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Mapping Government Budgeting Research: A Systematic Literature Review

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ABSTRACT

Government budgeting is a classic and multidisciplinary field of research, making it challenging to keep track of its development. This article reviews the literature on government budgeting in three fields: public administration, political science, and public economics. We conducted a systematic literature review of 615 peer-reviewed journal articles published between 1939 and 2021. We examine the questions of who, where, what, and how in government budgeting research. Government budgeting research shows stable patterns historically and has addressed emerging issues in recent years. This literature review maps the intellectual growth of government budgeting research and sheds light on future research directions.

KEYWORDS

Government budgeting;
systematic literature review;
academic research;
interdisciplinary approach

Introduction

In 1937, Gulick identified budgeting¹ as an integral part of public administration, as summarized by Planning, Organizing, Staffing, Directing, Coordinating, Reporting, and Budgeting (POSDCORB) (Gulick, 1937). In 1939, the public finance economist Musgrave discussed the merits of a separate capital budget (Musgrave, 1939). In 1940, the political scientist V.O. Key famously asked the fundamental question of budgeting: “On what basis shall it be decided to allocate X dollars to activity A instead of activity B” (Key, 1940). In the ensuing decades, scholars in multiple disciplines, including public administration, political science, and economics, have studied government budgeting. Political science scholars focus on budgeting as a key setting to observe political dynamics, while public administration research delves into budgeting techniques and reforms. By contrast, public economics scholars tend to examine the economic effects of budgetary institutions. Despite these disciplinary contributions, there is a lack of a distinct discipline of government budgeting research (Sicilia & Steccolini, 2017), which instead remains an amalgamation of various fields.

In this study, we conduct a systematic literature review of government budgeting. Scholars have called for government budgeting to transition from a multidisciplinary to an interdisciplinary field (Rubin, 2015). Our review reveals the multidisciplinary nature of government

budgeting, encompassing political science, public administration, and public economics. Our analysis underscores an interdisciplinary approach integrating insights from these fields to understand government budgeting comprehensively.

A systematic literature review on government budgeting is critical for researchers and policymakers. Scholars have reviewed budgeting research on specific topics such as performance budgeting (Lu et al., 2015; Mauro et al., 2017) and participatory budgeting (Bartocci et al., 2022). Given the growing specialization and complexity of budgeting, it is critical to fully grasp the big picture of the field. A comprehensive literature review can assist scholars in taking stock of budgeting research and identifying directions for future advancements. A review of the entire budgeting field will help scholars put the various budgeting topics into perspective. Meanwhile, a better understanding of budgeting research will help policymakers extract practical knowledge and contribute to budgeting research. Facing the challenges of growing fiscal stress, policymakers may find it timely to understand what budgeting research offers and can offer in the future.

We join a growing literature in public administration that provides systematic reviews of key research topics in recent years (e.g., Bustos, 2021; Cepiku & Mastrodascio, 2021; Medina et al., 2022; Pandey et al., 2023). We follow the best practices of systematic reviews (Bustos, 2021;

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Moyson et al., 2018) to identify peer-reviewed, English-written journal articles on government budgeting since the birth of the field. We identify a broad range of government budgeting research in three disciplines: public administration, political science, and public economics. We set no limits on the specific topics within budgeting research. Our sample consists of 615 articles published between 1939 and 2021. We code the articles according to a metric of 14 variables that capture the key characteristics of published budgeting research. Our findings reveal a pattern that informs our understanding of the budgeting field and stimulates further discussion on future research directions.

We seek to make several contributions. First, we cover significant aspects of government budgeting research from 1939 to 2021. This review distinguishes itself by covering budgeting research in multiple topics and disciplines over an extended period. Second, we provide a systematic analysis of the budgeting literature. This approach is consistent with more recent literature review methods and provides a descriptive analysis of the critical features of published literature on government budgeting. Finally, we structure the coding beyond a bibliometric analysis to reflect critical substantive characteristics of budgeting studies, offering valuable insights for future research.

Previous budgeting literature reviews

Existing literature reviews have focused on specific budgeting topics such as gender budgeting (Polzer et al., 2021), performance budgeting (Mauro et al., 2017), participatory budgeting (Bartocci et al., 2022), budgeting in developing countries (Caiden, 1988), budgeting theories (Mitchell & Thurmaier, 2016), or budgeting for existential crisis (Redburn, 2021). More specifically, Polzer et al. (2021) analyze peer-reviewed English language articles on gender budgeting published before 2021. Their analytical framework includes four parts: gender budgeting antecedents, gender budgeting introduction across various stages, implications of context, and impact of gender budgeting. Mauro et al. (2017) review 60 English-language papers published in international journals from 1990 to 2014 on public sector performance-based budgeting. Similarly, Bartocci et al. (2022) summarize 139 English-language articles on participatory budgeting from January 1989 to September 2019. They utilized a theoretical approach for investigating the “idea journey” of participatory budgeting through four key elements: idea generation, idea elaboration, idea production, and idea impact.

The extant literature reviews paint a useful but inadequate image to fully capture budgeting research in other

allied social science disciplines. Only a handful of literature reviews are relatively broad in scope. Rubin (2005) reviews state budgeting research published in *Public Budgeting & Finance* since its founding. Mullins and Pagano (2005) review 290 articles on 25 years of research on local budgeting and finance published in *Public Budgeting & Finance*. More recently, Redburn (2021) explores budgeting during crises such as the COVID-19 pandemic and the effects the crises have on budgetary procedures. Chen et al. (2023) use structural topic modeling techniques to review the articles published in *Public Budgeting and Finance* between 1981 and 2020, identifying 15 frequently studied topics.

To summarize, our review aims to fill two gaps in budgeting research: a focus on specific budgeting topics and the limited attention paid to other allied social science disciplines. We explore all aspects of government budgeting research from the birth of the field in 1939 to 2021 and provide a systematic analysis of the government budgeting literature in public administration, political science, and public economics.

Research design

We aim to collect a comprehensive list of English-language, peer-reviewed journal articles on government budgeting. We follow the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement to structure the article search process (Bustos, 2021; Moyson et al., 2018). We use Google Scholar as the primary database for the literature search. We use Scopus as a supplementary source, which covers mainly articles published in recent decades. Research shows that Google Scholar has broader coverage than Scopus and Web of Science (Martín-Martín et al., 2018). Yet, as Halevi et al. (2017, p. 825) point out, “Google Scholar lacks quality control and clear indexing guidelines.” Thus, after collecting the articles from Google Scholar and Scopus, we cross-checked with the Web of Science database to include articles published in journals covered by the Social Science Citation Index (SSCI) or Emerging Sources Citation Index (ESCI). This allows us to balance scope and quality while avoiding relying on a single database.

The literature search and sample construction take several steps. First, we search for journal articles using Google Scholar. Budgeting can be defined as a process of “preparing a budget, which sets estimations for revenues and expenses for future periods” and a mechanism “for allocating resources to the goals and objectives of an entity and is related to the strategic plan” (Brusca & Labrador, 2016). We focus on government budgeting, not private or not-for-profit organizations. We identify

whether a study counts as “government budgeting” research by using “government budgeting” as the keyword in the “topic” search engine. We do not specify the time range and let the results to be sorted by relevance. We then review the search results for journal articles on government budgeting. We include only English publications. We have excluded non-journal sources such as books, conference papers, and unpublished materials. The process yields a total of 854 journal articles. In addition, using “government budgeting” as the keyword, we conducted a search using Scopus, which produces 519 articles. In total, we obtain full texts for 1,373 articles.

Second, we exclude the duplicated articles between the two databases ($n = 153$). Third, we assess the eligibility for the 1,220 remaining articles. We include only articles published in journals ranked in the Social Sciences Citation Index (SSCI) and the Emerging Sources Citation Index (ESCI) by the Journal Citation

Reports (JCR) from the Web of Science² under the three disciplines of public administration, political science, and economics. Notably, the list of indexed journals is periodically updated, meaning that journals may be added or removed from the database over time due to factors such as publication changes, indexing decisions, or citation-related issues, as reflected in Journal Citation Reports.³ To ensure clarity, we have relied on the 2024 SSCI and ESCI for our sample selection. We remove articles that do not mention “budget” or “budgeting” in the title, keywords, or abstract. We finally excluded the articles that studied nonprofit or private-sector budgeting. These steps remove 605 articles. In the end, we include 615 articles in the sample for the literature review⁴. Figure 1 illustrates the literature search process.

The coding scheme for the articles consists of 14 variables divided into two main categories: biographical information and critical research characteristics. Biographical details, such as author names, publication

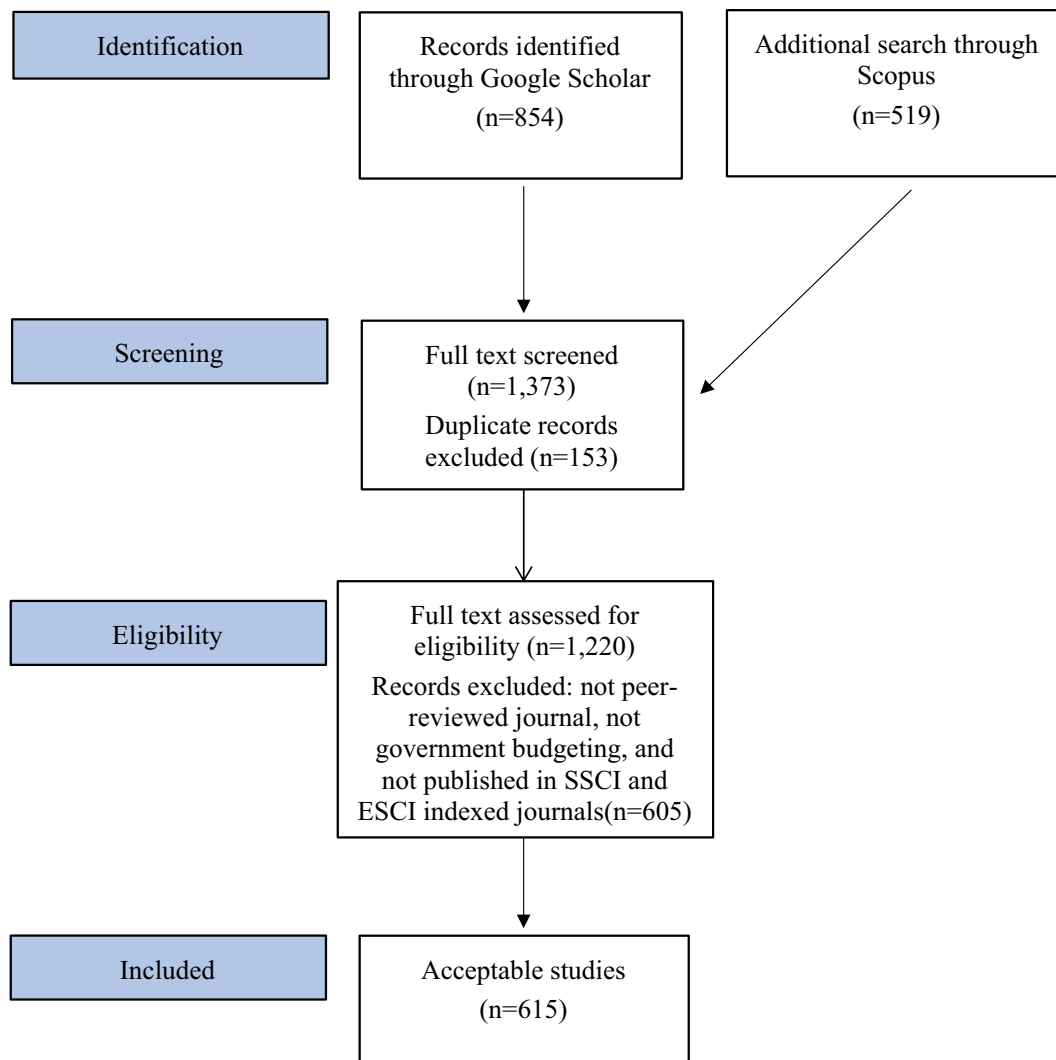


Figure 1. The literature search process.

years, and journals, require minimal subjective judgment. Research characteristics are more in-depth and cover the level of government studied, unit of analysis (e.g., government, agency, or individual decision-makers), theory applied, and data type (quantitative, qualitative, or archival). Methods of data analysis are coded to distinguish between different quantitative and qualitative approaches. We report detailed variable definitions and coding metrics in Appendix 1. A team of four researchers, three with expertise in government budgeting, coded 615 articles. Discrepancies were resolved through group review.

Government budgeting research: patterns of who and where

Academic research on government budgeting started more than eight decades ago. Musgrave's (1939) and Key's (1940) seminal works laid the foundation for budgeting research, and the literature has been growing ever since. Figure 2 shows an increasing number of journal articles on government budgeting from 1939 to 2021. The first three decades (1939–1980) produced single-digit publications annually. A clear upward trend reveals that budgeting research gained momentum throughout the years of study. The largest number of publications was recorded in 2020, reaching 26.

Next, we show the patterns of authorship of budgeting research, particularly the collaboration among scholars and the contribution by practitioners. Figure 3 shows the number of authors by year. The early budgeting research was penned by solo authors (1939–1960); scholars gradually collaborated beginning in the 1960s. The average number of authors per publication increased from 1 in the 1940s to 2 in 2021, with a peak

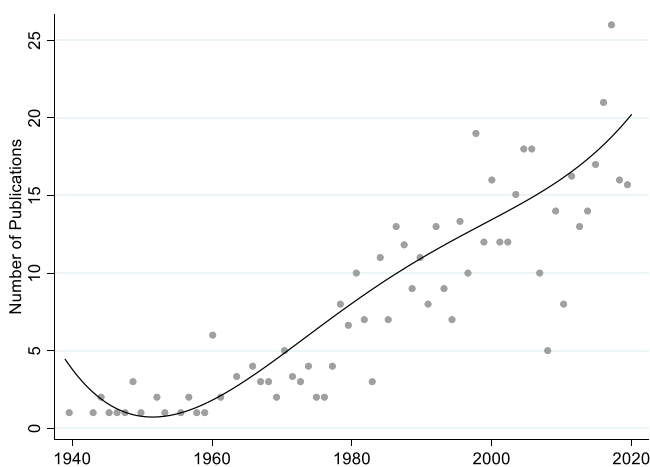


Figure 2. Number of publications by year (1939–2021).

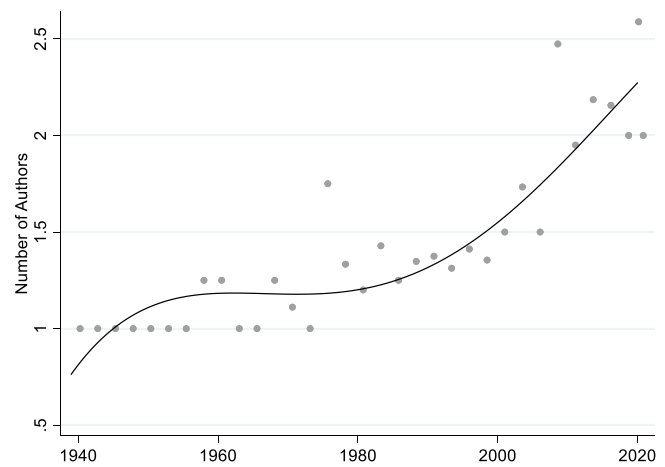


Figure 3. Average number of authors per article by year.

of 2.6 in 2020. This increasing trend of scholarly collaboration is consistent with the rise of co-authorship in the broader social sciences (Henriksen, 2016) and public administration research (Lyu et al., 2023).

Figure 4 shows the proportion of articles authored by at least one practitioner. The practitioners' role in government budgeting research has increased since the 1940s, peaking around the 1960s, but it has decreased to over 10% in recent decades. The recent decline in practitioners' role "as producers of knowledge" (Ospina & Dodge, 2005) in government budgeting might be driven by the increasing specialization of knowledge production and more use of quantitative research methods that may increase the barriers to entry. This decrease is concerning, given that practitioners are widely considered vital to producing more engaged scholarship (Bushouse et al., 2011), and academic-practitioner collaboration has been widely advocated in public administration (Orr & Bennett, 2012; Posner, 2009).

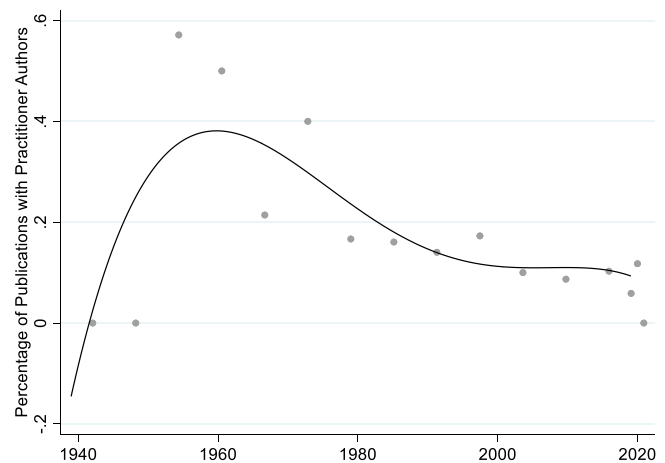


Figure 4. Proportion of articles contributed by practitioner authors.

Related, Posner (2009) observes that “there has been a retreat from engagement due to deeply rooted trends in both academic and practitioner environments” in public administration. Posner (2009) calls for “an agenda for reconnection of these vital linkages” between academics and practitioners in government budgeting research.

Further, we explore where the articles on government budgeting have been published in terms of journals and disciplines. In the sample, 615 articles appeared in 86 journals. Table 1 presents the top 10 journals in descending order based on the number of articles published. *Public Budgeting & Finance* is the most prolific journal ($n = 123$), followed by *Public Administration Review* ($n = 95$) and *Journal of Public Budgeting, Accounting and Financial Management* ($n = 57$). The top 10 journals have published 70.24% of the articles in the sample, indicating a relatively high concentration level in the journal outlets of government budgeting research.

Next, we use JCR to identify the field of the journals to allow for cross-discipline comparisons. We focus on three disciplines: Public Administration, Economics, and Political Science. Table 2 shows the distribution of the articles by discipline. Most government budgeting research appeared in public administration journals (84.88%), followed by political science journals (9.11%) and economics journals (6.02%). This is unsurprising given that all the top 10 journals in Table 1 are within Public Administration. Together, this indicates that government budgeting has remained primarily a research topic in public administration more than political science or economics.

We show the countries studied to gain further insight into the geographical scope of government budgeting research to probe the “where” question. Table 3 shows the distribution of countries as the object of government budgeting research grouped by continent. Government budgeting research has covered all the regions of the world. North America is

Table 2. Distribution of government budgeting articles by discipline.

Discipline	Number	Percentage
Public Administration	522	84.88
Political Science	56	9.11
Economics	37	6.02
Total	615	100

the most frequently studied continent (60%), followed by Europe (14.96%) and Asia (8.62%). Africa receives the least scholarly attention on government budgeting, with 1.78% of published studies. At the country level, the US (59.2%), the UK (5.69%), and Australia (5.00%) are the top three countries that are studied in the government budgeting literature. Thus, much government budgeting research has focused on developed countries’ practices in North America and Europe; Central and Latin American countries have remained understudied.

Finally, we show the level of government studied in the budgeting literature, focusing on four government levels: national, state or provincial, local, and cross-national. Figure 5 shows the level of government studied over time. National government budgeting has received the most scholarly attention since the 1950s. Local budgeting research ranks second and shows a slightly increasing trend. Budgeting of state or provincial-level governments received the third most attention. During the sample period, cross-national budgeting research has remained a minority. This suggests ample room for more comparative budgeting research across nations.

Government budgeting research: patterns of what and how

Topics and scope

In this section, we go beyond the bibliographic analysis to focus on the “what” and “how” questions of government budgeting research. Table 4 summarizes the

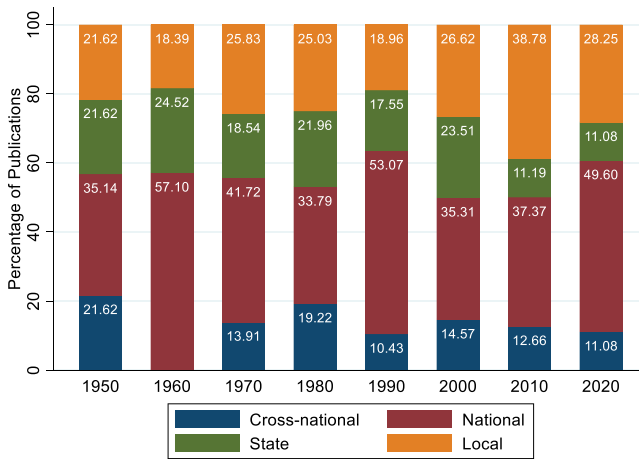
Table 1. Top 10 journals by number of articles on government budgeting.

No.	Top 10 Journals	Number	Percentage
1	Public Budgeting & Finance	123	20.00
2	Public Administration Review	95	15.45
3	Journal of Public Budgeting, Accounting, and Financial Management	57	9.27
4	International Journal of Public Administration	42	6.83
5	Public Performance & Management Review	25	4.07
6	Public Money and Management	19	3.09
7	State and Local Government Review	18	2.93
8	American Review of Public Administration	17	2.76
9	International Review of Administrative Sciences	16	2.60
10(tie)	Public Administration	10	1.63
10(tie)	Public Management Review	10	1.63
	Total top 10 journals	432	70.24
	Total sample	615	100.00

Table 3. Distribution of countries as objects of government budgeting research.

North America (60%)	Asia (8.62%)	Oceania (6.34%)
U.S. (59.2%)	China (mainland) (2.11%)	Australia (5.00%)
Canada (1.8%)	South Korea (1.30%)	New Zealand (1.33%)
	Malaysia (0.81%)	
	Indonesia (0.48%)	
	Others (3.90%)	
Europe (14.96%)	Africa (1.78%)	Central and Latin America (2.60%)
U.K. (5.69%)	Nigeria (0.32%)	Brazil (1.30%)
Germany (2.27%)	Kenya (0.32%)	Others (1.30%)
Italy (1.78%)	Ghana (0.32%)	OECD (1.78%)
Netherlands (0.97%)	Others (0.81%)	
Sweden (0.97%)		
Others (3.25%)		

N=615. The total percentage is below 100 because some articles are conceptual pieces and not based on any specific country. OECD means comparative budgeting studies for the OECD countries.

**Figure 5.** The level of governments being studied over time.

conventional budgeting topics and emerging budgeting issues.⁵ Panel (a) of Table 4 shows that the seven conventional budgeting topics represent about 71.54% of the 615 articles. The top three frequently studied budgeting topics are performance budgeting (19.67%), politics of budgeting (19.51%), and participatory budgeting (9.59%). Panel (b) shows the distribution of budgeting research on emerging issues. The four issues claim 16.75% of all the articles in the sample. Fiscal sustainability (7.96%) ranks at the top of this list, followed by

climate change (3.90%) and social equity (2.92%). Gender budgeting (1.95%) occupied the fourth spot.

Moreover, Figure 6 presents the seven conventional budgeting topics in 10-year increments from 1960 to 2020 (*n* = 440). The politics of government budgeting has always occupied the minds of budgeting scholars and practitioners, presenting roughly 20–30% of the 440 studies, with more attention in the 1990s and 2020s. The Planning-Programming-Budgeting System (PPBS) gained momentum following Johnson's administration in the 1960s. Although it was soon discarded, academic research on PPBS lasted well into the 1980s. Zero-based budgeting (ZBB) enjoyed a brief acclaim after President Carter first discovered it as Governor of Georgia and later required the federal government to utilize ZBB in the late 1970s. After being eliminated from the federal budgeting system in 1981, the academic interest in ZBB dwindled in the 1980s and beyond. Participatory budgeting started as an experimental idea to promote participation in the government budgeting process in South America and has quickly become “a central topic of discussion and significant field of innovation” (Cabannes, 2004). Its popularity seeped through academic journals and has gained a strong foothold in the past 30 years. Performance budgeting received strong academic interest throughout the years (Clark et al., 2018; Lu et al., 2024). Performance budgeting research

Table 4. Government budgeting research: conventional topics and emerging issues.

Panel (a) Conventional Budgeting Topics			Panel (b) Emerging Budgeting Issues		
Topics	Frequency	Percent	Issues	Frequency	Percent
Performance budgeting	121	19.67	Fiscal sustainability	49	7.96
Politics of budgeting	120	19.51	Climate change	24	3.90
Participatory budgeting	59	9.59	Social equity	18	2.92
Capital budgeting	38	6.17	Gender	12	1.95
Budget transparency	36	5.80	Total	103	16.75
PPBS	35	5.69			
Zero-based budgeting	31	5.00			
Total	440	71.54			

The total sample size is 615 articles.

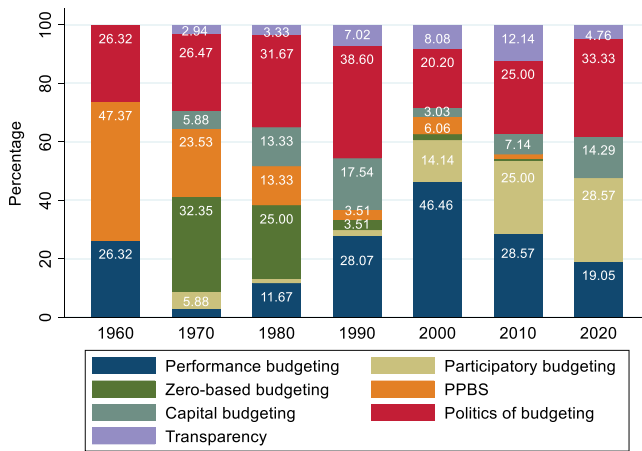


Figure 6. Conventional budgeting topics over time.

comprised 26.32% of the 440 articles in the 1960s. It contained 46.46% during the 2000s and decreased to about 20% since then. Capital budgeting was a much larger issue in the 1980s, 1990s, and 2020s than at other times. Finally, budgetary transparency has remained a small proportion but gained increasing attention since the 1970s, reaching 12.14% in the 2010s.

Figure 7 shows the number of articles on the four emerging budgeting issues over time. Gender and social equity budgeting research have closely tracked each other, with the number of publications increasing drastically since 2010. This is unsurprising, given that gender and budgeting are often framed as an equity issue. On the other hand, fiscal sustainability research came into the field strongly, with a local peak of more than three articles published annually in the late 1980s. Then, the interest dwindled until the 1990–1991 recession, in which a clear upward trend can be seen in the early 1990s. The 2008 Great Recession pushed fiscal

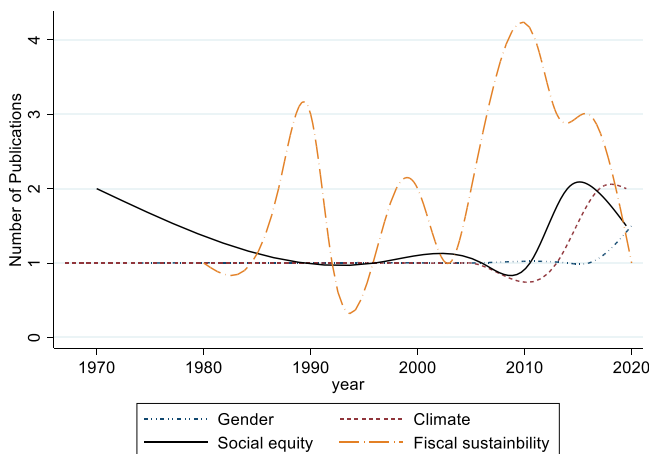


Figure 7. Number of articles on emerging budgeting issues over time.

sustainability research to its global peak, and the number of publications dropped back down after four years of intense research. Fiscal sustainability research started to pick up after the COVID-19 outbreak, and a record number of billion-dollar disaster events happened in 2023 (Anessi-Pessina et al., 2020; Redburn, 2021). The interest in climate change and budgeting has increased steadily since 2010, potentially resulting from the adverse climate events happening more severely and frequently.

Further, we explore the correlation between conventional budgeting topics and emerging budgeting issues. Figure 8 shows the results, indicated by circles (budgeting topics) and squares (emerging issues). While the size of those shapes indicates the number of publications, the lines' width reflects the relationships' strength (Brandes, 2005). There are strong correlations between fiscal sustainability, the politics of budgeting, and performance budgeting. For example, Straussman (1986) proposes a more “top-down” budgeting approach to control the federal budget deficit. More recent research attributes fiscal sustainability problems to the illogic of “taxing less and providing more” (Andrews, 2011). Similarly, Chohan and Jacobs (2017) identify a mismatch as politicians promote fiscal austerity as all talk and no action, and the public desires fiscal sustainability but does not want to refrain from public service consumption. It's also worth noting that the thickest line between participatory budgeting and social equity reveals a close connection between the two topics. Zero-based budgeting remains unconnected with other budgeting topics.

Figure 9 shows the correlation between budgeting topics and the disciplines in which the articles are published to explore the differences in budgeting topics

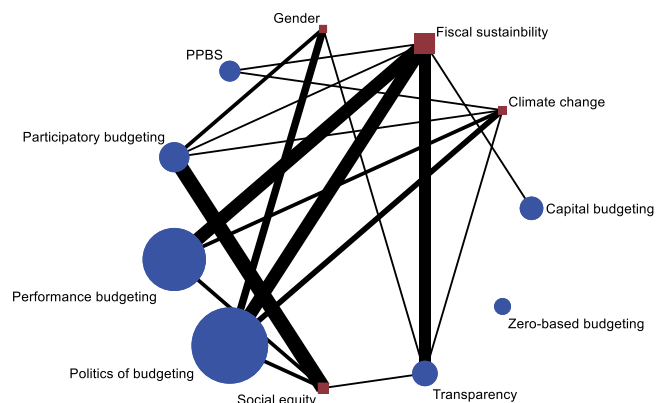


Figure 8. Correlation between budgeting topics and emerging issues.

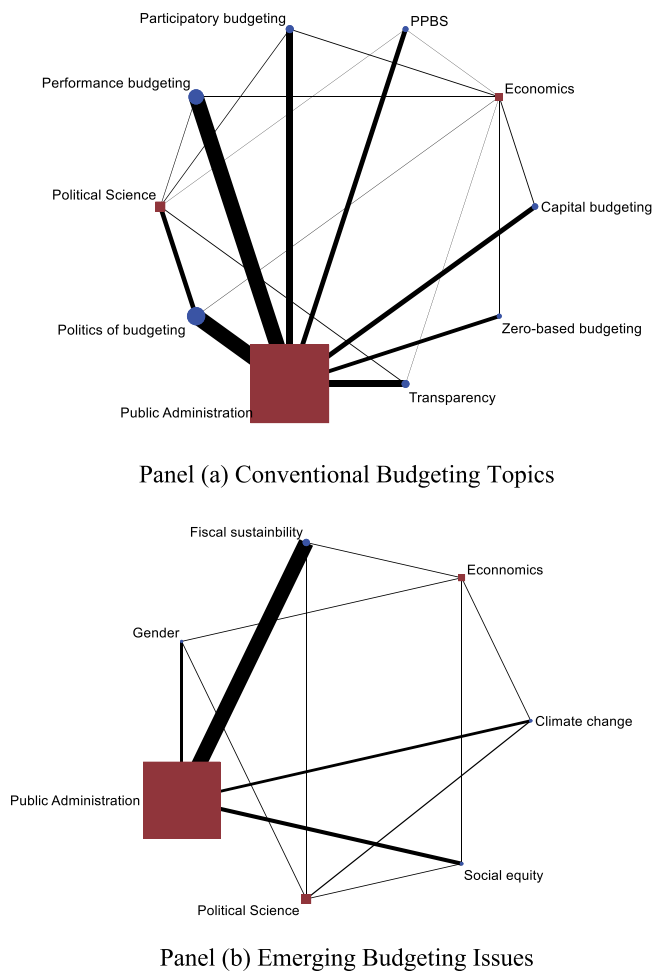


Figure 9. Correlation between budgeting topics and disciplines.

across disciplines. Panel (a) shows the correlation for conventional budgeting topics. The width of the linking lines from Public Administration shows that the politics of budgeting and performance budgeting have received the most attention. Not surprisingly, Political Science journals publish most of their budgeting research on the politics of budgeting. Finally, economics journals have focused their attention on performance budgeting, participatory budgeting, and capital budgeting. Panel (b) shows that the Public Administration has addressed all four emerging budgeting issues, with fiscal sustainability and social equity receiving more attention than gender and climate change issues. By contrast, while both Economics and Political Science correlate with these four budgeting issues, the associations remain modest, and no discernable differences exist across issues.

To assess the difference across journals in their attention to various budgeting topics, Figure 10 shows the correlation between budgeting topics and the top 10 journals identified in Table 1. Panel (a) shows the pattern for conventional budgeting topics. Not

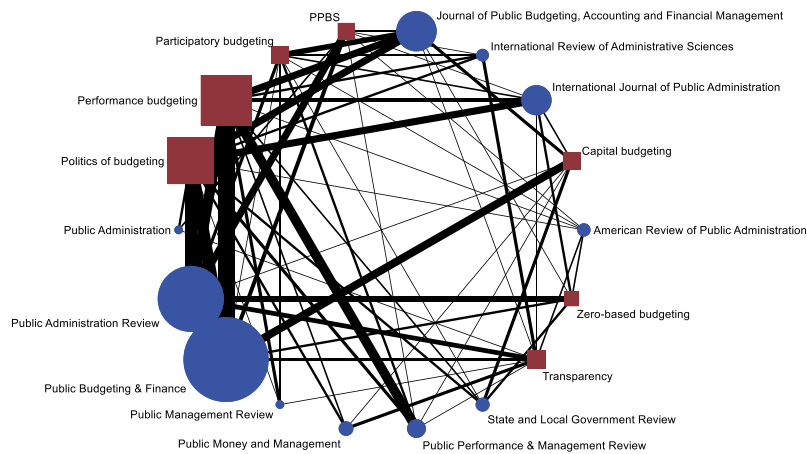
surprisingly, major journal outlets, such as *Public Budgeting and Finance*, *Public Administration Review*, and *Journal of Public Budgeting, Accounting, and Financial Management*, strongly correlate with multiple budgeting topics. *Public Performance & Management Review* is a major outlet for performance budgeting research. *International Journal of Public Administration* correlates strongly with the politics of budgeting and performance budgeting. Research on capital budgeting appears mainly in field journals such as *Public Budgeting and Finance* and the *Journal of Public Budgeting, Accounting, and Financial Management*.

Panel (b) presents the results for emerging budgeting issues. The top three journals that publish articles on the four emerging budgeting issues include *Public Budgeting & Finance*, *Public Administration Review*, and *Journal of Public Budgeting, Accounting, and Financial Management*. Fiscal sustainability studies are most frequently published in the *Public Budgeting & Finance*, *Public Administration Review*, and *International Journal of Public Administration*. Gender and budgeting studies tend to appear in *Public Money and Management*. Social equity and budgeting studies receive the most attention from *Public Administration*, *Public Administration Review*, and *Public Management Review*. Climate change and budgeting are often published in the *Public Budgeting and Finance*, *Public Administration Review*, and *International Journal of Public Administration*. Noticeably, *State and Local Government Review* remains uncorrelated with any of the four emerging budgeting issues.

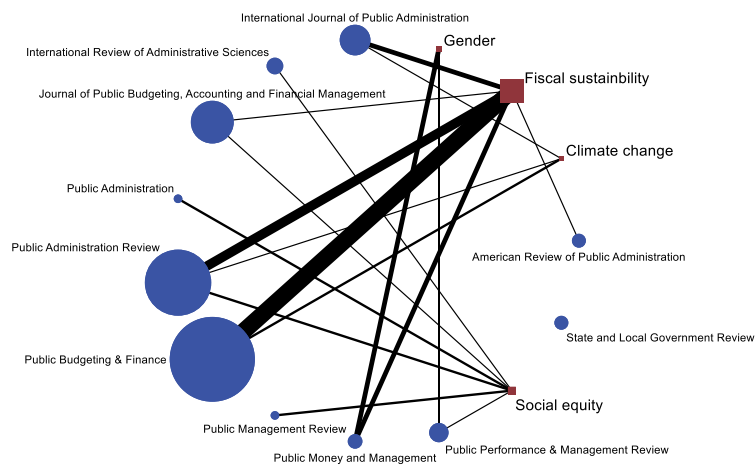
Theories and methods

This subsection describes how government budgeting research has been approached via the theoretical lens and empirical methods. Figure 11 summarizes the theories identified by the authors of the original articles. Roughly half of the articles in our database lack a clear theoretical component (47.98%). The relatively high proportion of unknown theories suggests a lack of consolidation of theoretical foundations in government budgeting research. The five identified theories include incrementalism (12.59%), public choice (8.79%), deliberative democracy (7.60%), punctuated equilibrium (6.41%), and principal-agent theory (5.70%). Besides, 10.93% of the articles in the sample identified “other theories” that are less commonly used, such as institutional theory (Mauro et al., 2018) and modern money theory (Douglas & Raudla, 2020).

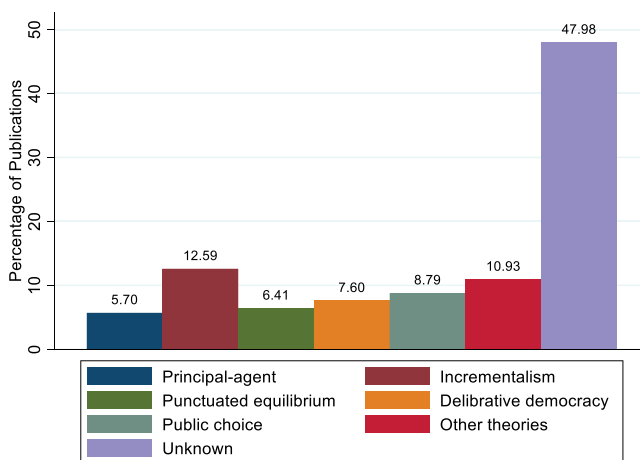
We present the correlation between the theories above and the three disciplines to explore the differences



Panel (a) Conventional Budgeting Topics



Panel (b) Emerging Budgeting Issues

Figure 10. Correlation between emerging budgeting issues and top 10 journals.**Figure 11.** Distribution of the theories in budgeting research.

in using theories in government budgeting research. Figure 12 shows that Public Administration correlates multiple theories, with incrementalism, deliberative

democracy, and public choice as the top three. Notably, other theories, a lump-up category of less frequently used theories, correlate more strongly with Public Administration than any single theory. This suggests that Public Administration drives the diversity of theories in government budgeting research. The top three theories commonly used in budgeting research in Political Science include punctuated equilibrium, deliberative democracy, and incrementalism. For Economics, the top three theories include public choice, the principal-agent model, and incrementalism, although Economics seems to have a weak correlation with these theories overall. Noticeably, incrementalism is the theory correlating with budgeting research in all three disciplines.

In which journals do the main budgeting theories appear? Figure 13 shows the correlation between the budgeting theories and the top 10 journals. Noticeably, all theories are correlated with the top 10 journals to

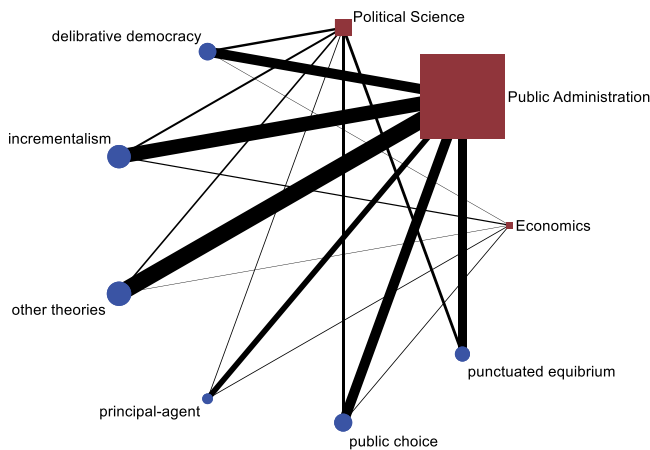


Figure 12. Correlation between the theories in budgeting research and the disciplines.

some extent, indicating that the top 10 journals collectively provide a platform for theory-driven government budgeting research. Among the top 10 journals that publish government budgeting research, *Public Budgeting & Finance*, *Public Administration Review*, and *Journal of Public Budgeting, Accounting, and Financial Management* are the top three outlets for budgeting theories. Moreover, *Public Budgeting & Finance* is closely related to articles using public choice, incrementalism, principal-agent theory, and deliberative democracy. *Public Administration Review* strongly correlates with articles using incrementalism and public choice theories. *Journal of Public Budgeting, Accounting, and Financial Management* is closely associated with articles using incrementalism and principal-agent theories. *International Journal of Public Administration* tends to publish articles using incrementalism and punctuated equilibrium theories. Besides, “other theories” correlate more strongly with *Public Budgeting & Finance*, *Journal of Public Budgeting, Accounting, and*

Financial Management, and *International Review of Administrative Sciences* than other journals, indicating that these journals serve as the outlet for less commonly used budgeting theories.

Further, we present the lines of scientific inquiries in government budgeting research. We categorized the articles based on the broad approaches to scientific research. Correlational research includes all the articles considering budgeting as an independent or dependent variable. Conceptual research means a lack of empirical information. Practice research covers articles showing reflections or comments on budgeting practices. We also separate the budgeting research that explicitly compares budgeting across nations and offers literature reviews. Figure 14 shows that budgeting research was approximately evenly distributed among conceptual pieces, practice, and cross-national comparisons in the 1950s. Correlational research did not emerge until the 1960s but started to dominate the field in the 2010s and beyond. Practice and conceptual studies comprised 23% and 27.76% of the total budgeting articles in the 2020s, respectively. Cross-national comparison remains a minority approach to government budgeting research, except around the 1950s. Review articles first appeared in the 1970s, claiming 6% to 10% of the articles since then.

Figure 15 shows the unit of analysis of government budgeting research over time. In the 1950s, less than half (33.82%) of budgeting studies were conducted at the government level. The remaining articles are evenly split between budgeting research at the agency, program, and individual levels (about 22% each). As time passes, government-level budgeting research dominates the field, reaching 83.48% of the total articles in the 2020s. The shares of agency, individual, and program budget research keep losing steam, accounting for 6.63%, 13.60%, and 6.88% in



Figure 13. Correlation between the theories in budgeting research and the top 10 journals.

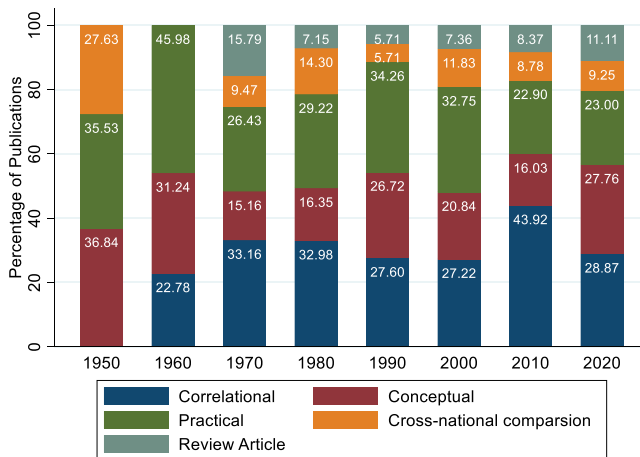


Figure 14. Lines of scientific inquiry over time.

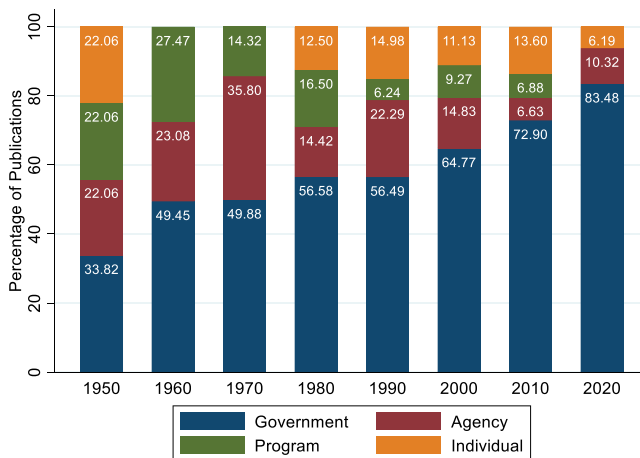


Figure 15. Unit of analysis over time.

the 2010s, respectively. The increase in government-level budgeting research seems reasonable, given that government budgeting is a collective decision-making process. However, the decrease in agency, program, and individual units of analysis indicates room for improvement in a more diversified and balanced approach to government budgeting research. Budgeting research at the program and individual level may become more feasible as administrative data becomes increasingly available.

Next, what kind of empirical information have budgeting scholars relied on? Figure 16 shows the data types used in government budgeting research over time. The most popular data type is archival data, such as government documents, which shows an upward trend and stays above the other three data types in the entire study period. Quantitative data such as surveys and qualitative data such as interviews show similar shares and trends, though quantitative data constituted a slightly larger share in most years. Not surprisingly,

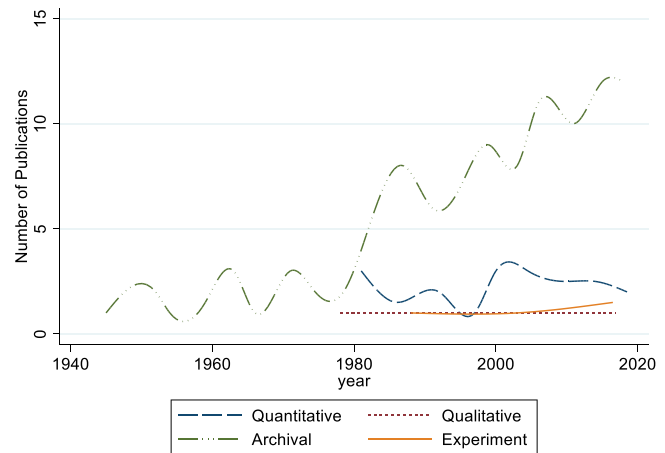


Figure 16. The type of data in government budgeting research over time.

experimental data had not been widely used until the 1990s and claimed a much smaller share.

Figure 17 illustrates the data analysis methods employed by budgeting scholars. Panel (a) presents the trend in utilizing quantitative, qualitative, and mixed methods in publications over time. Mixed methods mean the use of both quantitative and qualitative methods. Notably, qualitative methods have been the predominant choice in the field, with more than 12 publications around 2010. However, quantitative studies have been steadily gaining traction since the 1950s and have emerged as the leading approach in the number of publications in the past decade. While present since the 1970s, mixed methods remained a minority throughout the study period. Panel (b) examines the types of quantitative methods in detail, specifically focusing on whether cross-sectional data analysis, panel data analysis, or experimental methods were employed. Initially, cross-sectional data analysis was the dominant approach during the early stages, but it has declined over time. Since the 2000s, panel data analysis has started to account for a larger proportion of quantitative data analysis and dominated the quantitative methods as of the 2020s. Notably, experimental methods have steadily increased usage since the late 1990s. Experimental studies on government budgeting deserve special attention because they have increased significantly over time despite a late appearance in the literature. They are also important because of social science's "credibility revolution" (Angrist & Pischke, 2010). For instance, experimental designs have been used to test the effect of bureaucratic responsiveness on citizen participation (Sjoberg et al., 2017) and voter turnout in Brazil's performance budgeting vote (Peixoto et al., 2020). Using an experiment on Swiss state legislators,

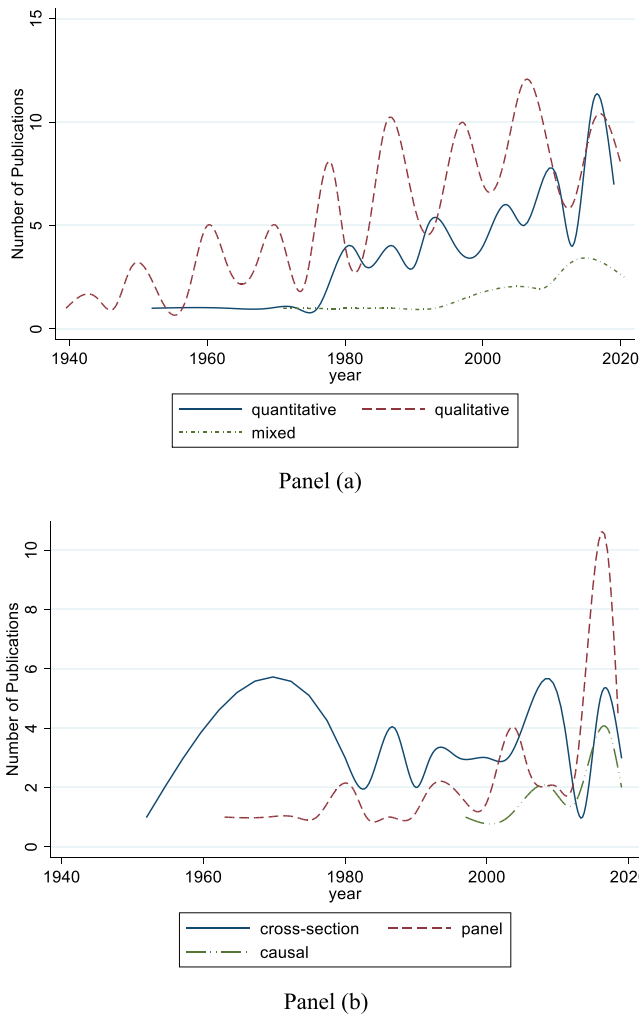


Figure 17. Methods used in government budgeting research.

Demaj (2017) investigates how performance information impacts legislators' budgetary allocation decisions and finds that performance information matters.

Finally, we explore how the data analysis methods have been used by presenting which topics to study and which theories to test. Figure 18 shows the correlation between the data analysis methods and the conventional budgeting topics identified in Table 4. Qualitative methods, which have dominated the field until the recent decade, are closely related to research on the politics of budgeting, performance budgeting, and fiscal transparency. Quantitative methods have been mainly used to study the politics of budgeting, performance budgeting, and participatory budgeting. Notably, there is a weak correlation between quantitative methods and zero-based budgeting and PPBS, two budgeting reforms studied mainly with qualitative methods.

Figure 19 shows the correlation between the data analysis and the budgeting theories. Qualitative

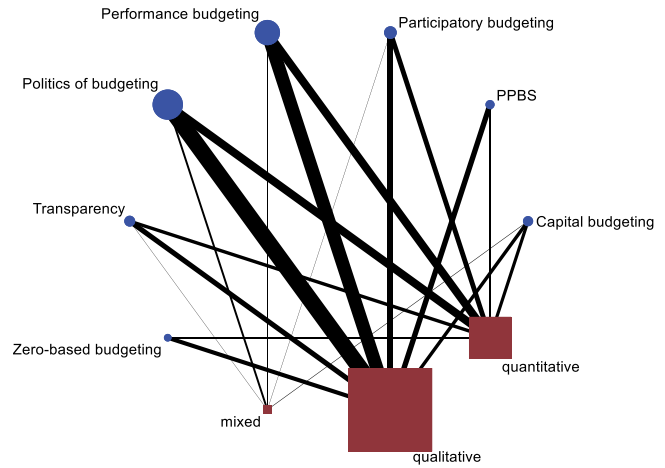


Figure 18. Correlation between data analysis methods and conventional budgeting topics.

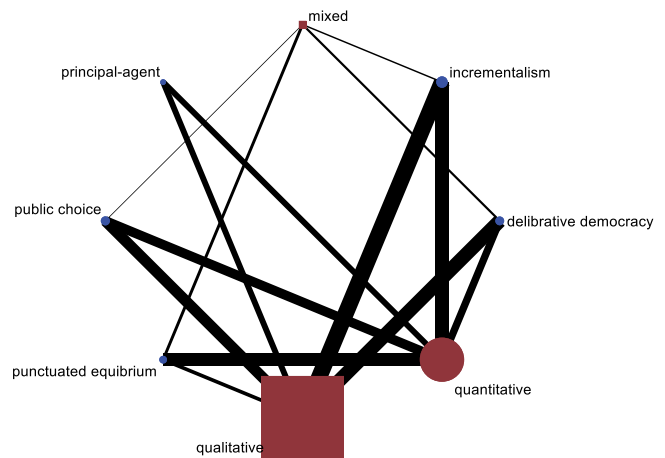


Figure 19. Correlation between data analysis methods and theories in budgeting research.

methods have been extensively used to test the budgeting theories of incrementalism, deliberative democracy, and public choice. By contrast, principal-agent theory and punctuated equilibrium receive much less attention from qualitative budgeting research. Quantitative methods have been mostly used to test theories of incrementalism, punctuated equilibrium, and public choice. Quantitative analyses correlate relatively weakly with deliberative democracy and principal-agent models, suggesting that these theories have been less tested using quantitative methods.

Discussion and conclusion

We have conducted a systematic literature review of government budgeting research from the birth of the

field in 1939 to 2021. Budgeting has been a classic and important research subject in multiple disciplines and has shown increasing specialization of research topics ever since. Prior budgeting literature reviews indicate budgeting scholars' interest in taking stock of the field. To our knowledge, we provide the first comprehensive map of the intellectual development of government budgeting research since its conception. The findings confirm many of the observations of the field and discern interesting patterns. We further revisit the agenda for future budgeting research, including shifting to an interdisciplinary approach, balancing a global perspective and relevance for local context, responding proactively to emerging issues, and building evidence-based budgeting by combining good theory with causal inference methods.

Shifting to an interdisciplinary approach

The multidisciplinary nature of government budgeting research is evident in the diverse topics and theoretical perspectives across disciplines. Budgeting research in public administration, political science, and economics has addressed different budgeting topics and advanced different budgeting theories. For instance, budgeting research in public administration has focused on performance budgeting, paid more attention to emerging budgeting issues, and used more diverse theories. Budgeting research in political science has been centered on the politics of budgeting and such budgeting theories as punctuated equilibrium and incrementalism. Budgeting research in economics has addressed participatory budgeting and theories like public choice and principal-agent models. Yet, most government budgeting research is published in Public Administration journals, suggesting inadequate scholarly attention from Political Science and Economics.

Future budgeting research will benefit from an interdisciplinary approach, incorporating insights from various disciplines to advance our understanding of government budgeting and effectively inform policy and practice. An interdisciplinary approach “creates its own theoretical, conceptual, and methodological identity” (Van den Besselaar & Heimeriks, 2001, p. 706). Scholars may cross disciplinary boundaries to integrate increasingly specialized budgeting research (Rubin, 2015). Interdisciplinary research in government budgeting is critical to addressing the complex challenges and dynamics. This approach will enable scholars to develop more nuanced insights and contribute to a deeper understanding of government budgeting in diverse contexts.

Think globally, act locally

Based on our review of 615 English-written journal articles, participatory budgeting, performance budgeting, and the politics of budgeting are the top three budgeting topics that have received the most global attention. Government budgeting research has focused on developed countries in North America and Europe; cross-national budgeting research is much less common than at the national or local levels. Future budgeting research will benefit from an international and comparative perspective. A similar call has been made for public administration research (Hou et al., 2011). A comparative study of budgeting practices across nations will advance theoretical and practical goals. The diversity of budgeting practices across nations will put budgeting theories to a more demanding test. The comparison across nations will also help budgeting policymakers learn best practices from a global perspective. In this regard, budgeting scholars have made considerable progress in studying such topics as participatory and performance budgeting (Ho et al., 2019; Shah, 2007). On the other hand, there is little doubt that budgeting is an applied social science and local context matters. Collaboration between academics and practitioners will remain important to ensure the relevance of budgeting research to local contexts (Bushouse et al., 2011; Ospina & Dodge, 2005). The challenge is to distill relevant evidence from international and comparative budgeting research for policymakers operating in a local setting.

Responding proactively to emerging issues

While there has been a growing trend of studying emerging budgeting issues, government budgeting research globally has paid more attention to fiscal sustainability and social equity than climate change and gender-related budgeting issues. Future budgeting research may be confronted with these issues more frequently. All four budgeting issues represent long-term, structural problems. First, global warming and natural disasters have been rising on the natural environment side of government budgeting systems. Budgeting research has paid increasing attention to how natural environments affect budgeting in recent years (G. Chen, 2020; Donahue & Joyce, 2001; Miao et al., 2018). Second, future budgeting research may continue to respond to fiscal sustainability challenges on multiple fronts, including population aging, increasing legacy costs such as pension and other post-employment benefits, political polarization, and unexpected fiscal shocks such as COVID-19. Finally, while we find an increase in recent research on gender and budgeting (Moser & Korac, 2021; Polzer et al., 2021) and social equity, they remain less than

5% of the total sample we reviewed. Future budgeting research may continue to address the roles of gender and social equity in government budgeting.

Balancing good theory with causal inference

Our review of theories in government budgeting research reveals some interesting patterns. Incrementalism correlates with budgeting research in all three disciplines: Public Administration, Political Science, and Economics. We identify three journals as the major outlets for theories in government budgeting research: *Public Budgeting & Finance*, *Public Administration Review*, and *Journal of Public Budgeting, Accounting, and Financial Management*. Yet, nearly half of the budgeting studies between 1939 and 2021 lack a clear theory. Future budgeting research has ample room to improve on building good theories. As de Ven and Andrew (1989) famously claims, “Nothing is quite so practical as a good theory.” Yet, as Sutton and Staw (1995, p. 371) point out, “There is little agreement about what constitutes strong versus weak theory in the social sciences.” DiMaggio (1995) adds that there is more than one kind of good theory, including “theory as covering laws,” “theory as enlightenment,” and “theory as narrative.” This diversity of viewpoints highlights the need for scholars to engage in methodological training to discern and apply theory effectively in their research. By gaining proficiency in different theoretical frameworks and methodologies, researchers can develop a more comprehensive understanding of the discipline and contribute nuanced insights to government budgeting research. One point of departure is recognizing the diversity of viewpoints on what constitutes a good theory. Budgeting research is tasked with the mission of delivering usable knowledge to policymakers. The heavy focus on practical knowledge amplifies, not downplays, the significance of theory because practical experiences are often local knowledge subject to external validity threats. Theories represent generalizable or testable propositions that facilitate knowledge accumulation across localities or nations.

The pursuit of a good theory must be balanced with good methods. Government budgeting research has witnessed a shift from qualitative to quantitative methods and a greater emphasis on a mixed-method approach. Further, quantitative methods have been advanced using more panel data than cross-sectional data. One recent advancement in empirical research methods is causal inference, including experimental and quasi-experimental methods (Angrist & Pischke, 2009; James et al., 2017). Finally, more government budgeting research has used experimental data and methods since the 1980s. The study of government budgeting can benefit from the trend of moving from correlation to causality in empirical research methods.

Our account of the government budgeting research is not without limitations. To begin with, we review only English-written budgeting literature, which may contribute to our observation of the budgeting research focusing on North America and Europe. Reviewing budgeting research in languages other than English might find it more international or comparative. Our sample includes government budgeting articles published in SSCI and ESCI-indexed journals covered by Google Scholar and Scopus databases. The coverage of government budgeting research in these databases sets boundaries for our sample—the articles in earlier decades have come mainly from Google Scholar because Scopus lacked coverage before the 1970s. Future research may use alternative ways to define and locate government budgeting research. Next, our coding scheme reflects the best practices of recent literature reviews in public administration (e.g., Bustos, 2021; Cepiku & Mastrodascio, 2021; Pandey et al., 2023), yet our categorization of topics and theories in the budgeting field is necessarily selective. For instance, our coding of the budgeting topics and issues might be more detailed from the public administration standpoint; budgeting scholars from political science and economics might take a different perspective. Similarly, future research may focus on meso-level theory in coding theories in government budgeting research. The patterns or trends can be more informative than the absolute values of our coding. Future literature reviews may explore alternative coding methods.

Further, while we find differences across disciplines in the topics and theories of budgeting research, future reviews may take a micro perspective and delve into individual studies to explore how government budgeting is studied differently. The discussion of the future budgeting research agenda is tied to the literature review findings. Nonetheless, it reflects our field intake and must be interpreted cautiously. Ultimately, instead of providing a definite answer, such a discussion is meant to stimulate even more thoughts from scholars and policymakers alike.

Notes

1. In this study, we focus on government budgeting. We do not cover the budgeting of private or nonprofit organizations.
2. As an exception, we include *State and Local Government Review*, which is not JCR ranked but regularly publishes government budgeting research.
3. See the link below for more details. https://support.clarivate.com/ScientificandAcademicResearch/s/article/Journal-Citation-Reports-Explanation-of-Missing-Dropped-or-Suppressed-Journals?language=en_US
4. The list of the articles in the final sample is available upon request.

5. In the following figures involving these variables, we use the 440 articles on conventional budgeting topics and 103 on emerging budgeting issues.

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