



BRILL

Incentivizing Disaster Preparedness: The Role of Intergovernmental Fiscal Transfers and Participatory Governance

Cielo Magno | ORCID: 0009-0004-1821-6413

Professor, School of Economics, University of the Philippines Diliman

Corresponding author

Mdmagno2@up.edu.ph

Dante Gatmaytan | ORCID: 0000-0003-0217-1762

Professor, College of Law, University of the Philippines Diliman

dbgatmaytan@up.edu.ph

Received 11 April 2025 | Accepted 25 May 2026 |

Published online 12 August 2026

Abstract

This paper examines local disaster risk reduction (DRR) governance in the Philippines by analyzing how fiscal incentives and participatory institutions affect the utilization of the Local Disaster Risk Reduction and Management Fund (LDRRMF). Drawing on second-generation fiscal federalism and participatory governance perspectives, it uses municipal-level panel data to assess the political and institutional determinants of DRR implementation. The findings show that greater dependence on intergovernmental transfers is associated with lower LDRRMF utilization, indicating weakened incentives for local capacity-building and execution. In contrast, civil society organization representation in local DRR councils is positively associated with fund utilization, highlighting the role of participation in strengthening accountability.

Keywords

fiscal federalism – decentralization – devolution – subnational government – local government – fiscal efficiency – disaster preparedness – risk reduction – local development – intergovernmental transfer – fiscal autonomy – participatory governance

1 Introduction

Local governments play a significant role in managing disasters particularly in decentralized regimes. Their roles include risk assessment, decision making, operations, information sharing and communications during major disasters (Col 2007). The Sendai Framework for Disaster Risk Reduction emphasizes the importance of empowering local authorities and local communities in reducing disasters including through resources, incentives, and decision-making responsibilities (United Nations Office for Disaster Risk Reduction 2015). Das, Behera, and Das (2023) discussed the role of local governments in disaster management including the development of an institutional framework, disaster management plans, and capacity building. Decentralization of responsibilities, multisectoral participation, intergovernmental cooperation, and information exchanges are all critical elements in disaster risk reduction (DRR) and management (Col 2007).

Local governments play an important role in directly shaping how a natural event or hazard will turn into a disaster through land-use decisions, housing quality, access to services and enforcement of safety regulations. They translate national strategies to local actions. Governance quality of local governments influences their effectiveness in managing disasters (Wisner et al. 2004). A local government fails and becomes inefficient when incentive structures favor short-term growth, informal settlements or regulatory neglect (Wisner et al. 2004). Success in crisis performance also depends on institutional coordination and learning, not just resources. Failure to effectively respond can also arise from breakdown in intergovernmental coordination (Comfort 2007).

The Philippines provides a good case study on decentralization and disaster preparedness. The country is prone to disasters stemming from natural hazards. It is in the Northwestern Pacific Basin which is the most active tropical cyclone basin in the world and the Pacific Ring of Fire which is characterized by active volcanoes and frequent earthquakes. According to the World Bank (2021a), 60 percent of the country's land area and 74 percent of the population is exposed to numerous hazards, including floods, cyclones, droughts, earthquakes, tsunamis, and landslides. These hazards are expected to intensify with climate change (World Bank 2021a).

In addition, the country decentralized its governance system through the adoption of the Local Government Code of 1991 (Republic Act No. 7160). Powers, functions, responsibilities, and resources were devolved to local governments to operationalize decentralization (Gatmaytan 2001). The Philippine Disaster Risk Reduction and Management Act (Republic Act No. 10121) mandated the local governments to be at the forefront of DRR and management

in the country. They are required to have Local Disaster Risk Reduction and Management Plans which should contain elements of prevention and mitigation, preparedness, response, and rehabilitation and recovery (National Disaster Risk Reduction and Management Council 2011). The Local Disaster Risk Reduction Council (LDRRC) is the body responsible for implementing the plan. It is also responsible for ensuring that DRR and climate change adaptation are integrated in the development programs of local governments (Domingo and Manejar 2018). The law also requires the LDRRC to have four accredited CSO members (Republic of the Philippines 2010) as well as local governments to “engage the participation of civil society organizations (CSOs),¹ the private sector and volunteers in the government’s DRR programs towards complementation of resources and effective delivery of services to the citizenry” (Republic of the Philippines 2010§ 2[m]).

Local governments are required to set aside at least 5 percent of their budgets to support disaster risk management and to use up to 70 percent of these funds to support pre-disaster preparedness and risk reduction measures and the remaining 30 percent as a stand-by fund for relief and recovery programs (2010). The fund is referred to as the Local Disaster Risk Reduction and Management Fund (LDRRMF).

However, challenges in governance, absorptive capacity, and inefficient project implementation in local governments have been observed. Domingo and Manejar (2018) observed underspending of funds, short-term planning, and limited mainstreaming of disaster and risk reduction (DRR) programs. Challenges in technical and financial absorptive capacity of local government units (LGUs) have been observed, not just in DRR but in other devolved mandates as well (World Bank 2021b).

Local government underspending is the result of the lack of manpower and technical capacity to properly plan, prepare, implement and monitor projects and services (World Bank 2021b). Aside from absorptive capacity, other issues that contribute to underspending include “non-alignment of priorities between national and local governments, unclear assignment of functions between national and local governments on fiscal transfers and support and

1 Civil Society Organizations or “CSOs” are defined as “non-state actors whose aims are neither to generate profits nor to seek governing power. CSOs unite people to advance shared goals and interests. They have a presence in public life, expressing the interests and values of their members or others, and are based on ethical, cultural, scientific, religious or philanthropic considerations. CSOs include nongovernment organizations (NGOs), professional associations, foundations, independent research institutes, community-based organizations (CBOs), faith-based organizations, people’s organizations, social movements, and labor unions” (Republic of the Philippines 2010§ 3[c]).

LGU's autonomy on fund utilization" (ULAP 2016). Systemic problems in preparing and executing the budget which include inflated budget estimation and unexpected price change of budget items also contribute to the problem of underspending (Mamaradlo, Tang, and Wong 2021). Mamaradlo, Tang, and Wong (2021) argued that underspending will still occur even if limitations in receiving external funds and in spending on specific categories are removed.

Sicat et al. (2019) also identified weak compliance with the prescribed planning-budgeting process and the need for stricter enforcement of development plans and substantiation of the prioritization of investment programs as the weaknesses of the local government planning and budgeting practices. These weaknesses may have contributed as well to the current state of the local governments' fiscal performance.

Given the significant role local governments need to play in the Philippines to manage disaster and improve resilience of communities especially with climate change, it is important to identify key elements that would contribute to the change in policy response of local governments. Various political incentives have been identified to influence success in DRR. These include structures, formal and informal institutions, and political processes (Williams 2011). The ability of local governments to link disaster management with the long-term development agenda also affects disaster management outcomes (Wisner et al. 2004). This article specifically looks at the national and local fiscal arrangements, budget utilization, and local participation as key variables influencing local government's ability to manage disaster effectively.

Intergovernmental transfers provide incentives for changing local government behavior. One measure of behavior is a local government's budget utilization. Formal and informal spaces for public participation also shape behavior and establish accountability. This article argues that the inherent defect of the Philippines' formula for local fiscal transfers more commonly known as the national tax allotment (NTA), or previously the internal revenue allotment (IRA), is one of the elements that contribute to the inefficiency of local governments particularly in managing climate disaster and reducing vulnerability. Thirty-four years after the government decentralized, lack or limited capacity at the local levels is still identified as the primary reason for ineffectiveness and inefficiency. In addition, we test how the presence of CSOs in the LDRRC contributes to the performance of municipalities in disaster preparedness. While the law provides for their presence in the council, the absence of a penal provision leads to their exclusion in the council.

Using panel data from 2015 to 2018, we examine the relationship between dependence of municipalities on national transfers and the execution of plans for disaster and risk mitigation as measured by the utilization of their

budget for disaster and risk management. We build on previous study (Magno, Capistrano, and Cases 2022) by examining if participatory governance plays an important role in improving the efficiency of municipalities. We chose municipalities among the various levels of LGUs because of the variability among municipalities which may help inform the study. We included a dummy variable indicating the presence of civil society in the LDRRC as a measure of participatory governance. We also included socio-economic indicators, fiscal management indicators, measures of disaster preparedness and vulnerability, and governance indices as control variables. The article uses data on local finances and audits from the Bureau of Local Government Finance and the Commission on Audit as compiled by the World Bank (2021c), the Seal of Good Local Governance of the Department of the Interior and Local Government (undated), the municipal level poverty estimates and population census of the Philippine Statistics Authority, and the housing vulnerability index (HVI) (Healey, Lloyd, Gray, and Opdyke, 2022).

The article aims to contribute to existing literature by looking at the role of national transfers on the performance and efficiency of local governments, specifically on disaster preparedness and risk reduction. The article will also validate whether participatory governance at the local level contributes to better DRR and management of local governments.

The article is structured as follows: Section 2 summarizes the literature, section 3 discusses the Philippine context, sections 4, 5, & 6 present the analytical framework, empirical model, and data sources and summary statistics. This is followed by the presentation of our results and conclusion.

2 Literature Review

A substantial amount of literature on disaster and governance presents a view that disaster risk is significantly influenced by local governance. Wisner et al. (2004) conceptualize disasters as the outcome of socially produced vulnerability. They argued that land-use regulation, housing, service provision, and regulatory enforcement – functions largely exercised at the local level – translate broader political-economic forces into concrete “unsafe conditions” (Wisner et al., 2004). Because of these mandates, local governments act as either risk producers or risk reducers depending on institutional capacity, incentives, and accountability. This governance-centered understanding is reinforced in global policy frameworks such as the United Nations Office for Disaster Risk Reduction’s *Sendai Framework for Disaster Risk Reduction 2015–2030*. The Sendai framework explicitly situates DRR within multi-level governance. It

recognizes the central role of local and subnational governments in integrating disaster management into development planning, budgeting, and regulatory enforcement (United Nations Office for Disaster Risk Reduction 2015). From a public administration standpoint, disaster management is a complex adaptive system, where local governments function as critical nodes translating national policies and warnings into local action. Comfort's (2007) framework of cognition, communication, coordination, and control demonstrates that disaster outcomes hinge on the ability of local institutions to process information, coordinate across organizational boundaries, and adapt decision-making under uncertainty (Comfort, 2007). In addition, comparative studies on decentralization highlight the important role of local governments on disaster outcomes. This is due to proximity to risk and local knowledge, but only when authority, resources, and administrative capacity are aligned (Toya and Skidmore 2007; Iqbal and Ahmed 2015). These works suggest that effective and efficient disaster risk management depends on the quality of everyday local governance, intergovernmental coordination, and the alignment of authority, information, and resources at the local level.

One important element in decentralizing power to local governments is fiscal design. Fiscal design provides an incentives framework that influences the behavior of local governments. Intergovernmental fiscal transfers and the taxing powers of local governments influence their decisions on strategic investments, spending, and regulations.

Fiscal decentralization allows for greater accountability of local politicians (Besley 2006; Weingast 2009). The second-generation fiscal federalism (SGFF) studies posit that public officials maximize their own welfare and respond to political institutions and these actions may differ from maximizing citizen welfare (Weingast 2009).

The second-generation theory also discusses how fiscal design incentivizes local government officials to pursue their policy choices. Weingast (2009) explained that politicians favor policies that increase their revenue and would allow them to finance more activities. He further explained that "subnational governments that raise a substantial portion of their own revenue tend to be more accountable to citizens, to provide market-enhancing public goods, and to be less corrupt" (Weingast 2009, 283). While first generation fiscal federalism (FGFF) focuses on equity considerations in the design of transfer systems in decentralized regimes, "the SGFF growth perspective examines the effects of the tax and transfer system on incentives to increase income" (Singh and Srinivasan 2006, 27). Even if the legal regime of a country provides for taxing powers of local governments, the design of the intergovernmental fiscal transfer plays an important role in influencing whether those taxes will be collected or not.

Arguments have been made that intergovernmental transfers disincentivize the collection of local revenues (Bradford and Oates 1971a, b; Buettner and Wildasin 2006; Zhuravskaya 2000). Weingast (2009, 283) made two important points on the incentivizing effect of fiscal transfers: (1) fiscal transfers that are negatively related or only weakly positively related to local income growth give local governments poor fiscal incentives to foster local economic growth; and (2) that such transfer systems induce greater corruption and rent seeking. The first point is explained by the fiscal law of $1/n$ which shows the disincentive on local economic growth as local governments bear the full cost of market enhancing public goods but capture only $1/n$ of the fiscal return (Careaga and Weingast 2003; Weingast 2009). Local governments underinvest in public goods because the fiscal rule on how pooled revenues are shared among local governments dilute the incentives to invest.

The empirical evidence supports both the possibility of intergovernmental transfers crowding in or crowding out local revenues (Zhuravskaya 2000; Buettner and Wildasin 2006; Masaki 2018; Saptono and Mahmud 2023). Masaki (2018) argued that the effect of intergovernmental transfers on local revenues depend on the existing level of fiscal capacity at the local level and the political costs associated with revenue collection. He explained that intergovernmental transfer may crowd in local revenues by facilitating revenue collection efforts through the stimulation of local economies and financing better public services (Masaki 2018). Tax collection can also be costly when fiscal and administrative institutions are weak and intergovernmental transfer pays for the direct costs of tax collection (Masaki 2018).

Deane (2023) also underscored the importance of political realities in analyzing the link between improved local revenue collection and improvement in public service. Enforcing revenue collection is usually not aligned with the political interests of politicians who aim to minimize the tax burden of constituencies to gather political support (Enemuo 2000; Fjeldstad 2001).

Vertical fiscal imbalance also hinders the effectiveness of decentralization. It happens when functions and responsibilities are devolved to local governments without corresponding sources of revenue to finance the responsibilities. Studies of Italian local governments confirmed the positive relationship between fiscal autonomy and local government efficiency (Bucci, Ferrara, and Resce 2024; Boetti, Piacenza, and Turati 2012). Fiscal ability of local governments affects public good delivery (Bellofatto and Besfamille 2018).

Given these fiscal decentralization principles, we may argue that the absence of the incentivizing effects of the fiscal transfer for local governments to be fiscally independent leads to weak local government capacity. Service delivery suffers because there is no incentive to invest strategically and upgrade capacity. This is further aggravated by weak systems of accountability because the

electorate does not relate tax contribution to quality of services. We test this hypothesis in this article.

Aside from ensuring fiscal autonomy, local accountability mechanisms are important in ensuring the success of devolution (Wei et al. 2023). A study of German municipalities showed that involvement of voters in the political sphere improves local government efficiency and the efficiency enhancing effect of voter involvement is affected by local governments' fiscal autonomy (Geys, Heinemann, and Kalb 2010). In addition, legitimate spaces for interest groups to participate in governance are created at the local level to contribute to strengthening accountability. Meta-governance institutions, often referred to as “multi-stakeholder initiatives” (MSIs), are an example of these mechanisms. MSIs operate on defined standards and open governance structures (Jerbi 2012). The participation of key actors allows for the formulation of comprehensive solutions to individual and common problems in the sector (Koechlin and Calland 2009). The success of MSIs in addressing market and government failures relies on effectiveness, legitimacy and accountability of the actors and the organization (Koechlin and Calland 2009). State support through legal framework, incentive structures, political will, presence of local champions, democratic settings and capable citizens is also necessary for the success of MSIs (Gaventa and McGee 2013; Mejía Acosta 2013; Robinson 2007; Stuesson and Zobel 2015).

There is scarcity in the process and benefits of citizen participation in sustainability transitions (Huttunen et al. 2022) but some existing research found benefits on citizen participation. Speer (2012) claims positive but limited evidence on the relationship between participatory governance mechanisms and public policy benefits. She concluded that accountability mechanisms through participatory governance are very challenging in most developing countries (Speer 2012). Other studies showed citizen participation improves perception of honesty and benevolence of governments (Ardanaz, Otálvaro-Ramírez, and Scartascini 2023). It can also lead to improvement in service delivery (Wetterberg, Frazer, and Johnson 2023) and influences development outcomes (Hao, Nyaranga, and Hongo 2022; Gaventa and Barrett 2012).

In theory, people's participation can lead to stronger local governance because it can (i) increase voice and legitimacy, (ii) improve information and problem-solving, and (iii) strengthen accountability. Classic participation theory frames citizen involvement as a spectrum from tokenism to real power-sharing. Governance gains happen when participation moves beyond consultation toward delegated power or citizen control (Arnstein 1969). Similarly, participation can build civic competence and public-spiritedness, improving

the quality of collective decision-making and local institutional performance (Pateman 1970; Barber 1984). How participation improves policy and administration can also be examined by looking at who participates, how they deliberate, and what authority they hold (Fung 2006). Evidence from local development and decentralization shows that participation can enhance local governance by increasing responsiveness and service performance when it generates credible local information, creates channels for iterative problem-solving, and links citizen inputs to enforceable decisions. Other factors that may affect the impact of participation include capture by local elites, limited access to resources, or disconnectedness from real authority (Mansuri and Rao 2013). Information-only, “tactical” interventions rarely shift governance outcomes. “Strategic” approaches that build collective action and connect citizen voice to state capacity and sanctions are important in influencing governance outcomes (Fox 2015). Participation can also enhance local governance through co-production – citizens and communities jointly producing public services with government – helping address implementation gaps and improving fit to local needs, especially when institutions enable sustained collaboration rather than one-off consultations (Ostrom 1996). Finally, participation can reshape local power relations and institutional trust, but only when it opens “spaces” that marginalized groups can genuinely enter and use – otherwise, participation can reproduce quiescence and inequality (Gaventa 1980; Cornwall 2008).

The literature suggests participation strengthens local governance most reliably when it is institutionalized, inclusive, linked to real decision rights and resources, and embedded in accountability and co-production systems, rather than treated as symbolic compliance. The institutionalization but weak enforcement of people participation in local disaster management in the Philippines makes an interesting case in testing the theory.

3 Contextual Overview

The decentralization framework in the Philippines provided for the division of powers and laid out a host of policy areas that would be devolved to different tiers of local governments. The decentralization law pivots from the highly centralized nature of Philippine government and tries to make local governments less dependent on the national leadership (Gatmaytan 2001).

On the fiscal side, the decentralization law stipulated that 40 per cent of the national internal revenue taxes of the third fiscal year preceding the current fiscal year would be shared with local government units to fund the devolved

functions.² The share will be allocated in the following manner: provinces – 23 percent, cities – 23 percent, municipalities – 34 percent and barangays (villages) – 20 percent. Within the type of local government, the share is determined by the following formula: population – 50 percent, land area – 25 percent, and equal sharing 25 percent (Republic of the Philippines 1991 §§ 284 and 285). The law also provides for the automatic release of local government shares. It means that the central government does not have the authority to withhold the intergovernmental transfers unless there is unmanageable fiscal deficit which allows the central government to reduce the transfer by a maximum of 10 percentage points (Aguirre 2000).

The decentralization law also broadens the taxing powers of local governments. They can collect real property taxes and community taxes, business taxes, professional tax, amusement tax, franchise tax, tax on sand, gravel and other quarry resources, and reasonable fees and charges for services rendered (Republic of the Philippines 1991 ch. 2.). They may impose taxes on any base or subject not covered by the National Internal Revenue Code (Republic of the Philippines 1991 § 186.).

Despite being one of the most decentralized countries in Southeast Asia, the country failed to deliver public goods and services (Shair-Rosenfield 2016). This result is attributed to “the lack of sufficient fiscal resources and high level of unfunded mandates, the weak accountability of local executives to their electorates and the persistence of patronage politics” (Shair-Rosenfield 2016, 168). The lack of understanding of citizens on the extent of devolution in the country coupled with the tendency of central government for patronage politics contribute to dilution of accountability of local officials in delivering their mandates. Widespread poverty creates low expectation of local governments (Shair-Rosenfield 2016). The prevalence of vote buying also makes it unlikely for electoral outcomes to alter the quality of service delivery (Shair-Rosenfield 2016). In a system of patronage politics, low-income individuals expect dole-outs. And middle- and high-income households who have more access to political office resist taxation. Even with the power to tax and mobilize resources at the local level, local government officials have no incentive to tax. The lack of equity mechanism and fiscal stimulation effect of the intergovernmental transfers has been noted early on by experts (Guevara 2000; Llanto 2009, 2012; JICA 2009; Gatmaytan 2001).

2 The Mandanas-Garcia ruling of the Supreme Court in 2019 expanded the basis of the computation of the share of local governments to include all national taxes, not just internal revenue taxes collected by the Bureau of Internal Revenue.

Republic Act No. 10121 institutionalized the Philippine DRR framework and formally positions local governments as frontline actors responsible for integrating DRR and management into local functions (Domingo 2016). Various studies consistently find that the effectiveness of this decentralized DRR system is shaped by uneven local capacities, fiscal constraints, and coordination challenges across levels of government (Scott and Tarazona 2011; World Bank 2020). While decentralization enables context-specific risk management and faster local response, it also produces institutional asymmetries when devolution is not matched by sustained technical support, clear intergovernmental mandates, and robust accountability mechanisms (Domingo 2016; Scott and Tarazona 2011). Challenges have been identified on the governance of the LDRRMF. Studies highlight persistent problems of underutilization, weak linkage between risk assessments and investment planning, and expenditure patterns biased toward response rather than prevention and mitigation ((COA) n.d.; Oxfam Philippines 2023). COA audits further underscore that deficiencies in planning, reporting, and compliance – rather than the absence of funds – often undermine local DRR outcomes, pointing to governance and public financial management failures rather than purely technical gaps ((COA) n.d.). The Philippine experience suggests that local DRR effectiveness depends less on the formal existence of decentralized institutions than on the quality of local governance. These include the interaction of administrative capacity, fiscal discipline, intergovernmental coordination, and accountability systems that enable local governments to translate national DRR policy into sustained risk reduction at the community level (World Bank 2020; Oxfam Philippines 2023).

With respect to civic space, there are variations in terms of vibrancy and presence of civil society and the private sector across local governments. The quality of democracy across local governments in the country plus the lack of an enabling law for sectoral representation in local legislative councils affect the actual participation of civil society and the private sector in local governance (Atienza and Go 2023). In some cases, despite existing legal provisions, many people still lack information about these local processes and local governance in general (Atienza and Go 2023).

4 Analytical Framework

This analysis builds on the assertion of the second generation fiscal federalism literature which claims that the design transfer system of decentralized regimes create incentives for policy actions of local government officials including in the collection of local revenues (Singh and Srinivasan 2006).

A fiscal transfer that incentivizes local income growth supports local economic growth and establishes greater accountability between local officials and their electorate (Weingast 2009).

As shown in the literature, the dependency on the internal transfer creates inefficiency in the delivery of basic services at the local level. Additional revenues are not mobilized to improve service delivery. Mobilization of additional revenues requires local governments to upgrade the capacity of local governments and invest in public goods that will improve the value of the local government's tax base. In the absence of an incentive mechanism to collect more revenue, similar incentives to upgrade capacity and invest strategically disappear. Accountability is limited because the electorate does not attribute the quality of the service to their tax contributions to the local government. This leads to low capacity and substandard governance quality.

In addition, this article examines the contribution of civil society in improving local government efficiency on disaster preparedness and management. Existing literature asserts participatory governance as a powerful tool in improving service delivery and development planning at the local level.

We hypothesize that in the case of the Philippines, the local governments remain dependent on the intergovernmental transfer to finance their mandates and functions because of the flawed formula for intergovernmental transfer. The transfer formula has no link at all to the local revenue effort of local governments. The absence of an incentive mechanism to mobilize local revenue leads to limited resources, poor quality of governance, and inefficiency in the delivery of public services. The presence of more active citizens in some local governments may lead to improved service delivery as this contributes to strengthening accountability.

5 Empirical Model and Strategy

The empirical strategy focuses on the performance of the local government on disaster preparedness and risk management. It also tests the impact of the presence of civil society in LDRRC which was absent in the previous study (Magno, Capistrano, and Cases 2022).

The model focuses on examining the performance of the local government in disaster preparedness and risk reduction. We use the budget utilization rate of the LDRRMF as the proxy measure for performance of local government in disaster preparedness and risk reduction. This is the dependent variable of the empirical model. The independent variables include the dependence of the local governments on the intergovernmental transfer, the presence of civil society members in the local development councils and the LDRRC. We

control the effects of the allocation for DRR and other functional responsibilities of the local government as well as the social and economic contexts and the vulnerability of the local government to disasters. We summarize the empirical model as follows:

$$\begin{aligned} \log (BUR_LDF_{it}) = & \beta_0 + \alpha \log \log (U_{it}) + \varepsilon X_{it} + \pi(Z_{it}) + \\ & \partial(Z_{it-1}) + \gamma V_{it} + \delta W_{it} + \sigma Y_{it} + \mu_{it} \end{aligned} \tag{2}$$

where

	Independent variables	Indicators
<i>BUR_ LDF_{it}</i>	the budget utilization rate of the LDRRMF of local government <i>i</i> at time <i>t</i>	– The log of the ratio between the utilized LDRRMF and the annual budget of local government <i>i</i> at time <i>t</i>
<i>U_{it}</i>	the dependence on the inter-governmental transfer of local government <i>i</i> at time <i>t</i>	– The log of the ratio between the intergovernmental transfer and the annual budget of local government <i>i</i> at time <i>t</i>
<i>X_{it}</i>	a vector that contains accountability indicators of local government <i>i</i> at time <i>t</i>	– The ratio between the number of civil society representatives and the total number of members of the local development council of local government <i>i</i> at time <i>t</i> – A dummy variable representing the presence of civil society representatives in the local disaster risk reduction management councils (LDRRMCS) of local government <i>i</i> at time <i>t</i>
<i>Z_{it}</i>	– a vector that contains various budget data variables of local government <i>i</i> at time <i>t</i> .	– Budget per capita of local government <i>i</i> at time <i>t</i> computed as the ratio between the annual budget and the estimated population of local government <i>i</i> at time <i>t</i> – The log of the annual LDRRF allocation of local government <i>i</i> at time <i>t</i> – The log of the allocation for the functional expenditures of local government <i>i</i> at time <i>t-1</i>

(cont.)

	Independent variables	Indicators
Z_{it-1}	– a vector that contains various budget data variables of local government i at time $t-1$.	– Budget per capita of local government i at time t computed as the ratio between the annual budget and the estimated population of local government i at time $t-1$ – The log of the annual LDRRF allocation of local government i at time $t-1$ – The log of the allocation for the functional expenditures of local government i at time $t-1$
V_{it}	– a vector that contains several financial indicators of local government i at time t .	– Growth in locally sourced revenue per capita as measured by the difference in local revenue generated by the local government i between t and $t-1$ divided by the estimated population – dummy variables indicating the audit opinion on the audit report as unqualified, qualified, adverse, disclaimer of local government i at time $t-1$ – a financial administration score of local government i at time t
W_{it}	– a vector that contains social data variables of local government i at time t which include the poverty incidence, and indicators on peace and order, business friendliness and competitiveness, and environmental management.	– Poverty incidence of local government i at time t – Indicator on peace and order – Indicator on business friendliness and competitiveness – Indicator on environmental management
Y_{it}	– a vector containing the disaster vulnerability variables of local government i at time t	– Dummy variable for disaster preparedness score – The 2015 HVI of Healey et al. (2022). Same values were used for 2016–2018.

(cont.)

Independent variables	Indicators
β_0	– the intercept of the regression equation, α , π , γ , δ , ε and σ are vectors containing the coefficients associated with the variables included in vectors U_{it} , Z_{it} , V_{it} , W_{it} , X_{it} , and Y_{it} , respectively. μ_{it} is the error term of the equation

The budget data and the suballocations were transformed by getting their logarithms to normalize their distribution. The models were implemented using a random effects panel regression analysis because we have time invariant data such as the HVI.

6 Data Sources and Summary Statistics

This research examines the available data for 1,485 municipalities in the Philippines. We constructed a panel dataset combining the revenues, expenditures, socio-economic data, and various performance indicators of the municipalities from 2015 to 2018. The duration of the study is ideal as this was before the COVID pandemic. It means that it is free from the effect of any extraordinary fiscal activities the government undertook during the pandemic. We built on the Bureau of Local Government Finance (BLGF) and Commission on Audit (COA) data compiled by World Bank (2021c). The compiled data used the public finance data from the BLGF which reports detailed statements of receipt, sources, and expenditures submitted by local government treasurers.³ The Statements of Revenue and Expenditure (SRE) report the local governments’ sources of income, including locally generated revenues, grants, transfers from foreign or domestic sources, intergovernmental transfers, and shares from national wealth. The BLGF also reports the total expenditure and the

3 Local treasurers are required to prepare a Statement of Income and Expenditures (SIE) on a cash and modified accrual accounting basis. The statement serves as an input to the monitoring tools of the national government regarding financial performance and assists local government units with financial operations.

expenditure of the local governments by function. In addition to the BLGF data, we use the data from the COA on the annual budget of local governments. Similarly, the data include the overall audited budget and the budget per function and per type.

The dataset also includes the COA opinion on the audit reports of the local governments. We use the fiscal year's audit observation as an indicator of the financial management capacity of local governments. The audit observation has four categories (Commission on Audit (COA) 2022). An *unqualified opinion* is issued when the auditor concludes that the financial statements are prepared, in all material respects, in accordance with the applicable financial reporting framework. A *qualified opinion* means financial statements are materially misstated, the extent of which is material but not pervasive. There's also material but not pervasive inability to obtain sufficient appropriate audit evidence. An *adverse opinion* means financial statements are materially misstated, the extent of which is material and pervasive. A *disclaimer of opinion* is issued if there is material and pervasive inability to obtain sufficient appropriate audit evidence (Commission on Audit (COA) 2022).

We combined the compiled data with the various Seal for Good Local Governance (SGLG) scores of the Department of Interior and Local Government. The SGLG is an institutionalized award, incentive, honor, and recognition-based program. The score of "1" indicates whether the local government passed all the assessment areas that are being considered. We included the following indicators: the Peace and Order Score,⁴ the Business-Friendliness and Competitiveness Score,⁵ Environmental Management Core,⁶ Financial Administration and Sustainability Score,⁷ and Disaster Preparedness,⁸ The SGLG data also contains the number of civil society representatives in the local development council and if civil society representatives are present in the LDRRMC (DILG 2021).

4 The local government is able to protect its constituents from threats to life and damage to property (DILG 2021).

5 The local government enables procompetitive policies and interventions, and facilitate ease of doing business, in accordance with the Ease of Doing Business and Efficient Government Service Delivery Act of 2018 (DILG 2021).

6 The local government safeguards and preserves the integrity of the environment through adaptive social responsibility (DILG 2021)

7 The local government upholds the practice of fiscal discipline and sustainability, and transparency and accountability in the use of public funds (DILG 2021).

8 The local government prevents and prepares for disasters, whether natural or human-induced, in order to strengthen their resilience (DILG 2021).

Lastly, the article also used the 2015 HVI of Healey et al. (2022). The indicator accounts for different dimensions of typhoon-related housing vulnerability. These include housing density, housing quality, crowdedness, tenure security, extreme substandard housing, drinking water source, and structural integrity. The score was computed using the 2015 Philippine census. Higher score indicates greater vulnerability (Healey et al. 2022).

Table 1 presents the descriptive statistics of the variables in the model. While there are 1,485 municipalities, due to an unbalanced data set, only 867 municipalities have complete data that were used for the panel regression. Additional observations were dropped during the regression process resulting in a 4-year panel data with 2,602 observations.

We compared the summary statistics of the key variables of the main dataset and the sample dataset. The descriptive statistics of the key variables of the overall municipal dataset does not differ significantly to the sample set. The average utilization rate of the overall dataset from 2015 to 2018 is 79.25 while the sample set is 80.63. The average intergovernmental transfer as a fraction of

TABLE 1 Descriptive statistics n=867

VARIABLES	2015	2016	2017	2018
Overall budget utilization rate M(SD)	84.94 (.63)	79.83(.13)	78.59 (.15)	79.15 (.15)
[min-max]	[0.51–1,630.58]	[15.73–112.61]	[1.16–167.04]	[5.35–182.12]
Budget utilization rate of the LDRRMF M(SD)	60.13 (.41)	57.84 (.31)	58.29 (0.47)	59.30 (0.30)
[min-max]	[1–558.00]	[1–207.00]	[1.00–1009.00]	[1–241.00]
Dependency on intergovernmental transfer M(SD)	82.05 (0.15)	80.97 (.17)	83.12 (0.14)	80.23 (0.17)
[min-max]	[13.45–100]	[16.65–100]	[12.18–100]	[9.38–100]
% of civil society representatives in the local development council M(SD)	29.00 (0.08)	28.00 (0.09)	31.00 (.13)	43.00 (1.35)
[min-max]	[0.04–1.11]	[0.04–1.11]	[0.00–2.00]	[0.00–2.10]
LGUs with civil society in the local disaster risk reduction management councils n(%)	733 (93.61)	797 (96.72)	672 (78.41)	881 (94.94)
Annual LDRRF budget in Php M(SD)	5,775,166 (5118878)	6,576,543 (6048756)	7,140,015 (6530253)	7,622,915 (5715229)

TABLE 1 Descriptive statistics n=867 (cont.)

VARIABLES	2015	2016	2017	2018
[min-max]	[106,114– 65,300,000]	[26,495– 89,100,000]	[185590– 95,200,000]	[76700– 70,000,000]
Annual health budget in Php M(SD)	9,339,953 (9813705)	11,652,175 (37747230)	11,411,424 (12139999)	13,179,645 (23023545)
[min-max]	[1,037– 161,000,000]	[70,000– 983,000,000]	[100,000– 174,000,000]	[75,000– 557,000,000]
Annual general public ser- vices budget in Php M(SD)	59,100,000 (53600000)	67,700,000 (53700000)	75,400,000 (59600000)	86,400,000 (76700000)
[min-max]	[101,410– 961,000,000]	[1,825,000– 493,000,000]	[17,500,000– 591,000,000]	[211,740– 877,000,000]
Annual education budget in Php M(SD)	4,989,065 (10300000)	5,766,565 (19800000)	5,941,553 (17200000)	6,504,886 (15700000)
[min-max]	[1,050– 120,000,000]	[2,500– 364,000,000]	[28,000– 221,000,000]	[50,000– 223,000,000]
Annual economic program budget in Php M(SD)	19,000,000 (70200000)	17,400,000 (23800000)	27,900,000 (262000000)	23,500,000 (48700000)
[min-max]	[2,3540– 1,640,000,000]	[115600– 266,000,000]	[22,000– 7,420,000,000]	[550,000– 820,000,000]
Annual development fund budget in Php M(SD)	18,200,000 (20100000)	20,500,000 (13100000)	22,500,000 (13700000)	28,100,000 (67000000)
[min-max]	[11,693– 500,000,000]	[13,415– 133,000,000]	[16,633– 113,000,000]	[7,672– 1,700,000,000]
Social services budget in Php M(SD)	6,199,698 (9427588)	85,676 (40400000)	11,800,000 (73000000)	9,368,290 (14100000)
[min-max]	[8,858– 193,000,000]	[93,000– 1,290,000,000]	[80,000– 2,190,000,000]	[14,000– 230,000,000]
Annual Personal Services (PS) budget in Php M(SD)	44,900,000 (55200000)	50,600,000 (46500000)	61,500,000 (255000000)	57,000,000 (29600000)
[min-max]	[19,535– 1,530,000,000]	[3,725,665– 1,060,000,000]	[230,000– 7,450,000,000]	[2,037,307– 380,000,000]
Annual maintenance and operating (MOOE) budget in Php M(SD)	54,600,000 (112000000)	56,100,000 (52100000)	67,100,000 (178000000)	69,300,000 (69400000)
[min-max]	[59,132– 3,140,000,000]	[21,739– 619,000,000]	[79,005– 6,050,000,000]	[95,000– 849,000,000]
Annual capital outlay (CO) budget in Php M(SD)	24,100,000 (37500000)	26,300,000 (52100000)	30,700,000 (43100000)	44,400,000 (82900000)

TABLE 1 Descriptive statistics n=867 (cont.)

VARIABLES	2015	2016	2017	2018
[min-max]	[1,880–571,000,000]	[21,739–619,000,000]	[24,815–542,000,000]	[40,000–1,690,000,000]
Budget per capita in Php M(SD)	4,051.47 (4,513.85)	4,296.38 (3904.66)	5,082.91 (14518.4)	5,563.08 (13377.47)
[min-max]	[166.06–84,588.64]	[883.96–39870.73]	[741.56–356709.40]	[672.19–360909.5]
Growth in locally sourced revenue per capita M(SD)	11.95 (0.98)	11.60 (0.76)	21.98 (1.43)	14.13 (0.51)
[min-max]	[–0.95–20.06]	–0.92–12.37	–1.00–37.35	–.85–6.76
Population density M(SD)	409.02 (858.62)	486.00 (1145.11)	491.69 (995.29)	519.75 (990.88)
[min-max]	[0.63–17238.11]	[0.67–19159.22]	[0.70–21080.33]	[0.73–23001.44]
Poverty incidence M(SD)	26.43 (14.76)	26.97 (15.17)	21.86 (15.40)	21.35 (15.06)
[min-max]	[0.66–71.38]	[0.66–78.47]	[0.00–88.08]	[0.00–87.31]
Audit opinions				
Unqualified n (%)	59 (7.56)	61 (7.40)	71 (8.29)	76 (8.19)
Qualified n (%)	692 (88.95)	730 (89.46)	764 (89.67)	823 (89.85)
Adverse n (%)	11 (1.41)	9 (1.10)	7 (0.82)	9 (0.98)
Disclaimer n (%)	16 (2.06)	16 (1.96)	10 (1.17)	8 (0.87)
SGLG Scores				
Financial administration score n (%)	698 (89.14)	393 (47.69)	483 (56.36)	216 (23.28)
Peace and order score n (%)	672 (85.82)	536 (65.05)	464 (54.14)	264 (28.45)
Business friendliness and competitiveness n (%)	646 (82.50)	445 (54.00)	646 (75.38)	515 (55.50)
Environmental management n (%)	672 (85.82)	707 (85.80)	778 (90.78)	490 (52.80)
Disaster preparedness n (%)	479 (61.17)	173 (21.00)	389 (45.39)	154 (16.59)
HVI M(SD)	–0.17 (2.38)	–0.17 (2.38)	–0.17 (2.38)	–0.17 (2.38)
[min-max]	[–6.56–9.74]	[–6.56–9.74]	[–6.56–9.74]	[–6.56–9.74]

the total budget for the overall dataset is 83.23 while the average for the sample is 81.60. The average proportion of civil society representatives in the local development council is the same for the overall dataset and the sample which is at 32.75%. In this regard, we concluded that the subsample is a representative sample of the bigger dataset.

The budget utilization rate of municipalities deteriorated from 2015 to 2018. From about 84 percent budget utilization rate in 2015, it declined to about 79 percent in 2018. We can see a significant range in the budget utilization rate. It suggests that some local governments spent more than they budgeted for. The average utilization rate of the LDRRMF was about 59 percent. Municipalities in the sample are dependent on the dependent intergovernmental transfer. About 82 percent of their annual budget comes from the transfer. The sample average is close to the overall average of all municipalities at 89 percent.

With respect to accountability measures, about a third of local development council members are civil society representatives. On average, about 91 percent of municipalities in the sample have civil society representatives in their LDRRC.

The table also includes the averages of budgets of municipalities per year for the key functions of the sample municipalities. These include the annual budget for local DRR and management, health, general public services, education, economic programs, annual development funds, and social services. The table also includes the average budget per year of the sample municipalities according to their key classification. On average, the budget for MOOE has the largest allocation, followed by PS. The budget for capital outlay has been increasing from 2015 to 2018 but still has the lowest share of the total budget. The analysis also includes the overall budget per capita of the sampled municipalities. The annual budget per capita has been increasing over the years. On average, this is about Php 4,478 (about USD 80.56). Poverty incidence in our sample municipalities is at about 24 percent on average. This is slightly higher than the national level poverty incidence which was at 16.7 percent in 2018 (World Bank 2021d). With respect to the audit opinion of local government financial reports, most local governments have qualified opinions and very few have adverse or disclaimer in their audit. The SGLG scores also indicate a decreasing number of municipalities complying with financial administration, peace and order, environmental management, and disaster preparedness requirements. More than half of municipalities are compliant with business friendliness and competitiveness and environmental management requirements, but the numbers are fluctuating. Lastly, the HVI indicates low vulnerability of the sample municipalities on average.

7 Results and Discussion

Table 2 summarizes the panel regression result of the regression model.

The empirical results show a more pronounced effect of the dependency on intergovernmental transfer and accountability at the municipal level on the aspect of DRR and management. Both variables are statistically significant. The higher the dependency on the intergovernmental transfer, the lower the budget utilization rate for local DRR and management ($p \leq .05$). Local governments with civil society representatives in the LDRRC are also more likely to increase the utilization rate of their LDRRF ($p \leq .05$). The increase in the annual allocation for local DRR and management also reduces the budget utilization rate for the fund ($p \leq .01$).

In a previous study, Magno, Capistrano, and Cases (2022) used the same dataset and examined the overall budget utilization of local government units. The budget utilization rate of municipalities was used as a proxy for performance and as the dependent variable of the empirical model. The independent variables are the dependence in the intergovernmental transfers and presence of civil society in the local development councils. We control the effects of the allocations of the local government for various responsibilities, and social and economic contexts. The size of the suballocation according to mandates may influence local government efficiency. While there was a negative relationship between intergovernmental transfer and the overall budget utilization rate, it was not statistically significant. The presence of civil society in the local development councils was also positively correlated to the overall budget utilization but is also not statistically significant. The effects of dependency intergovernmental fiscal transfers and presence of civil society were more pronounced in the realm of DRR than in the overall budget utilization of municipalities.

This article advances the literature on DRR and local governance by empirically demonstrating that institutional incentives and participatory arrangements, rather than formal decentralization alone, shape local DRR performance in the Philippines. The negative and statistically significant association between intergovernmental transfer dependence and LDRRMF utilization provides support for second-generation fiscal federalism arguments that local governments' behavior responds to the marginal incentives embedded in fiscal systems. In a setting where transfers are weakly linked to local revenue effort or administrative performance, municipalities face limited pressure to invest in capacity, strategically invest, or to fully execute earmarked DRR funds. This finding aligns with Philippine contextual analyses and audit evidence documenting chronic underspending of DRR allocations despite clear legal mandates

TABLE 2 Panel regression results

	Empirical model [BUR of the LDRRF]		
	Coef	Std. err.	
log_dependency on intergovernmental transfer	-0.13	0.06	**
% of civil society representatives in the local development councils	0.02	0.02	
LGUs with civil society in the local disaster risk reduction management councils	0.12	0.05	**
budget per capita at time t	0.00	0.00	
budget per capita t-1	0.00	0.00	
log_annual LDRRF allocation at time t	-0.22	0.04	***
log_annual LDRRF allocation t-1	0.01	0.04	
log_annual PS budget at time t	0.02	0.05	
log_annual PS budget at time t-1	0.09	0.05	*
log_annual MOOE budget at time t	0.09	0.05	**
log_annual MOOE budget at time t-1	0.13	0.04	***
log_annual CO budget at time t	-0.02	0.02	
log_annual CO budget at time t-1	-0.05	0.02	***
Growth in locally sourced revenue per capita	-0.02	0.02	
Population density	0.00	0.00	
Poverty Incidence	0.00	0.00	***
SGLG Scores			
<i>Financial administration score</i>	0.08	0.04	**
<i>Peace and order score</i>	-0.01	0.04	
<i>Business friendliness and competitiveness</i>	0.03	0.04	
<i>Environmental management</i>	-0.02	0.04	
<i>Disaster preparedness</i>	0.08	0.04	*
Audit Observations (base: unqualified)			
<i>Qualified</i>	-0.01	0.06	
<i>Adverse</i>	0.03	0.17	
<i>Disclaimer</i>	0.00	0.15	
HVI	-0.01	0.01	*
_cons	-2.62	0.62	
Observations	2,602		
R-squared	0.04		

under Republic Act No. 10121. It suggests that underspending reflects a rational response to distorted incentives rather than simple administrative failure.

The results also confirm the governance-enhancing role of participatory institutions. Municipalities with civil society organization (CSO) representation in the Local DRRM Council exhibit significantly higher LDRRMF utilization, lending empirical support to participatory governance and social accountability theories that emphasize the importance of embedding citizen voice within decision-making arenas. In the Philippine context – where CSO participation is legally required but unevenly implemented – this finding demonstrates that participation becomes consequential when it is substantive rather than symbolic. CSOs appear to function as monitoring and agenda-setting actors that reduce inertia and compel local executives to act on approved DRR plans, partially offsetting weak fiscal incentives and limited administrative capacity.

With respect to the functional budgets, increases in the MOOE budget and previous year's budget for PS and MOOE will increase LDRRF utilization rate ($p \leq .05$; $p \leq .10$) ($p \leq .01$). An increase in previous year's CO will decrease the LDRRF utilization rate ($p \leq .01$). The increase in the current year's CO will also decrease the LDRRF utilization rate consistent with model 1, but this is not statistically significant.

Increase in poverty incidence also increases LDRRF utilization rate ($p \leq .01$). With respect to the SGLG scores, municipalities that are compliant with financial administration and disaster preparedness requirements are more likely to have higher LDRRF utilization rate ($p \leq .05$; $p \leq .10$). Like the previous study on overall budget utilization of local governments, the consciousness of the municipalities to comply with financial audit requirements may also explain their budget utilization rate. The more conscious they are in terms of meeting the financial audit requirements, the less efficient they are in utilizing their budget (Magno, Capistrano, and Cases 2022).

With respect to vulnerability, the more vulnerable a municipal government is, the lower would be the LDRRF utilization rate ($p \leq .10$). The R-squared of both models are quite low which means the models will benefit from inclusion of additional variables in the future.

The control variables further underscore that DRR outcomes are governed by capacity and coordination constraints rather than need alone. The negative association between housing vulnerability and fund utilization indicates that the municipalities most exposed to disaster risks are often the least capable of executing DRR spending, reinforcing concerns in the decentralization literature about asymmetric capacity under devolution. Similarly, the inverse relationship between current-year LDRRMF size and utilization suggests absorptive-capacity ceilings: increasing allocations without commensurate

improvements in staffing, planning, and procurement may worsen execution ratios. Positive effects of MOOE, lagged personnel services, and SGLG governance indicators highlight the importance of recurrent administrative capacity and institutional quality, while the negative effect of lagged capital outlays reflects the transaction costs and bottlenecks associated with capital-intensive project pipelines.

Taken together, the findings suggest that local DRR performance emerges from the interaction of fiscal incentives, participatory governance, and administrative capacity, rather than from decentralization or funding levels per se.

8 Conclusion

This article shows that improving disaster risk reduction at the local level in the Philippines requires moving beyond a compliance-oriented view of decentralization toward a governance and incentives perspective. While Republic Act No. 10121 provides a robust legal framework for decentralized DRR, the results demonstrate that dependence on intergovernmental fiscal transfer weakens execution incentives, whereas meaningful participation through CSO inclusion strengthens implementation outcomes. Importantly, higher vulnerability and larger allocations do not automatically translate into higher DRR spending, underscoring that risk reduction is constrained by institutional capacity and incentive structures rather than by formal authority or resource availability alone.

The findings imply that DRR reform efforts should focus on reformulating the intergovernmental fiscal transfer, institutionalizing participatory accountability, and strengthening absorptive capacity, particularly in high-risk municipalities. Without such reforms, increases in DRR funding may continue to coexist with persistent underspending and limited risk reduction. By empirically linking fiscal federalism theory, participatory governance, and Philippine DRR practice, this article contributes to a more nuanced understanding of why decentralized DRR systems succeed or fail and highlights pathways for making local disaster governance more effective and equitable.

This article has several limitations that point to directions for future research. First, the analysis relies on fund utilization as a proxy for DRR performance, which captures execution capacity but not the quality or risk-reducing impact of expenditures. Future work could link utilization to outcome measures such as reduced losses, faster recovery, or changes in vulnerability indicators. Second, while CSO presence is used as an indicator of participatory

governance, it does not capture variation in the depth, independence, or effectiveness of participation; qualitative or mixed-methods research could examine how different forms of CSO engagement influence decision-making within LDRMCS. Third, potential endogeneity concerns remain, as better-governed municipalities may both attract CSO participation and exhibit higher utilization; future studies could explore instrumental variables or longitudinal designs to strengthen causal inference. Finally, extending the analysis to a comparative setting – for example, across countries with similar DRR decentralization frameworks – would help assess the generalizability of the findings beyond the Philippine case.

Notes on the Contributors

Dr. Cielo Magno is Professor at the University of the Philippines School of Economics. She took her undergraduate and Master's degrees from the University of the Philippines and earned her PhD in Law and Public Policy from Northeastern University, Boston, MA, USA. Her research interests focus on public finance, law, health, institutional, and resource economics, and industry regulation.

Dante Gatmaytan is the George A. Malcolm Professor of Constitutional Law at the University of the Philippines, College of Law. He graduated with a Bachelor's Degree from the Ateneo de Manila (B.S. Legal Management) and a law degree (LL.B.) from the University of the Philippines. He holds Masters Degrees from Vermont Law School (cum laude) and the University of California, Los Angeles.

Professor Gatmaytan writes on a wide range of issues, which include the environment, gender, the judiciary, and the intersection of law and politics. His works have appeared in the *University of Pennsylvania Asian Law Review*, *Asian Journal of Comparative Law*, *Northwestern Interdisciplinary Law Review*, *UCLA Pacific Basin Law Journal*, *Georgetown International Environmental Law Review*, and the *Harvard Women's Law Journal*, among others.

Acknowledgements

The authors thank the United Nations Development Programme for the support to make this study possible. We also sincerely thank the anonymous reviewers for their careful, rigorous, and constructive evaluation of this manuscript

through the double-blind peer review process. Their insightful comments and recommendations substantially improved the quality, clarity, and rigor of this article. Any remaining errors are the sole responsibility of the authors.

References

- Philippine Disaster Risk Reduction and Management Act*.
undated. "Seal of Good Local Governance." Department of Interior and Local Government, accessed 2022. <https://dilg.gov.ph/reports-and-resources/seal-of-good-local-governance/12/>.
- (COA), Commission on Audit. n.d. Disaster management practices in the Philippines: An assessment [Report]. Quezon City, Philippines: Commission on Audit.
- Aguirre, Pimentel v. 2000. Pimentel v. Aguirre. In *Philippine Reports* Supreme Court.
- Ardanaz, Martin, Susana Otálvaro-Ramírez, and Carlos Scartascini. 2023. "Does information about citizen participation initiatives increase political trust?" *World Development* 162:106132. doi: <https://doi.org/10.1016/j.worlddev.2022.106132>.
- Arnstein, Sherry R. 1969. "A Ladder Of Citizen Participation." *Journal of the American Institute of Planners* 35 (4):216–224. doi: 10.1080/01944366908977225.
- Atienza, Maria Ela L., and Jan Robert R. Go. 2023. Assessing Local Governance and Autonomy in the Philippines: Three Decades of the 1991 Local Government Code. In *Discussion Paper Series 2023–05*. Quezon City, Philippines: University of the Philippines Center for Integrative and Development Studies Program on Social and Political Change.
- Barber, Benjamin R. 1984. *Strong democracy: Participatory politics for a new age*. Berkeley: University of California Press.
- Bellofatto, Antonio Andrés, and Martín Besfamille. 2018. "Regional state capacity and the optimal degree of fiscal decentralization." *Journal of Public Economics* 159:225–243. doi: <https://doi.org/10.1016/j.jpubeco.2017.12.010>.
- Besley, Timothy. 2006. *Principled Agents? The Political Economy of Good Government*. Oxford, UK: Oxford University Press.
- Boetti, Lorenzo, Massimiliano Piacenza, and Gilberto Turati. 2012. "Decentralization and Local Governments' Performance: How Does Fiscal Autonomy Affect Spending Efficiency?" *FinanzArchiv / Public Finance Analysis* 68 (3):269–302.
- Bradford, David F., and Wallace E. Oates. 1971a. "Approach to collective fiscal decisions." *Quarterly Journal of Economics* 85 (3):416–439. doi: 10.2307/1885931.
- Bradford, David F., and Wallace E. Oates. 1971b. "Towards a predictive theory of inter-governmental grants." *The American Economic Review* 61 (2):440–448.
- Bucci, V., G. Ferrara, and G. Resce. 2024. "Local government spending efficiency and fiscal decentralization: evidence from Italian municipalities." *Applied Economics* 56 (5):599–614. doi: 10.1080/00036846.2023.2169241.

- Buettner, T., and D. E. Wildasin. 2006. "The dynamics of municipal fiscal adjustment." *Journal of Public Economics* 90 (6–7):1115–1132. doi: 10.1016/j.jpubeco.2005.09.002.
- Careaga, Maite, and Barry R. Weingast. 2003. "Fiscal federalism, good governance, and economic growth in Mexico." In *Search of Prosperity: Analytic Narratives on Economic Growth*, edited by Dani Rodrik. Princeton: Princeton University Press.
- Col, Jeanne-Marie. 2007. "Managing Disasters: The Role of Local Government." *Public Administration Review* 67 (s1):114–124. doi: <https://doi.org/10.1111/j.1540-6210.2007.00820.x>.
- Comfort, Louise K. 2007. "Crisis Management in Hindsight: Cognition, Communication, Coordination, and Control." *Public Administration Review* 67 (s1):189–197. doi: <https://doi.org/10.1111/j.1540-6210.2007.00827.x>.
- Commission on Audit (COA). 2022. "Understanding the Audit Opinion." Commission on Audit, accessed January 5. <https://www.coa.gov.ph/wp-content/uploads/2022/06/Understanding-the-Audit-Opinion.pdf>.
- Cornwall, Andrea. 2008. "Unpacking 'Participation': models, meanings and practices." *Community Development Journal* 43 (3):269–283. doi: 10.1093/cdj/bsn010.
- Das, Amarendra, Sasmita Behera, and Bibhunandini Das. 2023. "Role of Local Governments in Disaster Management." In *International Handbook of Disaster Research*, edited by Amita Singh, 1013–1033. Singapore: Springer Nature Singapore.
- Deane, Vanessa L. 2023. "A five-year case study analysis of USAID local governance programming and public investment spending in post-earthquake Haiti." *World Development Perspectives* 32:100546. doi: <https://doi.org/10.1016/j.wdp.2023.100546>.
- DILG. 2021. 2021 Seal of Good Local Governance: Pagkilala sa Katapatan at Kahusayan ng Pamahalaang Lokal. edited by Department of Interior and Local Government. Quezon City.
- Domingo, S. N. 2016. An assessment of the sectoral and institutional implementation of the National Disaster Risk Reduction and Management Plan (NDRRMP). In *PIDS Discussion Paper*, edited by Philippine Institute for Development Studies (PIDS). Quezon City, Philippines.
- Domingo, Sonny N., and Arvie Joy A. Manejar. 2018. "Disaster Preparedness and Local Governance in the Philippines. Discussion Paper Series No. 2018-52." PIDS Discussion Paper, Quezon City, Philippines.
- Enemuo, Francis C. 2000. "Problems and prospects of local governance." *chapter 7* (181–204):15–25.
- Fjeldstad, O. H. 2001. "Taxation, coercion and donors: Local government tax enforcement in Tanzania." *Journal of Modern African Studies* 39 (2):289–306. doi: 10.1017/S0022278X01003627.
- Fox, Jonathan A. 2015. "Social Accountability: What Does the Evidence Really Say?" *World Development* 72:346–361. doi: <https://doi.org/10.1016/j.worlddev.2015.03.011>.
- Gatmaytan, Dante B. 2001. "Cost and Effect: The Impact and Irony of the Internal Revenue Allotment." *Philippine Law Journal* 75 (4):629–679.

- Gaventa, J. 1980. *Power and powerlessness: Quiescence and rebellion in an Appalachian valley*. Urbana: University of Illinois Press.
- Gaventa, John, and Gregory Barrett. 2012. "Mapping the Outcomes of Citizen Engagement." *World Development* 40 (12):2399–2410. doi: <https://doi.org/10.1016/j.worlddev.2012.05.014>.
- Gaventa, John, and Rosemary McGee. 2013. "The Impact of Transparency and Accountability Initiatives." *Development Policy Review* 31:s3–s28. doi: [10.1111/dpr.12017](https://doi.org/10.1111/dpr.12017).
- Geys, Benny, Friedrich Heinemann, and Alexander Kalb. 2010. "Voter involvement, fiscal autonomy and public sector efficiency: Evidence from German municipalities." *European Journal of Political Economy* 26 (2):265–278. doi: <https://doi.org/10.1016/j.ejpolco.2009.11.002>.
- Guevara, Milwida M. 2000. "Decentralization and Economic Development: The Philippine Experience." *Hitotsubashi Journal of Economics* 41 (2):97.
- Hao, C., M. S. Nyaranga, and D. O. Hongo. 2022. "Enhancing Public Participation in Governance for Sustainable Development: Evidence From Bungoma County, Kenya." *SAGE Open* 12 (1). doi: [10.1177/21582440221088855](https://doi.org/10.1177/21582440221088855).
- Healey, Sarah, Sophie Lloyd, Jasmine Gray, and Aaron Opdyke. 2022. "A census-based housing vulnerability index for typhoon hazards in the Philippines." *Progress in Disaster Science* 13:100211. doi: <https://doi.org/10.1016/j.pdisas.2021.100211>.
- Huttunen, Suvi, Maria Ojanen, Anna Ott, and Heli Saarikoski. 2022. "What about citizens? A literature review of citizen engagement in sustainability transitions research." *Energy Research & Social Science* 91:102714. doi: <https://doi.org/10.1016/j.erss.2022.102714>.
- Iqbal, Kazi, and Meherun Ahmed. 2015. "Are Decentralised Governments More Effective in Mitigating Disaster Risks?" *The Bangladesh Development Studies* 38 (3):1–24.
- Jerbi, S. 2012. "Assessing the roles of multi-stakeholder initiatives in advancing the business and human rights agenda." *International Review of the Red Cross*.
- JICA. 2009. *The Study on the Improvement of Internal Revenue Allotment (IRA) System in the Republic of the Philippines*. Manila, Philippines: Japan International Cooperation Agency.
- Koechlin, L., and R. Calland. 2009. "Standard setting at the cutting edge: an evidence-based typology for multi-stakeholder initiatives." In *Non-State Actors as Standard Setters*. Cambridge University Press, edited by Anne Peters, Lucy Koechlin, Till Förster and Gretta Fenner Zinkernagel, 84–112. Cambridge.
- Llanto, Gilberto M. 2009. Fiscal Decentralization and Local Finance Reforms in the Philippines. In *Discussion Paper Series*, edited by Philippine Institute for Development Studies. Makati City, Philippines.
- Llanto, Gilberto M. 2012. "The assignment of functions and intergovernmental fiscal relations in the Philippines 20 years after decentralization." *The Philippine Review of Economics* 49 (1):37.

- Magno, Cielo, Francis Capistrano, and Sheena Kristine Cases. 2022. "Breaking Down the LGU Fiscal Performance: A Study on the Budget Utilization Rate." In *Decentralization, Digitalization, and Development: A Report on the Mandanas-Garcia Supreme Court Ruling*, 38–65. Mandaluyong City, Philippines: UNDP Philippines.
- Mamaradlo, Marivic Delos Santos, Cheng-Tao Tang, and Chun Yee Wong. 2021. "Grant Effects on Public Finance for Local Governments with Self-Selection Behavior." *Hitotsubashi Journal of Economics* 62 (1):33–58.
- Mansuri, G., and V. Rao. 2013. *Localizing development: Does participation work?* Washington, DC: World Bank.
- Masaki, Takaaki. 2018. "The impact of intergovernmental transfers on local revenue generation in Sub-Saharan Africa: Evidence from Tanzania." *World Development* 106:173–186. doi: <https://doi.org/10.1016/j.worlddev.2018.01.026>.
- Mejía Acosta, Andrés. 2013. "The Impact and Effectiveness of Accountability and Transparency Initiatives: The Governance of Natural Resources." *Development Policy Review* 31:s89–s105. doi: 10.1111/dpr.12021.
- National Disaster Risk Reduction and Management Council. 2011. National Disaster Risk Reduction and Management Framework. Quezon City: National Disaster Risk Reduction and Management Council.
- Ostrom, Elinor. 1996. "Crossing the great divide: Coproduction, synergy, and development." *World Development* 24 (6):1073–1087. doi: [https://doi.org/10.1016/0305-750X\(96\)00023-X](https://doi.org/10.1016/0305-750X(96)00023-X).
- Oxfam Philippines. 2023. Local Disaster Risk Reduction and Management Fund (LDRRMF): Utilization patterns and opportunities for improvement. Philippines: Oxfam Pilipinas.
- Pateman, Carole. 1970. *Participation and Democratic Theory*. Cambridge: Cambridge University Press.
- Republic of the Philippines. 1991. The Local Government Code of 1991. Philippines.
- Republic of the Philippines. 2010. Philippine Disaster Risk Reduction and Management Act. In *Republic Act No. 10121*. Philippines.
- Robinson, Mark. 2007. "The Politics of Successful Governance Reforms: Lessons of Design and Implementation." *Commonwealth & Comparative Politics* 45 (4):521–548. doi: 10.1080/14662040701659944.
- Saptono, P. B., and G. Mahmud. 2023. "Stimulus or Enforcement? How Intergovernmental Transfers Crowd-in Local Taxes in Indonesia." *Public Finance Review* 51 (6):782–837. doi: 10.1177/10911421231191961.
- Scott, Zoë, and Marcela Tarazona. 2011. Study on Disaster Risk Reduction, Decentralization and Political Economy In *Global Assessment Report on Disaster Risk Reduction: United Nations Office for Disaster Risk Reduction, United Nations Development Programme, and the Oxford Policy Management*.

- Shair-Rosenfield, Sarah. 2016. "The Causes and Effects of the Local Government Code in the Philippines: Locked in a Status Quo of Weakly Decentralized Authority?" *Journal of Southeast Asian Economies* 33 (2):157.
- Sicat, Charlotte Justine D., Maria Alma P. Mariano, Angel Faye G. Castillo, Catharine Adaro, and Ricxie Maddawin. 2019. Assessment of the Philippine Local Government Planning and Budgeting Framework. In *Discussion Paper Series No. 2019-18*. Quezon City: Philippine Institute for Development Studies.
- Singh, Nirvikar, and T. N. Srinivasan. 2006. Federalism and economic development in India: An assessment. *Working Paper, No. 06-12*.
- Speer, Johanna. 2012. "Participatory Governance Reform: A Good Strategy for Increasing Government Responsiveness and Improving Public Services?" *World Development* 40 (12):2379–2398. doi: <https://doi.org/10.1016/j.worlddev.2012.05.034>.
- Sturesson, Annie, and Thomas Zobel. 2015. "The Extractive Industries Transparency Initiative (EITI) in Uganda: Who will take the lead when the government falters?" *The Extractive Industries and Society* 2 (1):33–45. doi: <http://dx.doi.org/10.1016/j.exis.2014.11.006>.
- Toya, H., and M. Skidmore. 2007. "Economic development and the impacts of natural disasters." *Economics Letters* 94 (1):20–25. doi: <https://doi.org/10.1016/j.econlet.2006.06.020>.
- ULAP. 2016. "Unpacking the Puzzle of Local G." Union of Local Authorities of the Philippines, accessed November 22. <https://ulap.net.ph/resources/knowledge-products-and-reports/304-unpacking-the-puzzle-of-local-government-budget-surplus-do-local-governments-have-too-much-money.html>.
- United Nations Office for Disaster Risk Reduction. 2015. Sendai framework for disaster risk reduction 2015–2030. Geneva, Switzerland: UNDRR.
- Wei, Yao, Laura Anselmi, Luke Munford, and Matt Sutton. 2023. "The impact of devolution on experienced health and well-being." *Social Science & Medicine* 333:116139. doi: <https://doi.org/10.1016/j.socscimed.2023.116139>.
- Weingast, Barry R. 2009. "Second generation fiscal federalism: The implications of fiscal incentives." *Journal of Urban Economics* 65 (3):279–293. doi: <https://doi.org/10.1016/j.jue.2008.12.005>.
- Wetterberg, A., S. Frazer, and E. Johnson. 2023. "Addressing local health service problems through integrated governance: a case study from Senegal." *Development in Practice* 33 (3):346–360. doi: [10.1080/09614524.2022.2117275](https://doi.org/10.1080/09614524.2022.2117275).
- Williams, Gareth. 2011. Study on Disaster Risk Reduction, Decentralization and Political Economy. In *The Political Economy of Disaster Risk Reduction: International Strategy for Disaster Reduction, UNDP, The Policy Practice, and the Oxford Policy Management*.
- Wisner, Ben, Piers Blaikie, Terry Cannon, and Ian Davis. 2004. *At Risk: Natural Hazards, People's Vulnerability and Disasters*. 2nd ed. London: Routledge.

- World Bank. 2020. Disaster response and rehabilitation in the Philippines: Public Expenditure Review. Washington DC: World Bank.
- World Bank. 2021a. "Climate Change Knowledge Portal for Development Practitioners and Policy Makers." accessed January 03. <https://climateknowledgeportal.worldbank.org/country/philippines/vulnerability>.
- World Bank. 2021b. Navigating a Challenging Recovery. edited by Philippines Economic Update June 21 edition.
- World Bank. 2021c. PHILIPPINES: Mandanas Ruling Provides Opportunities for Improving Service Delivery Through Enhanced Decentralization. Manila, Philippines: The World Bank.
- World Bank. 2021d. Philippines: Poverty & Equity Brief. The World Bank.
- Zhuravskaya, E. V. 2000. "Incentives to provide local public goods: Fiscal federalism, Russian style." *Journal of Public Economics* 76 (3):337–368. doi: 10.1016/S0047-2727(99)00090-0.