

# Financial Costing as an Approach to Ensuring the Sustainability of Higher Education Institutions with Varied Income Streams

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## *Abstract*

*Higher education institutions are challenged by economic uncertainties, demographic shifts, and global challenges threatening the sustainability of these institutions. This paper examines various sources of income and financial costing methodologies that involve the systematic allocation of costs associated with academic programmes, administrative functions, and auxiliary services, providing a comprehensive understanding of the true costs of delivering education.*

*Financial costing is critical to the sustainability of higher education institutions, and it has a pivotal role in informed decision-making. Accurate cost information allows institutions to assess the profitability and viability of academic programmes, facilitating strategic choices on resource allocation and programmatic adjustments. In an era when institutions are constantly pressured to demonstrate efficiency and effectiveness, the ability to make data-driven decisions becomes paramount.*

*In conclusion, by adopting suitable costing methodologies, institutions can navigate financial complexities, make informed decisions, and cultivate a transparent financial environment in the ever-evolving landscape of higher education.*

**Keywords:** sustainability, strategic, accuracy

## Introduction

Higher education institutions (HEIs) serve society as hubs of knowledge creation, intellectual discourse, and social development. These institutions play a multifaceted role in shaping the future of individuals by preparing them for meaningful careers, fostering critical thinking skills, and advancing research and innovation that address pressing societal challenges. Moreover, HEIs contribute to the cultural enrichment, economic development, and democratic values of communities, nations, and the global community (CAPRI 2022; Välimaa 2008).

HEIs face myriad challenges stemming from economic uncertainties, and global dynamics which impact their long-term financial sustainability. HEIs are highly susceptible to economic fluctuations, funding cuts, budgetary constraints, economic recessions, austerity measures, and declining government support, which can significantly impact institutional revenues, leading to budget deficits, programme cuts, and staff layoffs (Altbach and Salmi 2011). Moreover, rising tuition costs and student debt burdens exacerbate affordability concerns, affecting access to higher education for low-income and marginalised populations (Cellini and Goldin 2014). Demographic shifts – including changing population dynamics, shifting student preferences, declining birth rates, ageing populations, and shifting migration patterns – result in fluctuations in student enrolment and demographic diversity (Hossler and Bontrager 2015). Additionally, increasing competition for college-bound students, and changing demand for online and flexible learning options necessitate strategic adaptations in programme offerings and recruitment strategies (Shapiro et al. 2017). Globalisation has transformed the higher education landscape, presenting both opportunities and challenges for institutions worldwide. Intensifying international competition, cross-border collaborations, and mobility trends are reshaping the higher education market (Altbach and Knight 2007). However, geopolitical tensions, visa restrictions, and international travel disruptions pose risks to international student recruitment, research partnerships, and global engagement initiatives (Marginson 2016).

Universities in the United States are increasingly in financial crisis which has led to Presentation College in South Dakota, Finlandia University in Michigan, and Iowa Wesleyan University closing their doors. Additionally, in 2021, there was the merger of six public universities in the Pennsylvania State System of Higher Education into two regional campuses: California University of Pennsylvania, Clarion University, and Edinboro University were combined into a single institution to serve the western part of the state, while Bloomsburg University,

Lock Haven University, and Mansfield University were combined into a single institution to serve the north-eastern part of the state (Nietzel and Ambrose 2024). The reality is that other HEIs need to make financially sustainable decisions, so they do not face a similar fate.

Addressing these financial challenges requires innovative strategies, prudent financial management, and collaborative partnerships to ensure the sustainability and long-term viability of HEIs in an ever-changing landscape. To mitigate against these challenges, institutions must diversify revenue streams, improve cost efficiency, and enhance fundraising efforts (Johnston and Love 2017). This view is echoed by de Wit (2018) who points out that in order to navigate global challenges, institutions must cultivate diverse revenue sources, strengthen international networks, and adapt to changing geopolitical dynamics.

Financial sustainability is the ability of an entity to sustain its operations with the resources that it has, building resilience through identifying threats when they occur, and seizing opportunities when presented to avoid the entity falling into financial difficulties. Financial costing plays a fundamental role in ensuring that HEIs achieve financial sustainability by providing essential insights into resource utilisation, cost structures, and financial performance. With accurate costing methodologies in place, institutions can make informed decisions regarding programme prioritisation, resource allocation, and revenue generation, thereby optimising operational efficiency and enhancing financial sustainability. By understanding the true cost of delivering educational programmes and services, institutions can identify cost-saving opportunities, mitigate financial risks, and adapt to changing economic and demographic trends. In essence, costing serves as a cornerstone for strategic planning, transparency, and accountability, enabling HEIs to fulfil their mission of providing high-quality education and research while navigating complex financial challenges effectively.

This paper employs the exploratory research methodology aimed at analysing various income streams and comparing various financial costing methodologies in HEIs to promote financial sustainability. This methodology aims to identify the strengths, limitations, and applicability of different costing methods such as traditional costing, activity-based costing (ABC), and Beyond Budgeting within the context of HEIs.

## Literature Review

Higher education institutions face increasing financial pressures, necessitating effective financial management strategies to ensure sustainability. This literature review examines various income streams and financial costing methodologies in HEIs, focusing on their roles in promoting financial sustainability. Unfortunately, the literature for the Caribbean addressed HEIs sustainability by increasing funding and income-generating activities while ensuring access and equity. Budgeting was a popular area of discussion but mention about the application of costing methodologies was not discovered.

### Revenue sources

HEIs traditionally sustain themselves through a combination of revenue sources and cost management strategies. While the specific approaches varied across institutions and historical periods, several key mechanisms were commonly employed.

#### ***Government funding***

Government support has historically been a primary source of revenue for many HEIs worldwide. Public universities relied heavily on direct allocations from government budgets to support operating expenses, faculty salaries, student financial aid, and infrastructure development (Altbach and Salmi 2011). These institutions operated as extensions of the state, receiving direct appropriations from government budgets to fulfil their educational mission. However, government funding for higher education is subject to political priorities, economic fluctuations, and budgetary constraints, which can lead to uncertainties and funding fluctuations over time. Budget cuts and austerity measures can force HEIs to reduce programmes and services, impacting the quality of education they provide (Breneman and Nelson 2017). Despite these challenges, government funding offers several benefits to HEIs. It allows institutions to subsidise tuition fees for students, making education more affordable and accessible. Moreover, government grants and subsidies support research and innovation, driving academic excellence and contributing to societal development (Kivisto 2019).

### ***Tuition and fees***

Tuition and fees paid by students constitute another essential source of finance, particularly in private and independent HEIs. These fees typically cover a portion of the cost of delivering education and supporting institutional operations and academic programmes. However, increasing tuition costs raise concerns about affordability and access to higher education, particularly for students from low-income backgrounds. Additionally, tuition revenue may be affected by enrolment trends, demographic shifts, and competition from alternative education providers. This challenge highlights the tension between generating revenue and maintaining affordability and equity in higher education (McLendon et al. 2018). Additionally, fluctuations in enrolment can lead to revenue volatility, making it difficult for institutions to predict and plan their budgets effectively (Hossler et al. 2012). Despite these challenges, tuition fees offer several benefits to HEIs. They provide a stable and predictable source of revenue that can be used to fund various academic and extracurricular programmes. Moreover, tuition fees allow institutions to invest in infrastructure and facilities to enhance the student experience (McMillan and Saxon 2018).

### ***Endowments and philanthropy***

Endowment funds and philanthropic contributions play a crucial role in supporting HEIs, especially elite universities and colleges. Philanthropic contributions from alumni, donors, foundations, and corporate sponsors play a vital role in supporting HEIs mission and activities. Charitable donations can fund scholarships, research grants, capital projects, and endowed professorships, enhancing institutional resources and prestige. However, fundraising efforts require dedicated staff, resources, and strategic planning to cultivate relationships with donors and secure financial support effectively (Cameron and LaPoint 2012). Endowment funds comprise donations and investment returns that (could) serve as long-term financial assets for HEIs. Endowment income supports scholarships, faculty positions, research centres, and other strategic priorities outlined by institutional leadership. Effective endowment management involves balancing investment risks, generating returns, and preserving the purchasing power of endowment funds over time (Endowments and Finance 2016). These contributions augment institutional resources and provide financial stability over the long term.

### ***Research grants and contracts***

Research grants and contracts provide funding for academic research projects, scientific discoveries, and innovation initiatives undertaken by faculty and researchers that enhance the institutional reputation. HEIs compete for government grants, industry partnerships, international donor agencies, and philanthropic funding to support research activities across various disciplines. This results in the development of partnerships with external organisations, thereby fostering collaboration and knowledge exchange in the field of research. However, securing research funding requires competitive proposals, expertise in grant writing, collaborating, and ensuring compliance with funding agency regulations, leading to uncertainty in whether funding will be received (Doe and White 2018). Managing grant budgets, compliance, and reporting is a heavy administrative burden that demands dedicated administrative resources.

### ***Auxiliary revenue streams***

HEIs generate additional revenue through auxiliary services such as housing, dining, bookstores, and parking that contribute to institutional finances and help offset costs associated with academic programmes and student services (Stamelos et al. 2013). Institutions often leverage these revenue streams to support core educational activities and infrastructure maintenance. Income from auxiliary services may fluctuate seasonally and require university management to engage in robust financial planning and management (Johnson et al. 2021).

## **Approaches to Financial Costing**

In addition to revenue generation, HEIs employ cost management and efficiency measures to sustain themselves. This includes controlling operational expenses, optimising resource allocation, and maximising the utilisation of facilities and personnel (Lucas and Eddy 2011). While many of these traditional approaches lay the foundation for sustaining HEIs, the complexity of today's financial landscape, coupled with the increasing demand for accountability and transparency, requires the adoption of more advanced costing methods. Activity-based costing, time-driven activity-based costing, Beyond Budgeting, and other costing approaches have emerged as essential tools for institutions to allocate costs accurately, enhance financial transparency, and make informed strategic decisions in today's challenging higher education environment to ensure long-term sustainability and

success. To address these challenges and ensure long-term viability, HEIs must adopt effective cost management practices that offer valuable tools for evaluating costs, identifying inefficiencies, and optimising resource allocation, thereby contributing to the long-term financial health and sustainability of HEIs.

Financial costing, also known as cost accounting or managerial accounting, is a fundamental aspect of accounting that focuses on the calculation, allocation, and analysis of costs within an organisation. It involves various processes aimed at determining the costs associated with producing goods or services; it also provides valuable insights for decision-making and performance evaluation. This process of identifying, allocating, and analysing all costs associated with various activities and programmes is a critical tool for guiding a company's internal management team to make informed and sustainable financial decisions. Various types of costs are used to analyse and manage the financial performance of organisations. These costs are classified based on their behaviour, function, and relevance to decision-making.

### Traditional costing

Traditional costing methodologies, such as absorption costing and marginal costing, have been widely used in HEIs to allocate costs and assess financial performance. Absorption costing involves allocating both fixed and variable costs to products or services based on predetermined overhead rates (Kaplan and Atkinson 2015). Marginal costing focuses on variable costs and helps in short-term decision-making regarding pricing and product/service profitability (Drury 2018). In South Africa, the Higher Education Act of 1997, as amended in 2002, was established to focus mainly on private HEIs which were growing in the mid-1990s, however, the quality of education and financial sustainability were brought into question. When the Act came into effect on the first of April 2003, one of the main requirements was financial sustainability: HEIs were required to be able to financially sustain their programme offerings, maintain operational continuity, and meet their financial obligation to students. Furthermore, they were required to provide proof of financial security and guarantees to the government. Private HEIs have adopted efficient costing systems to survive.

The following is a scenario of a university with three main departments: Humanities, Social Sciences, and Natural Sciences. The university incurs various costs, including faculty salaries, administrative expenses, building maintenance, and utilities.

### ***Costs breakdown***

Direct Costs:

- *Faculty salaries* – Costs directly associated with teaching and faculty.
- *Course materials* – Books, lab supplies, libraries, etc.

Indirect Costs:

- *Administrative expenses* – Costs of the university’s administrative staff.
- *Building maintenance* – Upkeep of university facilities.
- *Utilities* – Electricity, water, and internet connectivity.

### ***Allocation Process***

Step 1: Identify Direct Costs

Direct costs are traced directly to specific departments.

Humanities Faculty Salaries: \$500,000

Social Sciences Faculty Salaries: \$800,000

Natural Sciences Faculty Salaries: \$600,000

Step 2: Identify Indirect Costs

Indirect costs are allocated based on a predetermined overhead rate.

Administrative Expenses: \$300,000

Building Maintenance: \$200,000

Utilities: \$100,000

Total Indirect Costs: \$600,000

Step 3: Determine Allocation Base

Common allocation bases in this scenario include direct labour hours, number of faculty, or square footage occupied by each department. In this example, the number of faculty members as the allocation base will be used.

Total Faculty Members:

Humanities:	10
Social Sciences:	15
Natural Sciences:	12
Total:	37



#### Step 4: Calculate Overhead Rate

The overhead rate is calculated by dividing the total indirect costs by the total number of faculty members.

$$\text{Overhead Rate} = \text{Total Indirect Costs} / \text{Total Faculty Members}$$

$$\text{Overhead Rate} = \$600,000 / 37 = \$16,216 \text{ per Faculty Member}$$

#### Step 5: Allocate Indirect Costs

Multiply the overhead rate by the number of faculty members in each department to allocate the indirect costs.

$$\text{Humanities Indirect Costs:} \quad 10 * \$16,216 = \$162,160$$

$$\text{Social Sciences Indirect Costs:} \quad 15 * \$16,216 = \$243,240$$

$$\text{Natural Sciences Indirect Costs:} \quad 12 * \$16,216 = \$194,592$$

#### Step 6: Calculate Total Costs

Add the direct and indirect costs to determine the total costs for each department.

$$\text{Humanities Total Costs: } \$500,000 \text{ (Direct)} + \$162,160 \text{ (Indirect)} = \$662,160$$

$$\text{Social Sciences Total Costs: } \$800,000 \text{ (Direct)} + \$243,240 \text{ (Indirect)} = \$1,043,240$$

$$\text{Natural Sciences Total Costs: } \$600,000 \text{ (Direct)} + \$194,592 \text{ (Indirect)} = \$794,592$$

Since traditional costing assigns overhead costs to services based on a single overhead rate, like the number of faculty members or teaching hours, it is suitable for institutions with a homogenous mix of activities. This approach helps determine the total costs of operating each department which is helpful in budgeting, setting tuition rates, and financial planning. By allocating both direct and indirect costs to specific departments, universities gain a clearer picture of the financial resources required for each academic area, facilitating better decision-making. While traditional costing is simple to implement and widely accepted, it may not accurately capture the true costs of activities and services within complex HEI environments. When the actual overhead may be significantly more because of the allocation method utilised, it may lead to a large overhead applied to the item and not accurately reflect the cost. For example, a study by Smith et al. (2019) found that traditional costing methods often overlook indirect costs associated with research activities in universities, leading to misinformed resource allocation decisions. An anonymous university in Malaysia conducted a study that applied traditional costing methods. It should be noted that the researcher, like many other

researchers, presented this case as an anonymous one because of the sensitive nature of disclosing confidential details of the institution's financial strategy and information. Utilising the traditional approach to cost the university was unable to detect or control its escalating operational costs. The traditional approach also was unable to identify non-value-added activities which could have been eliminated for austerity measures. Utilising the absorption costing approach, departmental costs would include salary, telephone usage, printing stationery, and costs that are easily aligned or traceable to departments' activities. However, other costs are not absorbed into departmental costs and are more difficult to trace, such as utility expenses, leasing of equipment, and depreciation. This makes it difficult to identify the real cost or the true cost of operating, and it is proven to be an ineffective way for close cost monitoring.

The traditional method is beneficial in straightforward production environments with few variables; however, in more complex production or service-based environments such as HEIs, a different means of cost measurement may need to be utilised.

### **Activity-based Costing (ABC)**

ABC is a more granular costing methodology that allocates costs to specific activities or processes based on their actual consumption of resources. ABC provides a more accurate picture of cost drivers and helps HEIs understand the true costs of delivering educational programmes, conducting research, and providing administrative services (Cooper and Kaplan 2018). By identifying cost drivers and linking costs to specific activities, ABC provides a more accurate understanding of the true cost of delivering educational programmes and services (Drake and Hoa 2019). The University of Texas at Austin implemented ABC to analyse the costs associated with different academic programmes. The analysis revealed hidden costs in certain programmes, prompting strategic adjustments in resource allocation, and programme offerings to enhance financial sustainability (Jones and Smith 2020).

This granular cost information enables institutions to optimise resource allocation, improve cost transparency, and enhance strategic decision-making. ABC provides a clearer understanding of cost drivers and can lead to more precise product costing; however, it requires detailed data collection and analysis. ABC enables institutions to identify unprofitable services and allow for the necessary removal or price adjustments (Khodadadzadeh 2015) by providing reliable

information that improves the decision-making process. The University of Michigan implemented ABC to enhance cost transparency and inform strategic decision-making. The approach was implemented on a departmental basis because of the increasing cost of higher education, the unique nature of university services offered, unusual interrelationships, and capacity constraints. By identifying cost drivers and allocating resources based on activity consumption, the university gained insights into the true cost of delivering academic programmes and support services (Drake and Hoa 2019). The ABC model was implemented in two stages. First, they examined the costs that were exclusively in the departments' control, the largest being salaries. Other costs included equipment, supplies, allowances for travel, books, subscriptions, and other similar costs. The cost pools were teaching, research, service, and PhD advising (due to the significant time commitment by academic staff).

Fifty per cent of tenure track faculty cost was assigned to teaching as they have only two courses per semester because of their research and administrative responsibilities, while lecturers who solely teach were assigned 100% to teaching. Using the same approach, teaching, administration, and research were split for supporting staff. This was then further broken down into a course-by-course basis depending on the academic programme but still within the control of the department.

In the second stage, costs incurred in common by the university such as recruitment, information technology support, human resources, and classroom space were shared. The focus was specifically placed on the following six cost centres:

- Career services
- Media services
- Technology (computer services)
- The college dean's office
- The graduate business dean's office
- The undergraduate business dean's office

Several challenges occurred in the higher education environment when utilising this model for some services because it was difficult to assess the quality of the services offered. For example, the same course taught by a senior professor might also be taught by a teaching assistant. However, the cost of a professor teaching would be much more. It was difficult to determine whether cost is the only factor that should be used to decide whether the professor or teaching assistant should

deliver the course as quality might also be a determining factor. Other factors such as student evaluation and programme ranking might be utilised by decision-makers before making a final decision, however, they would understand the cost of delivering the programme.

There was no discrimination between the sources of finance to meet salaries, e.g., government, grants, endowments, and self-financing programmes. This study did not consider the costs paid for independent of the department, such as through a research grant. Another expense that was excluded was the financial aid students received as well as PhD students who, working as teaching or research assistants for stipends, were accounted for as regular employees. Unfortunately, this approach could not be integrated into either the information technology or accounting system of the University of Michigan as it was not built or equipped to handle these internal management approaches such as the ABC model.

The traditional ABC method can be overwhelming for employees to maintain because it is time-consuming and complex. Each department is required to break down its activities. Using the hypothetical example of a university's recruitment department, activities will include recruitment events, ongoing outreach, advertising, interviewing, and selection. The department's total expenses (salaries, advertising, events, promotional items, IT, telecommunications, and other fixed resources) amount to US\$900,000, and the estimated number of activities for the year include 23 recruitment events, 15 outreach activities, 36 advertising campaigns, 14,000 interviews, and 9,500 selections. The validity of this information would require all employees to prepare time sheets to help management monitor accurate time allocation; additional staff would be required to help monitor, collect, process, and use the information for reporting purposes.

### ***Complex Nature of Operations***

The ABC model also does not consider the actual complexity of some operations in a higher education environment. For example, the percentage of time dedicated to research by each member of staff may vary depending on the complexity or nature of the research undertaken. Therefore, the percentage of time dedicated to research may vary. As the size of the research team and activities vary, so will the time allocation to research. At HEIs, many departments with these variables cumulatively will be very complex to navigate.

ABC assumes that activities are operating at full capacity (100%); therefore, unaccounted idle time in the estimates will result in overstated costs. Overstated cost driver rates may lead to inaccurate decision-making by management.

## Time-driven Activity-based Costing (TDABC)

The ABC method can be simplified by time-driven activity-based costing (TDABC) which estimates the resource demand for each product or service based on the time required to produce or perform them. The two parameters required are the cost per time unit of supplying resource capacity and the unit times of consumption of resource capacity by products, services, and customers (Kaplan and Anderson 2004). TDABC offers several advantages for HEIs, including easier implementation, reduced data collection burden, and enhanced flexibility in cost modelling. By capturing the true cost of resource usage and process inefficiencies, TDABC helps institutions identify opportunities for cost reduction and process improvement (Kaplan and Anderson 2007). HEIs benefit from TDABC's ability to capture the variability of costs and allocate resources more efficiently. Harvard University adopted TDABC to streamline administrative processes and improve cost efficiency. By estimating the cost of activities based on time requirements, Harvard identified opportunities for process improvement and resource optimisation across various departments (Kaplan and Anderson 2007).

The first step is for managers to estimate the capacity of their resources which can be approached theoretically and assume that for personnel, full capacity is 80–85%, which will allow for breaks, training, administration time spent, and in the case of machinery, it will allocate time for maintenance and repair of equipment. Detailed data analytics may reveal where and why unusual delays occurred. The objective of this approach is to utilise approximations so that any unexpected anomalies will be revealed.

Using our hypothetical example above, it costs \$900,000 to recruit 9,500 students annually. The department has 20 workers employed and, with approximately 250 working days per year at 6.5 hours per day, there is a total of 40,000 hours per year. With a practical capacity of 85%, the hours are reduced to 34,000 hours per year, so the cost per hour is \$26.47. This TDABC method is not limited to only time but also allows capacity to be measured in other units, for example, memory storage can be measured in terms of megabytes supplied.

In different scenarios, there may be variations in the calculation of the cost per time unit for supplying resources to activities on a per unit basis. For example, all recruitment events will not be at the same level, and each advertisement may differ while time allocated to interviews and selection may vary depending on the programme, its requirements, and whether there was any additional or follow-up work required through the process. The objective is for a realistic (not precise)

estimate of the time taken by employees to perform an activity. So, for our example, each recruitment event is 500 hours, ongoing outreach is 150 hours, advertising is 80 hours, interviewing is one hour, and selection is 30 minutes.

The calculation of the cost-driver rates using the two input variables we have just estimated is shown in table 1 below.

**Table 1:** Cost driver rates for the Recruitment Department using the TCABC approach

Activity	Hours	Cost (\$)	Cost/Unit (\$)
Recruitment events	500	26.47	13,235.00
Outreach activities	150	26.47	3,970.50
Advertising campaigns	80	26.47	2,117.60
Interviews	1.5	26.47	39.71
Selection	0.5	26.47	13.24

It should be noted that some of these activities now cost much less than the traditional ABC method, which reveals the technical disadvantage of the traditional ABC method.

The traditional ABC survey produced a work distribution of 35%, 15%, 18%, 20%, and 12% of the employees’ time performing the department’s five activities based on their total productive time, which was significantly less than their practical capacity. What TDABC has shown is that the calculation of resource costs per time unit pushes the company to incorporate estimates of the practical capacities of its resources and cost drivers to provide more accurate signals about the cost and the underlying efficiency of its processes.

The TDABC enables management to report costs on an ongoing basis that shows costs associated with business activities and time spent. The recruitment department will need more funds and resources during the recruitment time of the year than during the period of the interview and selection process. During such periods, staff may be able to engage in training activities or take personal leave.

It is also easier for managers to update the cost driver rates which can be influenced by either a change in the price of a resource supplied such as a salary increase, or if new responsibilities are added to or withdrawn from the department like outreach services. The second factor which may cause a change to the activity cost driver rate is a shift in the efficiency of the activity, which could be a manual process that is now automated and takes less time and fewer resources, such as issuing acceptance or rejection letters. This reduces the unit time estimates

and the demands on resources, but it should be noted that the cost of whatever improvement must be included in the overall calculation to get the real cost. The continuous updating and monitoring of the ABC model allows management to have a more real-time and accurate reflection of existing conditions and can make faster decisions which keeps the institution relevant and financially sustainable. Management has quality information to negotiate and advocate for its programmes and be proactive in decision-making.

TDABC can accommodate complex and evolving operations by incorporating time equations that enable the model to reflect how order and activity characteristics cause processing times to vary. The simplification of the estimation process produces a more accurate cost model than would be possible using traditional ABC techniques.

### **Beyond budgeting**

Beyond Budgeting is a management philosophy and approach that challenges traditional budgeting practices, emphasising flexibility, decentralised decision-making, and continuous performance management (Hope and Fraser 2003). While not a specific costing methodology, Beyond Budgeting principles align with financial sustainability goals by promoting adaptive resource allocation and strategic agility. This approach is particularly useful in dynamic and complex environments, such as HEIs, where flexibility and responsiveness are crucial.

Beyond Budgeting empowers departments with the ability to have decentralised decision-making, thereby making it more responsive to meet its changing financial and operational needs. Departments are no longer restricted to annual budgets to meet their needs, like laboratory upgrades to secure a research grant, or offering new courses in the middle of the academic year. Resources are allocated based on immediate needs rather than predetermined budget allocations, thereby ensuring that funds go where they are needed the most.

Continuous planning and forecasting can be accommodated easily, thereby allowing for more time-sensitive adjustments to keep updated to the latest trends and fluctuations in the market. For HEIs, this can be when a new foreign medical school is introduced to the market, and they lowball on pricing to attract new local students so they can build market share. An indicator such as low registration may be a signal to the department to adjust so that they can meet their registration targets while not incurring financial losses.

The University of Cambridge adopted Beyond Budgeting principles in its

budgeting processes, empowering academic units to manage their budgets autonomously based on performance metrics and strategic priorities rather than fixed targets. This approach enhanced financial transparency, accountability, and resource optimisation across the institution, and also fostered an environment of continuous improvement and competition (Brown and Green 2018). Another instance is the University of Berkeley which had a structural deficit of \$159 million in 2016. The campus launched a five-year plan to bring the budget into balance by 2020 by implementing aspects of the Beyond Budgeting approach which engaged management in continuous planning thereby allowing the timely response to challenges and opportunities (UC Berkeley n.d.).

## Summary

Costing methods are essential for HEIs to understand, manage, and control their costs effectively so that financial sustainability can be achieved. While each method has its strengths and weaknesses, choosing the most appropriate costing approach depends on factors like available resources and the nature of cost drivers. Utilising the right costing method enables HEIs to enhance decision-making, optimise resource allocation, and achieve sustainable growth. The primary benefits of implementing a costing approach in higher education include the following:

- Understanding the true cost of education involves gaining a comprehensive view of the expenses associated with delivering educational programmes and services. By systematically allocating costs to academic departments, research initiatives, student support services, and administrative functions, institutions can precisely quantify the resources needed for each activity. This insight is crucial for assessing programme profitability, identifying cost-saving opportunities, and optimising resource allocation.
- Transparent and accountable cost management will benefit the overall governance and management framework of HEIs. Limited transparency in cost allocation, opaque pricing structures, and insufficient communication about pricing decisions can erode stakeholder confidence and institutional credibility. By providing clear and comprehensive information about institutional costs and expenditures through financial reports, budget documents, and other channels, HEIs can foster trust and accountability among students, faculty, staff, donors, and regulatory agencies.

HEIs can consider adopting a hybrid costing model that combines traditional



costing with ABC to capture both macro-level and activity-based costs accurately. This approach ensures a comprehensive cost analysis for informed decision-making. Utilising advanced financial management software and analytics tools to implement costing methodologies effectively enhances accuracy, efficiency, and timeliness in decision-making processes.

Each costing methodology has its specific applications. Traditional costing is straightforward but may lack precision, while ABC and TDABC provide detailed and precise cost information but are more complex. Beyond Budgeting offers flexibility and promotes continuous improvement but requires significant organisational change. The choice of methodology should align with the HEI's specific needs, capabilities, and goals to enhance decision-making, optimise resource allocation, and achieve sustainable growth.

HEIs can build strategic partnerships with industry, government agencies, and alumni networks to diversify income streams. Robust fundraising campaigns, alumni engagement programmes, and grant-seeking strategies can supplement traditional revenue sources. Effective monitoring and evaluation mechanisms are essential to track financial performance, cost efficiencies, and revenue generation strategies. Regular audits and performance reviews ensure alignment with sustainability goals and facilitate necessary adjustments.

By diversifying income streams, HEIs reduce financial dependency on any single source, making them less vulnerable to economic fluctuations or funding cuts. Strategic partnerships, grants, and donations help to ensure financial resilience. This financial flexibility enables HEIs to invest in innovative programmes, infrastructure, and student support services.

Developing the income generation capacity of HEIs involves appropriate research to maximise earning potential. Providing resources and training for faculty to enhance grant-writing skills can increase success rates. Sourcing grants from various donors can mitigate funding risks. Market research can identify opportunities for expanding auxiliary income channels. Strategic partnerships and robust fundraising campaigns further diversify income streams, enhancing financial sustainability.

By leveraging the right costing method, HEIs can significantly improve their decision-making processes, optimise resource allocation, and achieve sustainable growth. The choice of costing methodology should align with the institution's specific needs and goals, enabling them to navigate the complexities of the educational landscape effectively.

## References

- Altbach, Phillip G., and Jane Knight. 2007. "The Internationalization of Higher Education: Motivations and Realities." *Journal of Studies in International Education* 11 (3-4): 290-305.
- Altbach, Phillip G., and Jamil Salmi. 2011. *The Road to Academic Excellence: The Making of World-class Research Universities*. Washington D.C: World Bank Publications.
- Borges, Pedro, Maria do Céu Gaspar Alves, and Rui Silva. 2024. The Activity-Based Costing System Applied in Higher Education Institutions: A Systematic Review and Mapping of the Literature. *Businesses* 4: 18-38. 10.3390/businesses4010002
- Cellini, Stephanie Riegg, and Claudia Goldin. 2012. "Does Federal Student Aid Raise Tuition? New Evidence on For-profit Colleges." *American Economic Journal: Economic Policy* 6 (4): 174-206.
- Cooper, Robin, and Robert S. Kaplan. 1992. "Activity-based Systems: Measuring the Costs of Resource Usage." *Accounting Horizons* 6 (3): 1-13.
- Courant, Paul, and Marilyn Knepp. 2002. "Activity-based Budgeting at the University of Michigan." In *Incentive-based Budgeting Systems in Public Universities*, edited by Douglas Priest, William E. Becker, Don Hossler, and Edward P. St. John, 137-160. Northampton, MA: Edward Elgar.
- de Wit, Hans, and Fiona Hunter. 2015. "The Future of Internationalization of Higher Education in Europe." *International Higher Education* 83: 2-3. <https://doi.org/10.6017/ihe.2015.83.9073>
- Dove, Kent E. 1988. *Conducting a Successful Capital Campaign: A Comprehensive Fundraising Guide for Non-profit Organizations*. 1st edition. San Francisco: Jossey-Bass.
- Drudy, Sheelagh. 2011. "Reforming Education: Quality and Equality at a Time of Austerity." *Studies: An Irish Quarterly Review* 100 (398): 167-91.
- Drury, Colin. M. 2018. *Management and Cost Accounting*. Boston, Massachusetts: Cengage Learning EMEA.
- Ekholm, Bo-Goran, and Jan Wallin. 2000. "Is the Annual Budget Really Dead?" *The European Accounting Review* 9 (4): 519-39.
- Endowments and Finance. 2016. "NACUBO Endowment Study 2016". Washington, DC: National Association of College and University Business Officers.
- Etzkowitz, Henry, Andrew Webster, Christiane Gebhardt, and Branca Regina Cantisano Terra 2000. "The Future of the University and the University of the Future: Evolution of Ivory Tower to Entrepreneurial Paradigm." *Research Policy* 29 (2): 313-30. doi:10.1016/S0048-7333(99)00069-4
- Frumkin, Peter, and Mark T. Kim. 2001. "Strategic Positioning and the Financing of Non-profit Organizations: Is Efficiency Rewarded in the Contributions Marketplace?" *Public Administration Review* 61 (3): 266-75.
- Garrison, Ray H., Eric W. Noreen, and Peter C. Brewer. 2020. *Managerial Accounting*. New York, NY: McGraw-Hill Education.

- Gordon, Rita S. 2019. University Auxiliary Services: A Review of Factors Impacting Privatization Decisions. US Department of Education. [chrome extension://efaidnbmninnib-  
pcajpcglclefindmkaj/https://files.eric.ed.gov/fulltext/ED597113.pdf](chrome-extension://efaidnbmninnib-<br/>pcajpcglclefindmkaj/https://files.eric.ed.gov/fulltext/ED597113.pdf)
- Guthrie, James, Federica Ricceri, and John Dumay. 2020. "Reflections and Projections: A Decade of Intellectual Capital Accounting Research." *Journal of Intellectual Capital* 21 (2): 243–58.
- Hilton Ronald, Michael Maher, and Frank Selto. 2019. *Cost Management: Strategies for Business Decisions*. 7th edition. New York, NY: McGraw-Hill Education.
- Hope, Jeremy, and Robin Fraser. 2003. *Beyond Budgeting: How Managers Can Break Free from the Annual Performance Trap*. Brighton, Massachusetts: Harvard Business Review Press.
- Hornngren, Charles T., Srikant M. Datar, and Madhav V. Rajan. 2012. *Cost Accounting: A Managerial Emphasis*. Upper Saddle River, New Jersey: Prentice Hall.
- Hornngren, Charles T., Srikant M. Datar, and Madhav V. Rajan. 2018. *Cost Accounting: A Managerial Emphasis*. 16th edition. London, England: Pearson.
- Hossler, Don, Bob Bontrager, and Lauryn Tom. 2015. *Handbook of Strategic Enrollment Management; Cover Design, Lauryn Tom*. 1st edition. San Francisco, California: Jossey-Bass.
- Innes, John, and Falconer Mitchell. 2000. "Activity-based Costing in the UK's Largest Companies: A Comparison of 1994 and 1999 Survey Results." *Management Accounting Research* 12 (2): 203–12.
- Kaplan, Robert S., and Steven R. Anderson. 2007. *Time-Driven Activity-based Costing: A Simpler and More Powerful Path to Higher Profits*. Brighton, Massachusetts: Harvard Business Review Press.
- Krishnan, Anbalagan. 2007. "An Application of Activity-based Costing in Higher Learning Institution: A Local Case Study." *Contemporary Management Research* 2 (2): 75. <https://doi.org/10.7903/cmr.652>
- Krishnaiah, J., Syeda Begum, Y. Madhuri, and M. Kamraju. 2023. The Importance of Infra-structural Facilities in the University. *Indonesian Journal of Educational Research and Technology* 4 (1): 29–36.
- Khodadadzadeh, Tahereh. 2015. "A State-of-art Review on Activity-based Costing." *Accounting* 1: 89–94.
- Leonard, Sarah. 2024. "The Impact of Government Subsidies on Entrepreneurial Activities." *International Journal of Economic Policy* 4 (2): 27-39. 10.47941/ijecop.1764.
- Marginson, Simon. 2016. *The Dream Is Over: The Crisis of Clark Kerr's California Idea of Higher Education*. Oakland, California: University of California Press.
- Marginson, Simon, Brendan Cantwell, Daria Platonova, and Anna Smolentseva, eds. 2023. *Assessing the Contributions of Higher Education*. Cheltenham, UK: Edward Elgar Publishing.
- Mitchell, Michael, Michael Leachman, and Matt Saenz. 2019. *State Higher Education Funding Cuts Have Pushed Costs to Students, Worsened Inequality*. Washington, DC: Centre on Budget and Policy Priorities.

- Naidoo, Moonsamy. 2010. "Traditional Cost Systems of South African Private Higher Education Institutions." *Problems and Perspectives in Management* 8: 82–90.
- Nguyen, Thanh. 2010. "The Impact and Importance of Activity Based Costing on Financial Performance of Manufacturing Firm." Graduation Project, HELP University College.
- Shapiro, Doug, Aftet Dundar, Faye Huie, Phoebe Khasiala Wakhungu, Xin Yuan, Angel Nathan, and Youngsik Hwang. 2017. "Completing College: A National View of Student Attainment Rates – Fall 2011 Cohort." *Signature Report* no. 12a. Herndon, VA: National Student Clearinghouse Research Center.
- UC Berkeley. (n.d.). *Budget Process Overview*. UC Berkeley Budget Process.
- Välimaa, Jussi, and David Hoffman. 2008. "Knowledge Society Discourse and Higher Education." *High Education* 56: 265–85. <https://doi.org/10.1007/s10734-008-9123-7>
- Webb, James. 2015. "A Path to Sustainability: How Revenue Diversification Helps Colleges and Universities Survive Tough Economic Conditions." *Journal of International and Interdisciplinary Business Research* 2: 69–97.
- Whitford, Emma. 2021. "Pennsylvania Board Votes 'Yes' on Consolidation" *Inside Higher Ed*.
- Zhang, Jun, and Xiaofang Huang. 2023. "Investigation on the Application of Cost Management in Operational Efficiency and Performance Evaluation." *Manufacturing and Service Operations Management* 4 (5). Clausius Scientific Press.