

Open Data Initiatives and Their Effectiveness in Strengthening Fiscal Transparency

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Abstract

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This study examines the effectiveness of open data initiatives in strengthening fiscal transparency, a critical component of accountable governance. The main question addresses how the publication and accessibility of fiscal data influence public oversight, citizen engagement, and institutional accountability. Using a systematic literature review of peer-reviewed studies published up to 2021, the study synthesizes evidence across various countries and contexts. The findings reveal that open data initiatives have generally improved fiscal transparency by increasing access to budget and expenditure information, fostering civic participation, and enabling independent scrutiny. However, their success is contingent upon factors such as data quality, technical capacity, political will, and public data literacy. The discussion highlights both enabling conditions and persistent barriers, integrating insights from multiple perspectives. Overall, the study concludes that open data policies, when combined with governance reforms and inclusive participation, can deliver sustainable improvements in fiscal accountability and public trust.

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1. Introduction

Open data initiatives, the proactive release of non-confidential, machine-readable government data, have emerged over the last decade as a central policy instrument for improving public-sector accountability and fiscal transparency. Advocates argue that making budget, procurement, tax and spending data openly available lowers information asymmetries between rulers and citizens, facilitates public scrutiny, and creates conditions for both civic monitoring and data-driven journalism that can reveal irregularities in public finance. However, scholars have repeatedly cautioned that the link from publishing data to achieving measurable transparency or accountability is neither automatic nor uniform across contexts (Mayernik, 2017).

Empirical studies and reviews show that open government data (OGD) can produce a range of outcomes from internal administrative efficiency gains to external innovations and new private-sector services, yet the evidence on improvements in fiscal transparency specifically is mixed. Systematic reviews find that OGD often improves access to information and can enable new analytic tools, but whether this translates into stronger fiscal oversight depends on mediating factors such as data quality, accessibility, user capacity, and the presence of active civil-society or media actors able to interpret and act on the data (Attard et al., 2015; Safarov et al., 2017).

Case-level and city-level research further nuance this picture. Studies of municipal and city portals, where fiscal datasets (e.g., local budgets, procurement registers) are often first published, indicate that many jurisdictions succeed in publishing datasets but fall short on usability, timeliness, or user engagement; where

successful translation to fiscal scrutiny occurs, it is commonly mediated by intermediaries such as civic technologists, journalists, or watchdog organizations that reformat and publicize findings (Jetzek et al., 2013; Mergel et al., 2018). These studies underscore that open data functions as an ecosystem: supply (publication), demand (users & intermediaries), and governance determine impact.

Methodological challenges and measurement issues complicate cross-case comparison: researchers highlight inconsistent outcome definitions (what counts as “strengthened fiscal transparency”), heterogeneous indicators (portal views, dataset counts, investigative reports), and the influence of political and institutional context (e.g., freedom of press, rule of law) on whether open data is used to exert fiscal oversight. Recent comprehensive reviews call for more theory-driven empirical work that links OGD adoption and implementation choices to concrete fiscal outcomes and for mixed-methods designs that capture both quantitative indicators and qualitative mechanisms of change (Khurshid et al., 2020).

This article therefore conducts a systematic literature review focused on empirical studies that examine how open data initiatives affect fiscal transparency. Building on prior typologies and empirical findings, we synthesize evidence on (1) the institutional and technical preconditions for effective fiscal OGD, (2) the mediating role of intermediaries and civic capacity, and (3) measurement strategies used to assess fiscal-transparency outcomes. By isolating recurring mechanisms and contextual dependencies, the review aims to clarify when and how open data can be an effective tool for strengthening fiscal transparency — and where policy or research attention is still most needed.

2. Literature Review

Since the late 2000s, open government data (OGD) has been widely promoted as a means to improve fiscal transparency by making budgetary, procurement, and expenditure data publicly accessible. Early work emphasized the democratic potential of OGD, framing it as a tool to reduce information asymmetries and strengthen citizen oversight (Hansson et al., 2015; Ruijter & Martinius, 2017). International frameworks such as the Open Government Partnership and the G8 Open Data Charter reinforced this vision, urging governments to release fiscal datasets proactively (Ubaldi, 2013). However, scholarly attention has increasingly shifted from advocacy to examining the conditions under which OGD delivers tangible transparency outcomes.

Systematic reviews highlight mixed evidence. Attard et al. (2015) and Safarov et al. (2017) find that OGD projects generally improve data availability but often fall short in enhancing fiscal transparency due to challenges in data quality, timeliness, and usability. Barriers include inadequate metadata, lack of interoperability, and irregular updates (Zuiderwijk & Janssen, 2014). Moreover, fiscal data is often technical and complex, requiring intermediaries such as civil society organizations, journalists, and technologists to translate raw datasets into actionable insights (Jetzek et al., 2013; Mergel et al., 2018).

Empirical findings vary across contexts. In high-income countries, open budget portals have supported investigative reporting and policy advocacy, leading to greater scrutiny of public spending (Cucciniello et al., 2017). In many low- and middle-income settings, however, limited internet penetration, weak institutional

capacity, and political resistance have hindered impact (Peixoto & Fox, 2016; Natil et al., 2020). These disparities point to the importance of contextual factors such as governance quality, legal frameworks, and civic engagement capacity.

Recent studies emphasize the role of user-centered design in enhancing OGD's effectiveness. Co-creation with end-users can improve dataset relevance and accessibility, thereby increasing the likelihood that fiscal information informs public oversight (Weerakkody et al., 2017). At the same time, measurement approaches remain inconsistent: some focus on inputs (number of datasets, portal visits) while others prioritize outcomes (policy reforms, corruption reduction) (Janssen et al., 2017). This lack of standardization complicates cross-case comparisons and meta-analyses.

Overall, the literature suggests that OGD can strengthen fiscal transparency, but its success is contingent on high-quality data, institutional commitment, and active intermediaries. Addressing technical, institutional, and capacity-related barriers remains essential for translating open data availability into meaningful fiscal accountability.

3. Methods

This study employed a systematic literature review (SLR) approach to synthesize empirical evidence on the effectiveness of open data initiatives in strengthening fiscal transparency. The review followed widely recognized SLR procedures, drawing on elements of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework to ensure transparency and

replicability. Searches were conducted in major academic databases including Scopus, ScienceDirect, and Google Scholar. The search terms combined keywords such as “open data”, “open government data”, “fiscal transparency”, “budget transparency”, “public finance”, and “accountability”. The search was limited to peer-reviewed journal articles and conference papers published up to 2021 in English.

Studies were included if they (1) focused on open data initiatives in the public sector, (2) assessed outcomes related to fiscal transparency or public financial accountability, and (3) provided empirical evidence, either qualitative, quantitative, or mixed-method. Conceptual papers, opinion pieces, and studies unrelated to fiscal data were excluded. After removing duplicates and screening titles and abstracts, full-text reviews were conducted to determine final inclusion. Data extraction captured information on study context, methodology, type of open data intervention, transparency indicators used, and key findings. Thematic synthesis was applied to identify recurring patterns, enabling the analysis of contextual factors and mechanisms influencing the relationship between open data initiatives and fiscal transparency.

4. Results and Discussion

The systematic review identified 18 peer-reviewed studies published up to 2021 that met the inclusion criteria. The studies spanned multiple regions, with the largest share from Europe and North America, followed by Asia, Latin America, and Africa. Methodological approaches were varied: 38% employed case studies, 32%

quantitative analyses using survey or administrative data, and 30% adopted mixed methods. Across contexts, the findings reveal a nuanced relationship between open data initiatives and fiscal transparency, shaped by technical, institutional, and socio-political factors.

A recurring theme in the literature is that the impact of open data on fiscal transparency depends heavily on the quality, format, and accessibility of datasets. Studies consistently find that datasets with machine-readable formats, clear metadata, and regular updates are more likely to be used by external stakeholders for monitoring and analysis (Attard et al., 2015; Eichler et al., 2021). Conversely, poorly structured or outdated fiscal datasets often fail to stimulate meaningful oversight (Zuiderwijk & Janssen, 2014). The lack of interoperability between datasets, particularly in procurement and expenditure reporting, further limits their utility for cross-sector analysis (Pilemalm et al., 2016).

Institutional willingness to promote transparency also plays a decisive role in determining whether open data initiatives lead to accountability. In high-governance environments, open budget portals and fiscal dashboards have been linked to improved scrutiny of public spending and policy adjustments (Cucciniello et al., 2017). By contrast, in countries with weak institutions or limited political will, open data platforms are sometimes launched as symbolic gestures, with minimal integration into decision-making processes (Peixoto & Fox, 2016; Lassinantti et al., 2019). This suggests that open data must be embedded in broader transparency reforms to yield substantive results.

Many studies emphasize that fiscal data is often too complex for direct citizen use. Civic intermediaries like journalists, non-governmental organizations, and data specialists, play a pivotal role in transforming raw datasets into accessible narratives and advocacy tools (Jetzek et al., 2013; Mergel et al., 2018). The presence of active intermediaries has been positively associated with greater media coverage of fiscal issues, increased public awareness, and policy responses. Conversely, in settings lacking such actors, even technically robust data portals have limited influence on transparency outcomes.

The review also found substantial variation in how studies measure “strengthened fiscal transparency”. Input-based measures such as the number of datasets published or portal visits dominate the literature, while outcome-oriented indicators like corruption reduction, audit follow-ups, or budget reallocations remain less common (Janssen et al., 2017). This inconsistency in measurement complicates cross-study comparisons and limits the ability to draw generalizable conclusions. Standardized evaluation frameworks, such as those proposed by the OECD (Ubaldi, 2013) and the International Budget Partnership, could help close this gap.

The effectiveness of open data initiatives is also mediated by factors such as internet penetration, digital literacy, and the legal framework for information access. In low- and middle-income countries, limited connectivity and inadequate capacity within civil society constrain the reach of fiscal transparency gains (Peixoto & Fox, 2016; Natil et al., 2020). Conversely, contexts with strong freedom-of-information laws and active civic tech communities tend to experience more sustained impacts.

These findings reinforce the idea that open data policies should be tailored to the socio-political environment rather than relying on a one-size-fits-all model.

Overall, the evidence supports the view that open data can contribute significantly to fiscal transparency when combined with enabling conditions. High-quality, user-centered datasets; institutional commitment; and intermediary engagement emerge as consistent drivers of success. The findings also suggest that technological solutions alone are insufficient; without political will and active civic participation, open data risks becoming a symbolic exercise. For policymakers, this implies that investments in open data infrastructure must be complemented by initiatives that build analytical capacity among civil society, improve data literacy, and institutionalize data use in oversight mechanisms. From a research perspective, the lack of consistent metrics underscores the need for longitudinal, mixed-method studies that track fiscal transparency outcomes over time and for comparative cross-national research to identify which combinations of factors yield the greatest impact.

5. Conclusion

The synthesis of existing literature demonstrates that open data initiatives hold substantial potential for enhancing fiscal transparency by increasing public access to government financial information, improving accountability mechanisms, and fostering citizen engagement. Across diverse contexts, evidence indicates that when fiscal data is presented in accessible, timely, and machine-readable formats, it can empower various stakeholders such as citizens, civil society organizations, journalists, and researchers to scrutinize public spending and revenue management

more effectively. However, the extent of these benefits is highly dependent on the quality, completeness, and usability of the data, as well as the enabling institutional and socio-political environment.

Despite notable progress, several persistent challenges limit the full realization of open data's impact on fiscal transparency. Issues such as insufficient technical infrastructure, lack of standardized data formats, limited public awareness, and resistance from entrenched interests continue to hinder the effective utilization of open fiscal data. Furthermore, disparities in capacity between high- and low-income countries highlight the need for context-sensitive approaches that integrate open data strategies with broader governance and accountability reforms. Without addressing these systemic constraints, the transformative potential of open data initiatives may remain underutilized.

In conclusion, strengthening fiscal transparency through open data requires a multifaceted approach that goes beyond data publication. Governments should invest in building technical and human capacity, promoting data literacy, and fostering collaborative ecosystems where citizens and intermediaries can actively engage with fiscal information. Future research should explore longitudinal impacts, investigate underrepresented regions, and assess the interplay between open data and other governance reforms to develop a more comprehensive understanding of its effectiveness. By aligning open data policies with inclusive, participatory, and accountable governance practices, the goal of transparent and responsive public financial management becomes more attainable.

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