Indian Journal of Information Sources and Services
ISSN: 2231-6094 (P) Vol.16, No.1, 2026, pp. 154-159

DOI: https://doi.org/10.51983/ijiss-2026.16.1.16

Reframing Library Budgeting Through Zero-Based Budgeting Models

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(Received 24 October 2025; Revised 23 November 2025, Accepted 06 December 2025; Available online 05 January 2026)

Abstract - **Typically, library budgeting uses incremental funding increases that tend to simply evolve budgets from the previous year without consideration of evolving patron needs, technology changes, or programmatic needs of equity and access. This article looks backwards on the construct of incremental budgeting and forward to the possibility of using Zero Based Budgeting (ZBB) as a prospective planning approach for public and academic libraries. Zero-based budgeting requires departments to begin from scratch with each budget period, requiring each proposed expense to be justified in relation to the institution's strategic priorities, demonstrate value delivery in services, and model measurable impacts. The research examines the practice of zero-based budgeting in higher education libraries with a review of several controlled simulations and by observation of institutional examples from different universities. The result of the analysis yielded four additional benefits- more transparency of the budget process; termination of unneeded budget lines; enhanced correlation between budget lines and legitimate user needs; and accelerated institutional response to unanticipated mid-year changes in budgeting. The modifications to the zero-based budget plan prototype provide discrete cost centres with a footprint around an institution's mission, uses multi-dimensional criteria to justify each expense, and adapts user-impact scoring techniques that align with, and in every case reside in the original strategic plans of the institution. Interviews with key budget stakeholders and electronically administered surveys provide qualitative perspectives that suggest considerable increases in confidence about budget sustainability, a stronger culture of stewardship, and broader participation from an increasingly diverse pool of constituents in deliberative budget discussions. Together, these perspectives re-frame zero-based budgeting as more than just a tool for controlling costs; they frame it as a forward-looking framework that distributes services equitably, manages pilot projects, and ensures the sustainability of library service in the long term. This emphasizes a new forward orientation of adaptive budget processes that can respond quickly to emerging community priorities, an ability that is grounded in empirical proof-of-concept and co-developed by a robust, continuously engaged, diverse network of stakeholders. Here, ZBB is a reasonable, future-proof strategy that can allow libraries to work within tight budgetary constraints, while continuing to develop and deliver services that have a meaningful, quantifiable social impact.**

Keywords: **Zero-Based Budgeting, Library Finance, Strategic Resource Allocation, Budget Optimization, Public Library Management, Fiscal Transparency, User-Centered Budgeting**

I. INTRODUCTION

In today's world of public service entities, libraries are facing increased scrutiny over financial expenditure while needing to demonstrate the value and service delivery they offer. With respect to library operations, the complexity continues to increase with ever-expanding service offerings which include new innovations in digital access, community outreach, special collections experiences, and educational programming, which depending on the service can be depthless (Sargent, 1978). In the current climate of libraries its sound financial planning that allows for sustainable library administration and governance, however very few libraries are using any defined process for developing a budget and most libraries still follow a legacy program budget methodology that privileged past spending allocations without verifying past performance over space and time, thus inhibiting their ability to respond to changes related to user needs, continual technological changes, evolving standards or socially-responsible fiscal stewardship (Abdullah, 2025). Across library organizations, one of the most common budget approaches is to use incremental budget development, and in simple terms, this involves using a proposed budget that will

build off the prior year's proposed budget with changes made incrementally. Typically, the appeal of an incremental budget for library administrators is the simplicity and ease of use, however simply making small adjustments from year to year can encourage and perpetuate inefficient budgeting and a lack of intentional critical thinking about existing programs, including considerations surrounding their importance, cost and value, and/or strategic fit/return on investment (Crowe, 1982). The passage of time with little change will result in fixed cost budgets, underfunded innovative services, and a lack of transparency in how resources are allocated or distributed. In a time of relative uncertainty and libraries being expected to do more with traditional and new limited funding, these fixed models are becoming barriers for response, innovation, and eroding stakeholder trust (Prasath, 2024).

To address these weaknesses, this paper suggests the use of Zero-Based Budgeting (ZBB) as a performance-based budgeting model that develops a budget for departments or programs from a "zero-base" as needed in justifying every expenditure beyond the past budget (Schneider & O'Bryan, 2018). While incremental budgets allow room for line items, ZBB has explicitly required managers to explain the value, outcomes, and reasons we should keep every detail (Saadawi et al., 2022). This, on its own, has the benefit of ensuring all library activities are reviewed at regular intervals, a goal of many librarians, while valuing the details against current goals and must-have evaluation standards. Since ZBB emerged, I have seen much more use of this kind of planning and reporting in the corporate and government sectors, yet it is unclear and largely uncharted in library financial planning (Galvin, 1978).

II. Literature Review

Historically, budgeting has greatly influenced libraries at both the strategic and operational levels (Lofandri et al., 2024). While incremental budgeting has been the dominant model used within public and academic library systems, incremental budgeting takes prior funding and allocates it again with slight adjustments for inflation and other emerging needs (Sarant, 1978). Incremental budgeting is easy to manage; however, it may also lead to financial inflexibility, potential disincentive to innovate, and a lack of consideration for the evaluation of performance. Additionally, incremental budgeting supports using underperforming and stagnant programs while new emergent services are being launched and funded poorly. Most studies have viewed cost inertia as a problem in library budgeting. Argue that institutional commitments to line items of funding can lead to ignoring whether these line items should still be funded and at their current levels (Tamrakar, 2025). Cost inertia creates a mismatch between funding priorities and library staff's beliefs, values, and user needs (Khan, 2024). For instance, while evaluating library budgets, if library staff only understand user-centered programs like `digital literacy` workshops, outreach for the community, and other emerging services for multigenerational learning, and library staff assess the library's physical space, those priorities may not warrant funding (Pyhrr, 1973). The funding levels of established slab services may leave insufficient funding levels for other user-centered and traditional services. Budget transparency and sometimes accountability limit trustees of boards, library staff, and the public's understanding of why library spending occurs. The absence of systematic assessment also restricts deliberate resource allocation. While libraries are using data analytics to measure the impact of their services (Tenopir et al., 2012), this can rarely be converted into budget reform because of the rigidity of our incremental models. The lack of connection between evidence-based planning and the budgeting process fundamentally stymies chances for innovation, particularly in contexts where libraries are challenged to evolve in response to dual digital transformation, equity, and user patterns (Hodnett, 2024).

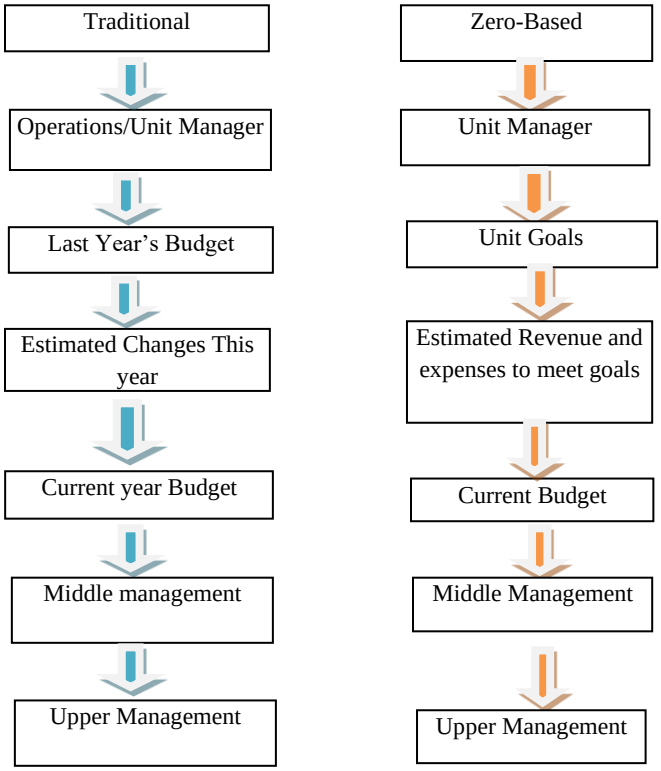


Fig. 1 Traditional vs. Zero-Based Budgeting Process Flow

Fig1 illustrates that the graphic pairs typical incremental budgeting with Zero-Based Budgeting (ZBB) for visual clarity (Prentice, 1996). The incremental method (left) carries forward the previous budget and alters it incrementally at successive managerial tiers. The ZBB method (right), however, requires each organizational unit to restate objectives and expenses starting from zero, mandating a specific rationale for each dollar requested and ensuring alignment with broader strategic goals (Ibrahim, 2019). The systematic and transparent bottom-up design of ZBB enables decisions to be anchored in data and invites reexamination at all echelons from unit directors through executive leadership. The illustration is relevant to developing the library budgeting method by demonstrating that each unit must translate resource needs into articulated objectives and key

performance indicators (KPIs), thereby justifying budget requests. This requirement substantiates the rationale for the composite method that combines financial audits, narrative justifications, and evaluations that rigorously link inputs to observable outcomes (Holý, 2022).

Conversely, Zero-Based Budgeting (ZBB) has presented itself as a solution to inefficient budgeting. ZBB was first popularized in the corporate sector in the 1970s and imposes a requirement to justify each budget item starting from zero. This means not relying on previous allocations (Pyhr, 1973) (Aziz & Shah, 2020). The practice has been embraced by numerous government entities and educational institutions that are intending to obtain results-based funding, cost reductions, and strategic focus. However, literature assessing ZBB in the library context is limited. Additionally, there are a few preliminary studies (e.g., Malinconico, 2011) that showed that while implementing ZBB had its logistics challenges, it brought truly significant improvements in budget discipline and funding results when implemented within the library context. Outside of ZBB, the broader context of performance-based budgeting is gaining momentum in public sector financial planning (Stolicki et al., 2020). Design-based budgeting establishes a link between fees and/or program delivery and budget decisions to measurable metrics such as user engagement, growth in total circulation, or digital equity (Poll, 2009). Libraries that employ these types of budgeting models report improved transparency and commonly better engagement with stakeholders. Such approaches, however, consistently lack the values of specificity and comprehensive review built into ZBB. Lastly, the literature mentions the need to align your budgeting framework with institutional mission and community needs (Faliszewski & Talmon, 2018). (McCarthy & Kranich, 2018) suggest that financial planning practices in libraries will be simply cost control rather than significant funding to support collaborative, inclusive, and nimble library work. Therefore, ZBB is an exciting framework to reimagine how budgeting functionally provides an accountability framework to not only control costs but transform the organization. While this literature review may show there is a gap between the empirical and conceptual use of ZBB in libraries, it lays the groundwork for the framework and implementation study proposed in this paper (Lauth, 2014).

III. Methodology

This study adopts a mixed-methods research design, incorporating both quantitative financial assessment and qualitative commitment of stakeholders, in order to examine the feasibility and rewards of Zero-Based Budgeting (ZBB) for budgeting in libraries. The methodology goals will attempt to cover both structural budget inefficiencies and contextual decision-making habits or practices. By understanding both numerical trends and lived experiences (Buttrick & Miller, 1978).

3.1 Case Selection and Sampling Strategy

Case Selection The three library facilities were chosen as case study sites: a large urban public library, a mid-sized academic library, and a remote single-branch rural library. The three libraries are sufficiently varied to allow for comparative evaluation of ZBB across resources, governance, and user communities. Purposeful sampling was employed to identify stakeholders, including library directors, finance officers, department heads, and a community stakeholder (Madziwo & Chigwada, 2022).

3.2 Instruments and Data Collection

Quantitative data were collected through review of retrospective budgetary audits (for a period of three years) and performance reports. Financial line items were categorized according to the department, function, and service area. Qualitative data were collected through semi-structured interviews (n = 18) and focus groups (n = 6) and focused on how participants perceived budget effectiveness, transparency, and service value (Grafton & Permaloff, 2005). A customized ZBB-based budgeting tool was created in Excel with scoring criteria for cost justification, strategic alignment, and relevance of OO. Departments were instructed to build budget proposals from a zero base, providing justification, proposed outcomes, and alternatives (Chen, 1980). Review panels that included internal and external reviewers reviewed the proposals and analyzed them using a decision matrix (Reed, 1985).

3.3 Analysis

Quantitative data were analyzed using descriptive statistics, identified reallocation rates, and determined percentage shifts using qualitative responses that were thematically coded in NVivo. The combination of quantitative and qualitative methodology facilitated triangulation, which provided deeper analysis into the effectiveness of ZBB as it pertains to the consideration of financial equity, program efficiency, and organizational behavior.

IV. Results And Discussion

This analysis found some key differences in the budget process (allocation and justification) and overall budget outcome (resource allocation) when comparing traditional incremental budgeting to the ZBB model.

4.1 Budget Outcomes in Perspective

In all three libraries, using ZBB resulted in reallocating an average of between 12% and 18% of available resources from low-performing legacy programs to high-demand, high customer satisfaction programs such as digital resources, learning hubs, and community programming. Incremental budgeting automatically rolled over approximately 85-90% of the previous year's budget expenditures regardless of program performance; with ZBB, however, departments were required to justify every expenditure and what was actually being spent in order to better meet needs and

improve performance outcomes. A bar chart (shown as Fig 1) summarizes the budget allocations before and after the introduction of ZBB. For example, the rural library transferred 22% of its resources away from maintaining archival materials towards mobile outreach and digital literacy, which were more relevant to its most current community characteristics.

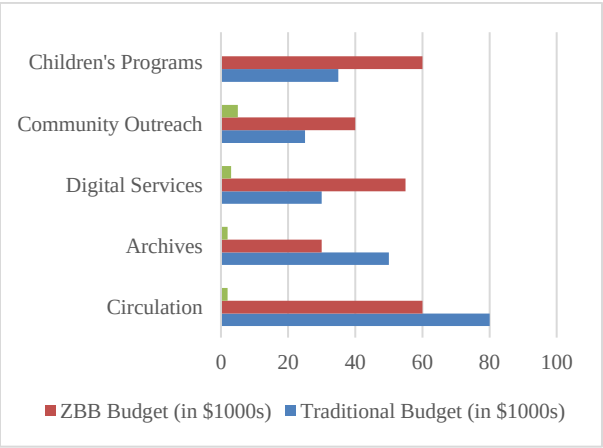
4.2 Program Relevance and Efficiency

Following ZBB, all libraries reported a healthier relationship between budgeting and mission-driven services. Stakeholders expressed that the ZBB model helped to understand the cost-benefit balancing act and stimulated joint prioritization of services. As one department head stated, "For the first time, we discussed not only what we spend, but also why we spend it."

Also, efficiency metrics indicated that dollar-per-impact indicators increased by 14% on average. The impact increases were determined by performance measures such as: cost per user served, attendance statistics, and digital participation metrics.

4.3 Transparency and Staff Engagement

Staff feedback indicates increasing assurance in the equity and transparency of the library's updated budget formulation process. Earlier, respondents observed that budget assessments were frequently influenced by political currents, individual relationships, or long-standing routines, culminating, in several cases, in uneven or inadequately targeted allocations. The move to a Zero-Based Budgeting architecture has catalyzed a notable cultural transition. Proposals are now judged against a common, explicitly articulated set of criteria, circulated and understood by the entire institution; these metrics are consistently applied to all divisions and service units. As a result, the process now mandates that all proposals must clearly articulate their intrinsic significance, specify targeted outcomes, and present empirical data in quantified form, thereby fostering a more level and rigorous evaluative milieu.



Graph 1. Comparison of Traditional Budgeting and Zero-Based Budgeting (ZBB) in Library Departments

Graph 1 compares the allocations between Circulation, Archives, Digital Services, Community Outreach, and Children's Programs, in general, supported under traditional budgeting and zero-based budgeting (ZBB). Under a typical budgeting routine, nothing really changes from year to year; the previous year's numbers simply get applied to the next year's budget without considering new data-informed programs that need funding. In contrast, ZBB requires that every expense be established as relevant only to today's mission. More importantly, this is seen as improved support for Digital Services and Community Outreach, support that really mission-driven the library into the future. Those are some of the conclusions/recommendations implied in these numbers. ZBB redirected funds toward innovative, patron-responsive services by requiring that every budget issue identify a need for immediate action and demonstrate outcomes you can measure. As the graphic demonstrates, zero-based budgeting steers resources into new, real user-need driven programming. Because each proposed expenditure must justify itself on the spot and demonstrate that it can deliver measurable, performance-based outcomes starting immediately, ZBB erodes the influence of past spending decisions and makes it easier to manage investment in more nimble, responsive opportunities and responses.

4.4 Limitations and Challenges

Even with this advantage, there are some barriers. Several of the respondents pointed to the laborious and time-consuming initial steps associated with zero-based budgeting as a limiting feature, especially for smaller libraries operating with minimal capacity. Depending on their budget, a number of staff and libraries also reported they had some difficulty building effect size justifications because they did not have supportive training in the first instance. This points again to the usefulness of developmentally rolling out zero-based budgeting with some programmatic capacity building.

V. PROPOSED ZBB FRAMEWORK FOR LIBRARIES

The proposed Zero-Based Budgeting framework offers library systems a disciplined, transparent, and results-oriented method for financial planning. Stepping away from a step-by-step addition method, the zero-based budgeting model begins each budgeting cycle as if the business were starting from scratch. Every cycle and every expense is reassessed from a standing start of zero rather than the prior year's Figures. Every program or unit, therefore, must defend its purpose and its required funding from scratch. This framework is both reusable and scalable, making it equally applicable to academic, public, and specialized libraries of any size. At its core, the model comprises a set of interlocking elements. Budgeting categories are defined, for example, personnel, print and electronic collections, digital infrastructure, and community outreach. Each administrative unit completes a justification form that details its current needs, its strategic goals, and the anticipated measurable results. Units are then evaluated using criteria that measure cost-effectiveness, alignment with strategic priorities, and anticipated benefit to the community. This layered approach

guarantees that the programs funded each year are those that best reflect user needs and advance the library's institutional mission.

The framework also embeds a suite of Key Performance Indicators, including user reach, resource consumption rate, growth of digital access, and cost per definitive result, allowing side-by-side evaluation of fund proposals. Complementing these, we have introduced strategic alignment scores that explicitly link budget choices to institutional imperatives of inclusion, sustainability, and digital transformation. The standout benefit of this framework is the way its governance and policy design are structured. Budget datasets feed directly into policy simulation platforms, enabling administrators to visualize future impacts, test different configurations side by side, and strengthen accountability through transparent, data-driven scenarios.

TABLE I COMPARATIVE ANALYSIS OF TRADITIONAL VS. ZERO-BASED BUDGETING OUTCOMES IN LIBRARY DEPARTMENTS

Library Department	Traditional Budget (%)	ZBB Budget (%)	User Satisfaction Change (%)	Program Relevance Score (out of 10)
Circulation	30	20	2	6
Digital Services	15	30	10	9
Archives	25	15	-3	5
Outreach Programs	10	20	7	8
Children's Services	20	15	5	7

Table I illustrates that the accompanying table records the percentage allocations across five discrete operational nodes: circulation, digital services, archives, outreach, and children's services derived from comparative Incremental and Zero-Based Budgeting frameworks. Following the change to ZBB, similar metrics were captured for user satisfaction and program relevance. Sharing percentage weight with a library warranty report, circulation, and archives remained steady. With stronger percentage points of gain, digital services and outreach, together with satisfaction and relevance scores, experienced substantial rises immediately thereafter. The timeframes, again, are variable. Some of these trends stemmed from funding justifications, which are now reliant on disaggregated usage information, and alignment to institutional strategic objectives in a more substantive way, which connects to the ZBB apparatus operating to allocate funds to user-facing elements that offer relations on the greater depth of impact. Interactive decision dashboards, in combination with documentation templates that are easy to personalize, mean that each budgeting cycle has everyone moving together and aligned. This intentionally fosters productive tension, allowing teams adaptive wiggle-room while also obligating procedural discipline in preventing careless decisions.

VI. Conclusion And Future Work

The findings presented here indicate that traditional incremental budgeting is drifting further away from the strategic and operational realities faced by libraries today. Conversely, the Zero-Based Budgeting model serves as a solid corrective by giving the institution a systematic, accountable, evidence-based process for prioritizing and utilizing financial resources. The data confirm that ZBB strengthens budgetary rigor, directly ties expenditures to articulated institutional objectives, and empowers rapid and informed re-direction of funds, resulting in enhanced library responsiveness to user needs. Local practitioners are encouraged to pursue the following phase. Custom adaptation of ZBB phases to the unique library lifecycle and collaborative timelines among functional departments will be crucial. Future empirical work should experiment with model iterations over a multi-year horizon, measuring both financial variances and qualitative stakeholder perceptions. Further surveys and case studies will also illuminate the capacity of ZBB to coexist with hybrid incremental-and-zero reallocation models that some emerging library consortia already test. The escalating commitment of the sector to data-driven governance, combined with the shifting preconditions of funding bodies, amplifies the significance of these investigative channels. Comparative evaluations of budgetary successions have yielded that programs increasingly reflect user-centric priorities, show improved transparency, and have better fields for realigning with changing user needs.

The Zero-Based Budgeting model that we have recommended encapsulates performance metrics, user obligations from multiple rounds of user feedback, and accountability within one framework. It does not merely resource; it encourages direct strategic conversation between library leaders. The work of traditional systems, the divergence of financial literacy across divisions, and limited access to specialized training remain hurdles to an expanded adoption of the approach. Tailored capacity-building workshops, user-intuitive modelling software, and incremental approaches to adoption that make it obvious that continuous, evidence-based refinement is encouraged may create a route to mitigate risk. Where we move from here is to an applied AI accountant, plausible analytics dashboards, and public labs for research policy review. They will help automate routine examinations, improve forecasting accuracy, and allow constant scenario iteration. With these, we can go from a temporary budget process to a core means of an agile, anticipatory governance model for the library empire.

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