. Baierle observed that as the novelty of the mechanism faded and municipal fiscal resources evaporated, the system became co-opted. The participatory bodies that once fostered a dynamic "plebeian public sphere" devolved into arenas of state dependency, where civil society organizations became mere administrative appendages of the municipal bureaucracy, stripped of their radical redistributive edge[3]. By 2014, the Brazilian Institute for Geography and Statistics reported a sharp decline in robust PB programs nationwide, dropping from 271 active budget councils in 2001 to a mere 47, with the majority reduced to "restricted" programs functioning as empty administrative shells[6].

Claims, Records, and Inferences: Porto Alegre

What its proponents said it did: The architects of the Porto Alegre model claimed it eradicated clientelism, empowered the poorest citizens to dictate macroeconomic priorities, reversed decades of spatial inequality, and served as a highly scalable blueprint for "empowered participatory democracy" capable of replacing traditional representative failures.

What the historical record shows: The physical record confirms massive, localized infrastructural transformations in the early years of implementation. Hundreds of millions of

dollars were measurably redirected toward slum electrification, water connectivity, and school construction in specific geographies between 1989 and 2004. The record also definitively shows that the arrangement was highly vulnerable to fiscal insolvency and regime change, with participation collapsing when funds dried up and political will evaporated post-2004.

What modern scholarship infers: Contemporary scholarship infers that PB in its original form is not a panacea for state democratization, but rather a highly effective, yet fragile, allocative mechanism. It acts as a temporary shock to institutional inertia. Scholarship concludes that its most profound, verifiable effect is the reallocation of resources away from high-leverage infrastructure toward recurring health and sanitation operations.

Scale Ledger: Porto Alegre Model

Scale (Population)	Efficacy & Viability	Reasoning
Household (4–10)	Never Tried / Unnecessary	Complex delegate structures and mathematical formulas are entirely superfluous for household calorie and resource distribution, which relies on informal consensus.
Hamlet/Band (30–50)	Never Tried / Unnecessary	Formal PB is too bureaucratic. Face-to-face allocation requires no thematic assemblies or delegate election cycles.
Village (150–500)	Functional	Neighborhood assemblies operated at this scale effectively in Porto Alegre, serving as the foundational tier where initial needs were debated and delegates elected.
Parish/District (1,500–5,000)	Optimal	Matches the regional assemblies of Porto Alegre. Information remains localized enough for citizens to verify project execution visually, while

		population size justifies formal delegate systems.
Town/Watershed (15K–50K)	Highly Effective	The scale at which the full Porto Alegre model optimized. Required thematic assemblies and the "unmet basic needs" matrix to successfully adjudicate competing district claims across a complex urban landscape.
Region (0.5M–5M)	Vulnerable	Porto Alegre itself (pop. ~1.5 million) functioned here but showed severe strain. Bureaucratic bottlenecks emerge, and citizens lose direct line-of-sight to the outcomes of their voting, decreasing trust.
Nation/Continent (50M+)	Failed / Never Tried	Information asymmetry is too vast. Citizens cannot accurately assess the macroeconomic trade-offs required for national infrastructure using neighborhood-level participatory mechanisms.
Planet (8 Billion)	Impossible	Violates all constraints of information processing, cultural cohesion, and deliberative capacity.

Capture Test: Porto Alegre Model

Dark Triad Trait	Attack Vector & Capture Mechanism	Historical Case Examples	Resistance / Reversal Features
Narcissism	Dominates the deliberative microphone. Uses open neighborhood assemblies for grandstanding, steering funding toward highly visible, prestige projects rather than invisible necessities (sewers).	Post-2004 middle-class participants dominating thematic assemblies to push for aesthetic urban planning over basic sanitation[4].	Strict facilitation protocols; the quantitative "unmet basic needs" formula overriding loud voices by mathematically weighting objective deprivation.
Machiavellianism	Exploits the delegate election process. Organizes voting blocs to direct funds to specific neighborhoods, trading votes for personal loyalty (re-establishing clientelism within PB).	Politicians using PB grants to buy electoral support as the PT lost its monopoly on the process in the mid-2000s[6].	Binding quality-of-life matrices (funds allocated by objective deprivation metrics, not just vote counts); frequent rotation of delegates.
Psychopathy	Uses intimidation to suppress rival project proposals. Embezzles capital funds at the execution layer, knowing the assembly has limited post-execution audit power.	Instances where physical intimidation at early assemblies deterred middle-class or rival neighborhood participation[16].	Total transparency in project accounting; vesting assemblies with post-execution audit authority; computerizing the project tracking system for public oversight.

The Empirical Core: Causal Evidence of Outcomes

The redistributive efficacy of the original Brazilian PB model has been subjected to rigorous empirical evaluation, separating narrative enthusiasm from causal reality. In a landmark study published in *World Development* in 2014, titled "The Effects of Participatory Budgeting on Municipal Expenditures and Infant Mortality in Brazil," researcher Sônia Gonçalves analyzed panel data spanning from 1990 to 2004 across a massive sample size of 5,564 Brazilian municipalities[12].

Utilizing a fixed-effects methodology to control for unobserved, time-invariant municipal characteristics, Gonçalves demonstrated that municipalities adopting PB fundamentally altered their public spending patterns[21]. Specifically, PB adoption increased the proportion of the municipal budget allocated to health and sanitation by two to three percentage points—representing a massive 20% to 30% increase relative to the baseline mean of that category's budget share in 1990[18]. This reallocation generated a highly significant, quantifiable outcome: municipalities that adopted participatory budgeting registered a significant drop in infant mortality of between one and two infants per 1,000 live births[12].

Corroborating these findings, Michael Touchton and Brian Wampler (2014), in their study "Improving Social Well-Being Through New Democratic Institutions" published in *Comparative Political Studies*, analyzed the long-term impacts of PB across Brazilian municipalities[22]. Their analysis demonstrated that the relationship between participatory budgeting and the reduction in infant mortality strengthens over time, indicating that PB is not merely a short-term shock but requires sustained institutionalization to overcome bureaucratic inertia and finalize complex sanitation projects[25].

The underlying mechanism driving this change was a structural inversion of priorities. Local officials, driven by electoral cycles, traditionally favored highly visible, capital-intensive infrastructure projects that functioned as immediate patronage[27]. PB forced a shift toward continuous social welfare expenditures and localized, less visible sanitation improvements. Because government budgets are finite, the prioritization of social equity effectively "crowded out" the fiscal space available for debt-driven expansion and vanity projects[27]. By reallocating funds from high-leverage investment sectors to low-leverage public service sectors, PB directly aligned public spending with the immediate biological survival needs of the most vulnerable demographic strata.

Arrangement 2: Kerala’s People’s Plan Campaign (1996)

Parallel to the evolution of PB in Brazil, the Indian state of Kerala initiated an unprecedented experiment in democratic decentralization at an even more massive scale. Launched in 1996 by the Communist Party of India (Marxist) government, the People's Plan Campaign (PPC) devolved roughly 35% to 40% of the state's developmental expenditures directly to local government bodies[28]. This covered 1,214 local entities, including 14 District Panchayats, 152 Block Panchayats, and hundreds of Gram (village) Panchayats[28].

Analyzed extensively by T.M. Thomas Isaac and Richard W. Franke in their 2002 book *Local*

Democracy and Development: The Kerala People's Campaign for Decentralized Planning, alongside sociologist Patrick Heller's 2001 work "Moving the State," the Kerala model was fundamentally designed to use grassroots planning as a vehicle for mass political mobilization[28]. The decentralized planning process was structured across five distinct stages, beginning with the *Gram Sabhas* (open village assemblies) held at the ward level[28]. In these assemblies, citizens identified local development deficits and formed sectoral Task Forces to draft actionable project proposals[28].

The sheer scale of participation was staggering, heavily reliant on the mobilization of approximately 50,000 volunteers through the Kerala Sastra Sahitya Parishad (KSSP)[34]. In the first two years of the campaign, an estimated 1.8 million people attended the planning Gram Sabhas[28]. Demographic inclusion was structurally mandated; women constituted 41% of participants[28]. Specialized sub-assemblies, such as *Mahila Sabhas* (women's assemblies) and *Bal Sabhas* (children's assemblies), were instituted to ensure that the priorities of marginalized demographics were formally integrated into the broader Panchayat Development Reports before local elites could filter them out[29].

The empirical outcomes of the Kerala People's Plan mirror the physical improvements seen in early Porto Alegre. In Kasargod district, panchayats installed solar microgrids to reduce diesel use in remote tribal areas; in Kochi, local councils partnered with youth groups to plant over 100,000 mangrove saplings alongside coastal zones to prevent erosion[29]. In the tribal region of Attappadi, 10% of the panchayat budget was strictly reserved for housing, nutrition, and health services for tribal families, resulting in a 40% drop in infant deaths over a five-year period[29]. The state institutionalized this participatory governance as a permanent feature of Kerala's development architecture by integrating local budgetary support into the state's annual plan outlay[29].

However, the Kerala model also exhibited pronounced failure modes. Despite the sophisticated institutional design, ethnographers documented severe instances of elite capture, wherein local landlords or dominant caste figures dictated the consensus of the Gram Sabhas[29]. Anthropological studies noted that in some panchayats, marginalized castes (Dalits) remained entirely silent during assemblies, knowing that opposing dominant landowners carried severe socio-economic consequences outside the assembly[36]. Furthermore, attendance fell over time as the initial mobilization energy waned; meetings became perfunctory, with local officials merely ratifying pre-determined agendas, undermining the transformative intent of the campaign and generating deep apathy[28].

Claims, Records, and Inferences: Kerala People's Plan

What its proponents said it did: The architects claimed it systematically dismantled the bureaucratic hegemony of the state government, transferring ultimate fiscal sovereignty to the village level, and permanently elevating the political consciousness of the rural poor and marginalized castes.

What the historical record shows: The record confirms an unprecedented mobilization of 1.8 million citizens and the successful execution of highly localized, ecologically appropriate infrastructure (solar grids, mangroves). However, it also shows significant geographical

unevenness; while some panchayats flourished, others immediately fell under the control of traditional caste hierarchies, resulting in low attendance and tokenistic participation in subsequent years.

What modern scholarship infers: Scholars infer that decentralization without intense, sustained, and organized civil society support (like the KSSP volunteers) inevitably defaults to local elite capture. The sheer volume of devolved funds (35–40%) made the panchayats a highly lucrative target for local political operators, demonstrating that massive funding transfers must be accompanied by equally massive capacity-building to prevent corruption.

Scale Ledger: Kerala People's Plan

Scale (Population)	Efficacy & Viability	Reasoning
Household (4–10)	Never Tried	Irrelevant scale for public works planning.
Hamlet/Band (30–50)	Effective	Sub-ward assemblies functioned well for identifying highly specific local deprivations (e.g., single water sources).
Village (150–500)	Optimal	The fundamental unit of the Gram Sabha. Permitted direct face-to-face deliberation, though heavily vulnerable to existing social hierarchies.
Parish/District (1,500–5,000)	Optimal	The Block Panchayat level functioned effectively to aggregate village demands and allocate larger infrastructural resources (e.g., connecting roads).
Town/Watershed (15K–50K)	Functional	District Panchayats managed cross-block coordination, though reliance on elected representatives at this scale diluted direct citizen

		control.
Region (0.5M–5M)	High Friction	The state level struggled to process the sheer volume of micro-plans generated from the grassroots, requiring massive volunteer labor to translate localized desires into technical state budgets.
Nation/Continent (50M+)	Failed / Never Tried	India's federal structure prevents direct citizen budgeting at the national scale due to overwhelming complexity and distance from local realities.

Capture Test: Kerala People's Plan

Dark Triad Trait	Attack Vector & Capture Mechanism	Historical Case Examples	Resistance / Reversal Features
Narcissism	Dominates the Gram Sabha through charismatic authority, silencing lower castes or women to ensure their preferred projects receive priority.	Documented instances of dominant caste members monopolizing speaking time, resulting in silent compliance from marginalized participants[36].	Sub-assemblies (*Mahila Sabhas* for women, *Bal Sabhas* for children) passing binding resolutions that *must* be integrated into the main report[29].
Machiavellianism	Captures the sectoral Task Forces. While the assembly votes on	Bureaucrats and local contractors colluding to design infrastructure	The requirement that officials from health, agriculture, and public works

	broad goals, the Machiavellian operator writes the technical project specs, directing contracts to allies.	projects that benefit specific landholdings[29].	publicly present all technical data directly to the assembly for approval[29].
Psychopathy	Uses economic intimidation outside the assembly (e.g., threatening employment) to guarantee votes inside the assembly.	Landlords intimidating landless laborers prior to the Gram Sabha to prevent the allocation of resources to tribal hamlets[36].	Mass mobilization by external organizations (KSSP) to provide political cover and solidarity for vulnerable populations.

Arrangement 3: Global Diffusion and "PB-Lite" (Europe and North America)

While the authentic Porto Alegre model withered domestically, the conceptual framework experienced rapid global diffusion. Yves Sintomer, Carsten Herzberg, and Anja Röcke, in their 2016 book *Participatory Budgeting in Europe: Democracy and Public Governance*, extensively documented this transnational proliferation, identifying over 11,000 cities worldwide that had adopted some form of PB[5]. Sintomer et al. metaphorically termed the migration of this Latin American innovation to Europe as "the return of the caravels," noting that the European and North American adaptations diverged significantly from their radical Brazilian progenitor[5].

The application of PB in the Global North has frequently devolved into what critics term "PB-lite." While Porto Alegre allocated upwards of 20% of its total budget through binding participatory mechanisms that sought to invert spatial inequality, initiatives in North America and Europe often confined PB to trivial, non-binding discretionary funds controlled by individual council members[12]. In these contexts, PB functions more as a civic consultation exercise than a redistributive mechanism.

However, there are notable exceptions of scale. In 2014, Paris Mayor Anne Hidalgo launched a highly ambitious digital participatory budget, allocating €100 million to be decided directly by citizens[41]. This massive capital injection represented a serious attempt to adapt the model to a major European metropolis, prioritizing eco-friendly transportation and public housing. Conversely, other European models, such as the implementation in Lisbon starting in 2008, faced severe bureaucratic bottlenecks. Project execution delays severely damaged public trust, highlighting a persistent failure mode: if a municipality lacks the administrative capacity to execute citizen-selected projects promptly, the participatory mechanism breeds cynicism rather than civic engagement[43].

In the United States, Chicago initiated the first PB process in 2009, followed shortly by New York City (PBNYC) in 2011[12]. By the 2014–2015 cycle, PBNYC saw 70,000 voters allocating $43 million across 198 projects[44]. The institutional design of PBNYC introduced unique rules intended to maximize inclusion, notably allowing residents as young as 11 years old (or in the 6th grade) to act as delegates, provided they had a "meaningful connection to the district" (e.g., attending school or living there)[45].

Yet, the evolution of PBNYC exposed a critical vulnerability regarding technological implementation. The introduction of digital voting (i-voting) resulted in a 44% increase in overall voter turnout in the year it was introduced[46]. However, it drastically altered the demographic composition of participants[46]. Prior to i-voting, offline PB voting successfully engaged traditionally underserved communities (in the 2014–2015 cycle, 52% were people of color and 46% reported household incomes under $50,000)[44]. The digital divide subverted this; nearly 30% of NYC households lacked internet access[46]. Consequently, i-voting skewed the electorate, resulting in an overrepresentation of highly educated, higher-income, and white demographics, contravening the original redistributive ethos of PB and shifting the focus toward projects favored by the upper-middle class (e.g., park renovations over public housing repairs)[12].

Claims, Records, and Inferences: PB-Lite (North America / Europe)

What its proponents said it did: Mayors and council members claimed PB-lite empowered local residents, educated them on the complexities of municipal finance, and provided a direct, democratic avenue to fund community-level improvements like school computers and park benches.

What the historical record shows: The record indicates that PB-lite successfully engaged tens of thousands of citizens in civic discourse, but only ever controlled a trivial fraction of overall municipal budgets (often less than 1%). The record also shows that technological "upgrades" like digital voting fundamentally altered the demographics of participation, heavily favoring the affluent.

What modern scholarship infers: Modern scholarship infers that PB-lite operates primarily as a tool for political legitimation and incumbent popularity rather than structural redistribution. By confining citizen control to marginal discretionary funds, the state apparatus safely absorbs the demand for democratic participation without surrendering actual macroeconomic authority.

Scale Ledger: PB-Lite (North America & Europe)

Scale (Population)	Efficacy & Viability	Reasoning
Household (4–10)	Never Tried	Irrelevant to municipal discretionary funding.
Hamlet/Band (30–50)	Functional	Neighborhood block associations effectively utilized PB-lite funds for

		highly specific local interventions (e.g., a community garden).
Village (150–500)	Optimal	Functions well as an organizing unit for proposing specific capital improvements to city council members.
Parish/District (1,500–5,000)	Optimal	The scale at which PBNYC project expos and delegate assemblies operate, allowing for localized debate over discretionary funds.
Town/Watershed (15K–50K)	Highly Vulnerable	Without binding matrices to ensure equity, wealthier districts at this scale naturally organize faster and capture the majority of the competitive PB grants.
Region (0.5M–5M)	Failed	At the city-wide level (e.g., NYC), PB-lite fails to address systemic issues (mass transit, deep infrastructure) because the funds are restricted to hyper-local capital projects.
Nation/Continent (50M+)	Never Tried	The tokenistic nature of PB-lite makes it meaningless at a macroeconomic national scale.
Planet (8 Billion)	Impossible	Violates all constraints of information processing.

Capture Test: PB-Lite

Dark Triad Trait	Attack Vector & Capture Mechanism	Historical Case Examples	Resistance / Reversal Features
Narcissism	Council members using the PB process solely as a re-election PR tool, ignoring the structural needs of the district to fund highly visible, easily photographed projects.	Widespread across US municipalities where PB is adopted informally to boost incumbent popularity without legal codification[44].	Legally codifying PB into the city charter, removing it from the discretionary control of individual politicians.
Machiavellianism	Well-resourced neighborhood associations using digital voting (i-voting) campaigns to overwhelm poorer neighborhoods, capturing all funds for their own aesthetic upgrades.	PBNYC post-digital voting, where university-educated and wealthier demographics dominated the vote outcomes[44].	Restricting voting to physical polling stations in low-income areas, or applying equity-weighting formulas to the final vote tallies.
Psychopathy	Bureaucrats intentionally delaying project execution for years to breed cynicism, ultimately utilizing the allocated funds to plug other municipal deficits quietly.	Lisbon and other European cities experiencing massive execution delays, resulting in citizen apathy and PB decline[43].	Public, legally binding tracking systems with mandatory quarterly updates on project execution status.

The Strongest Case Against Participatory Budgeting

The leading scholarly critiques of participatory budgeting are articulated by political scientists Benjamin Goldfrank and Matthew Ryan. Their analyses systematically dismantle the utopian narratives surrounding PB, focusing on its structural inadequacies, administrative paradoxes, and unintended socio-political consequences.

Goldfrank (2006, 2011), in works such as *Deepening Local Democracy in Latin America*, argues that the success of PB is highly contingent on a fragile, rare convergence of factors: resolute mayoral support, abundant discretionary financing, and a pre-existing, highly mobilized civil society[16]. When these conditions are absent, PB frequently fails or becomes counterproductive.

The most damaging critique leveled by Goldfrank is that PB, particularly in contexts of extreme scarcity, pits "poor against poor"[17]. Instead of uniting marginalized communities to demand systemic, structural reform from the central government, PB forces impoverished neighborhoods into vicious, zero-sum competition over minuscule fractions of the municipal budget. As one PB delegate in Belo Horizonte noted, "PB pits poor against poor to fight over small projects. Instead of working together, we are in competition against other poor neighborhoods"[17]. This dynamic fractures working-class solidarity, exhausts civic energy in endless meetings, and absolves the state of its macro-responsibility to provide universal basic services.

Furthermore, Goldfrank and Ryan both highlight the persistent "black box" of bureaucratic failure. Ryan's (2021) analysis of negative cases, such as the implementation in Bogotá, demonstrates that even with high social capital and political will, bureaucratic rigidity, a lack of intersectoral coordination, and the inability to establish cross-cutting financial instruments doom PB initiatives[16]. If the administrative state lacks the technical, engineering, or legal capacity to build the sewer lines voted upon by the assembly, PB simply becomes a highly efficient mechanism for generating broken promises, breeding deeper cynicism than if the mechanism had never been introduced.

Finally, critics point to the fundamental lack of enforcement power. PB institutions rarely possess independent statutory authority; their outputs are consultative or entirely reliant on executive goodwill[48]. When political winds shift—as seen in Porto Alegre after 2004 or in various US districts—the institutional architecture of PB can be dismantled instantly or starved of funds, proving that it never fundamentally altered the constitutional balance of power[1].

Summary of Robust Findings

Participatory budgeting, when structurally binding and adequately funded, directly alters municipal expenditure priorities. It consistently reallocates capital away from highly visible, patron-driven infrastructure toward foundational health and sanitation operations. This specific reallocation results in a statistically significant reduction in infant mortality that strengthens over time. PB is highly effective at mobilizing historically marginalized communities, but only when civic deliberations result in the guaranteed, timely execution of concrete projects. The model is critically vulnerable to municipal fiscal crises; civic participation collapses almost immediately when funds run dry or execution is delayed. Unmitigated PB systems naturally default to elite capture by local power brokers or highly educated demographics unless

constrained by mathematical equity matrices. Western adaptations (PB-lite) tend to be tokenistic, allocating trivial sums without altering structural power dynamics. Digital voting mechanisms increase overall turnout but severely skew participation toward wealthier demographics, subverting the redistributive ethos. Ultimately, PB relies heavily on executive goodwill and rarely possesses the statutory power to survive hostile regime changes.

Contested or Open Questions

- **Long-term Institutionalization:** Can a participatory governance mechanism survive multiple generations without ossifying into just another bureaucratic layer that alienates the grassroots?
- **The Zero-Sum Dilemma:** Does decentralized budgeting inherently fracture working-class solidarity by forcing impoverished districts to compete for scarce funds, or does it build the capacity for broader, cross-district political coalitions?
- **Optimal Funding Thresholds:** At what precise percentage of a total budget (e.g., 5% vs. 25%) does PB transition from a token public relations exercise into a mechanism that genuinely shifts structural socio-economic power?
- **Digital vs. Analog Deliberation:** Can digital platforms be engineered to preserve the face-to-face empathy and consensus-building of physical assemblies without inevitably exacerbating the digital divide and empowering elites?

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Implementability after the Fall

Implementing a viable participatory resource allocation system without a state, an electrical grid, or the internet requires stripping the Porto Alegre and Kerala models down to their absolute analog fundamentals.

- **Household (4–10 people):** A minimum viable product (MVP) for PB is unnecessary at this

scale. The distribution of scavenged, grown, or produced calories is managed via informal consensus and familial hierarchy.

- **Village (300 people):** The MVP requires a physical meeting space (a commons), a shared solar/lunar calendar to mandate a pre-harvest resource planning day, and basic literacy/numeracy to maintain a physical, public ledger. The village physically gathers. Projects (e.g., repairing the gristmill, digging a new well) are proposed. Available labor-hours and surplus calories substitute for fiat currency. A physical hand-vote allocates the collective labor to the highest-priority project.
- **District (3,000 people):** The MVP requires nested delegation. Each of the ten villages (of 300) elects two delegates. These 20 delegates meet at a central geographical crossroad. They require a "Quality of Life Matrix" carved into wood or maintained in a central paper ledger, ranking each village by acute objective deprivation (e.g., proximity to fresh water, crop failure rates). Delegates allocate regional labor teams based strictly on this mathematical matrix to prevent the most populous village from monopolizing regional resources.

First failure to expect: The immediate failure mode will be *execution default*. A district assembly will vote to allocate 500 labor-hours from across the region to clear a blocked river, but when the time comes, citizens will refuse to leave their private harvests to perform the collective labor. This breaks the binding nature of the pact, collapsing civic trust and rendering future assemblies meaningless.

Principles

- **The Binding Accountability Principle:** Participatory governance systems only retain citizen engagement when deliberations result in the guaranteed, timely execution of the decided outcomes.
- **The Bureaucratic Capacity Principle:** The democratic ability of a community to deliberate on infrastructure is entirely useless if the administrative body lacks the technical or physical capacity to execute the work.
- **The Deprivation Matrix Principle:** Unstructured democratic voting naturally favors populations with majorities, high education, or dominant voices; equitable distribution requires a pre-agreed mathematical matrix that artificially weights the needs of the severely deprived.
- **The Clientelism Displacement Principle:** Devolving spending power directly to transparent, citizen-led assemblies actively crowds out patronage networks and redirects finite resources toward fundamental biological priorities like health and sanitation.
- **The Scale Dilution Principle:** As the scale of a participatory budget increases from the neighborhood to the region, the reliance on delegates and technical bureaucrats inevitably dilutes direct citizen control, increasing vulnerability to elite capture.

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